Safety Manual

2019

IF UNUSUAL CONDITIONS OCCUR THAT ARE NOT COVERED BY THIS MANUAL, CONTACT
WARREN OFFICE
24 HOURS A DAY, 7 DAYS
AT
1-586-754-5400

DO NOT PROCEED IF YOU ARE NOT CERTAIN

Revised 10/16/2018

SAFETY & HEALTH POLICY

Monarch Welding & Engineering, Inc. (MWE) believes that our employees are our most important assets. Therefore, we strive to provide the safest and the healthiest work environment possible.

Our goal is zero accidents that cause injury to our employees and sub-Contractors, property loss, and interrupt our work flow. Management and all employees will collaborate in planning, developing, and implementing safe and healthy work methods, practices, and programs.

All MWE supervisors and managers have the responsibility to ensure that each and every employee receives the proper training and instruction necessary to perform his/her job safely. Management is accountable for providing a workplace free of recognizable hazards that may cause injuries and/or illnesses. All supervisors, managers, and foremen exemplify company safety and health codes.

All employees are to participate in the prevention of illnesses and injuries. We expect all employees to adhere to and support our zero accidents goal. With the total commitment of management and employees alike, the elimination of accidents and injuries is an achievable goal. A safe workplace is a productive workplace. In keeping with this goal, we have adopted a 100% drug and alcohol free work environment.

We are personally dedicated to the continued improvement of our safety and health performance and authorize the actions necessary to achieve these objectives. We expect your full participation in our safety and health program.

BRW

Brian Wimmer
President

Frank Wimmer

Frank Wimmer
Vice-President Safety and Health

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SECTION 1 – Responsibilities – Revised 05-17-2016

1.1. President

1.1.1. Responsible for the corporation's safety performance

1.1.2. Responsibilities include:

1.1.2.1. Establishes, with the corporate staff, a clear understanding of specific duties and responsibilities.

1.1.2.2. Develops safety objectives and means of attaining these objectives. Monitor progress in attaining safety objectives.

1.1.2.3. Maintains a positive and responsible attitude toward all employees in regard to safety.

1.1.2.4. Reviews corporate safety performance and implements necessary actions.

1.1.2.5.Chairs and schedules safety committee meetings.

1.1.2.6. Maintains an effective line of communications on safety matters through all levels of management.

1.1.2.7. Periodically reviews corporate safety program along with Corporate Safety Director to determine effectiveness and proposes changes to improve performance and update to changing times or conditions.

1.1.2.8. Periodically reviews safety performance. If areas are deficient, initiates actions to improve performance as required.

1.2. Safety & Health Director

1.2.1. Responsible for providing all levels of management with necessary service and information regarding safety activities

1.2.2. Responsibilities include:

1.2.2.1. Provide advice and direction to promote the effectiveness of the safety program.

1.2.2.2. Keeping management informed of current safety/environmental regulations at federal, state and local levels as required.

1.2.2.3. Reviews lost time injuries, informs management of any accident trends and possible controls to reduce injuries and accidents.

1.2.2.4. Ensures accidents and injuries are reported promptly and accurately by reviewing accident reports and providing instructions as required. Ensures

the required information is reported. Shall contact jobsite supervision to ensure necessary corrective action is taken.

1.2.2.5. Conducts safety inspections of projects to check compliance with safety program and applicable rules, regulations and codes. Reports findings to management and supervisors as needed. Shall ensure any necessary corrective action needed has been completed.

1.2.2.6. Meets and discusses with president on revisions to safety program, safe work procedures or safety rules.

1.2.2.7. Plans safety meeting agenda with staff.

1.2.2.8. Informs president of accident statistics, trends, costs and proposed ways to improve safety performance.

1.2.2.9. Reviews safety meeting documentation to ensure employees are being trained according to the safety program guidelines.

1.2.2.10. Reviews and develops safety policies and procedures as needed or annually; makes corrections as needed. Must include Confined Space Program, PPE, Training, HAZCOM/HAZMAT, and Fall Protection. Checks to see this equipment is used as designated.

1.2.2.11. During safety inspections, checks subcontractors' compliance with established rules, regulations and applicable codes. Informs superintendent of findings so necessary corrective action can be taken

1.2.2.12. Develop and implement safety training programs and orientation.

1.2.2.13. Shall participate in pre-project safety planning and training. Shall review owner's safety policies for compliance with Monarch Welding & Engineering and also MIOSHA/OSHA.

1.3. **Superintendent/General Foreman**

1.3.1. Responsible for enforcing safety program in areas, or with employees under his/her direct supervision and participating in pre-commencement safety planning/pre-task meetings.

1.3.2. Responsibilities include:

1.3.2.1. Enforcement of entire safety program and any special safe work procedures deemed necessary for unusual conditions or hazards in his/her assigned area.

1.3.2.2. Maintains open line of communications with foremen pertaining to safety.

1.3.2.3. Enforces compliance with safety rules and regulations through safety inspections and daily observations.

1.3.2.4. Ensures that required safety equipment is appropriate to the activities/hazards, properly maintained and available.

1.3.2.5. Assists in investigation of all injuries/incidents/near misses in his/her assigned areas.

1.3.2.6. Helps foremen in arranging safety: orientation, training and meetings.

1.3.2.7. Cooperates with superintendent and Safety Department in implementing inspection schedules as required.

1.3.2.8. Maintains an effective housekeeping program in the areas under his/her supervision. Takes any necessary corrective action.

1.3.2.9. Participates in supervisors safety meetings.

1.3.2.10. Develops enforces and implements pre-planning activities and JSA. This information must be documented using either a site specific form or Monarch form.

1.3.2.11. Shall ensure that subcontractors are in compliance with all required safety programs in this manual and any other applicable rules. Shall convey all information necessary to subcontractor.

1.3.2.12. Shall obtain any necessary permits

1.4. Foremen

1.4.1. Responsible for the safety of employees and the safe condition of his/her assigned work area. Foremen will also participate in pre-commencement safety planning/pre-task meetings.

1.4.2. Responsibilities include:

1.4.2.1. Enforcement of entire safety program and any safe work procedures established on the project.

1.4.2.2. Control safety in assigned work area.

1.4.2.3. Frequent inspection of work area and correct hazards. Reports to assistant superintendent/general foremen any hazards he/she is unable to correct. Prior to work, periodically and after work, shall inspect work areas and correct hazards. Foremen shall report any deficiencies to general foreman or superintendent of any hazards that he/she is unable to correct.

1.4.2.4. Ensures employees inspect tools, equipment and scaffolding before use.

1.4.2.5. Continuously inspects assigned equipment. Communicates verbally or written, with equipment operators to determine if any defects exist; shall tag and remove equipment from operation until fixed.

1.4.2.6. Enforces the use of necessary personal protective equipment in his/her gangs and work areas.

1.4.2.7. Conducts safety meeting with his/her employee's daily JSA information and toolbox meetings weekly or as directed by project supervision. Daily meetings should at minimum cover: hazards, housekeeping, PPE, machinery/equipment and hazardous conditions. Completes required documentation of meetings.

1.4.2.8. Participates in other safety meetings as directed by project supervision.

1.4.2.9. Investigate all injuries and take necessary corrective action to prevent reoccurrence.

1.4.2.10. Train employees in safe work procedures, company rules and policy.

1.4.2.11. Daily observation of employees to ensure compliance with safety rules, regulations and procedures.

1.4.2.12. Safety orientation of assigned new employees.

1.4.2.13. Knowledge and understanding of rules, regulations and information contained in safety manual.

1.4.2.14. Sets a proper example and maintains a positive safety attitude with all employees.

1.4.2.15. Inform employees of potential hazards in work area and instruct them on how to control hazards.

1.4.2.16. Ensure employees, under their supervision, understand safety requirements and understand both verbal and written instructions/policies.

SECTION 2 – Welding & Cutting – Revised 05-17-2016

2.1. Purpose

2.1.1. To reduce the possibility of injury or damage to property during welding, cutting, burning or brazing.

2.2. Scope

2.2.1. All Monarch Welding & Engineering employees and subcontractors. This policy is in accordance with OSHA Standard 29CFR / 296.350-354 and MIOSHA Part 7 of the construction safety standards.

2.3. General

2.3.1. Training

2.3.1.1. All persons who perform any of the above activities must have training in technique, materials and proper use of equipment.

2.3.1.2. All Employees must understand site specific "Hot Work Programs" and air monitoring requirements.

2.3.1.3. Persons acting as fire watch must be trained in the use of fire extinguisher and the facilities fire alarm system.

2.3.1.4. Persons using welding equipment must have training in the hazards involved with these processes, such as, fume generation, burns, light rays, ext.

2.3.1.4.1. Any welding, cutting or burning of lead base metals, zinc, cadmium, mercury, beryllium or exotic metals or paints not listed here shall have proper ventilation or respiratory protection

2.3.1.5. Personal using welding machines shall turn them off it not being used of a prolonged period of time (lunch, over-night).

2.3.1.6. Personal operating equipment should report any equipment defect or safety hazards and discontinue use of equipment until its safety has been assured. Repairs shall be made only by qualified personnel.

2.3.1.7. Employees shall be instructed not to use an electric welding machine when on a metal ladder.

2.3.1.8. Employees shall be trained on eye protection when performing welding or cutting operations.

2.3.1.9. Employees shall be trained to site specific requirements as needed.

2.3.2. Fire Protection

2.3.2.1. Site Specific Requirements MUST be followed and may require continuous air monitoring LEL levels

2.3.2.2. Flammable material should be removed from the area where the welding or cutting is to be done. If flammable material is to be moved, it must be moved to a safe place a minimum of 35 feet from where hot-work is being performed.

2.3.2.3. If flammable material cannot be moved, suitable guarding must be maintained to prevent fire.

2.3.2.4. If the two above procedures cannot be met, then welding or cutting should not be performed and you should contact supervision immediately.

2.3.3. Fire Watch

2.3.3.1. An employee, who is properly trained shall be assigned as a fire watch person if:

2.3.3.1.1. Large amounts of combustible materials within thirty five feet of the welding operation, or
2.3.3.1.2. Opening or cracks, within thirty five feet of the operation, exist where sparks could fall through and ignite combustible material in another area or
2.3.3.1.3. If combustible material is adjacent to a metal wall, roof or partition that is likely to ignite by conduction or radiation and
2.3.3.1.4. This person will remain on watch for at least thirty minutes after operation cease to assure that any smoldering fire is extinguished or unless site specific dictates otherwise, or if conditions warrant further monitoring.

2.3.3.2. The Fire Watch shall have a means of extinguishing a fire in his immediate area. The means for extinguishing a fire must be suitable for the type/size of fire.

2.3.4. Permits

2.3.4.1. Prior to welding or cutting operation a qualified person will inspect the area to determine if it is safe to weld or cut. Upon determining that it is safe, a written hot work permit shall be issued if required by owner.

2.3.4.2. When radiographic non-destructive testing occurs, follow site specific procedures and contact Safety Department.

2.3.5. Confined Space

2.3.5.1. Whenever an employee must enter a confined space for welding, the confined space policy must be followed and PPE and ventilation must be used.

2.3.5.2. If a space is not immediately deemed a confined space, but the process of welding, cutting or brazing might generate hazardous fumes, gasses or dust, this space will be treated as a confined space.

2.3.5.3. All permit required confined spaces must have an attendant on the outside of the space for rescue purposes.

2.3.5.4. All gas bottles and welding machines are to be kept on the outside of a confined space.

2.3.5.5. When not in use, welding machines should be turned off, and torches/leads removed.

2.3.6. First Aid Supplies

2.3.6.1. First aid kits are available on all job sites. Follow first aid and blood borne pathogen policy.

2.4. Oxygen-Fuel Welding and Cutting

2.4.1. Cylinder for the storage of oxygen and fuel shall only be to of the type approved by DOT 49CFR Part 178 subpart C.

2.4.2. All hoses, gauges, regulators and torches must be approved for oxygen – fuel welding.

2.4.3. A competent person, usually supervision who has been trained in the use of oxygen-fuel welding systems, shall specify and inspect the use of this equipment. They will have the responsibility to assure it is being used properly.

2.4.4. Oxygen-fuel cylinders shall be secure, in an upright state, in an approved holder for such cylinders or by a chain, bracket, or other restraining device.

2.4.5. Cylinders must be stored at least 20 feet from fuel gas cylinders and at temperatures less than 125 Degrees F.

2.4.6. A cylinder should never be dropped, dragged, rolled on its side or struck violently.

2.4.7. When stored, cylinders must have their safety cap installed if it is part of the system.

2.4.8. All connections, couplings, and fittings are to be leak-free. Also, flash back arrestors shall be installed, used and maintained at the source of gas *or* torch hand set. Hoses, gauges, torches and cylinders shall be inspected prior to work.

2.5. Arc Welding

2.5.1. Only trained welders should use arc-welding equipment.

2.5.2. Equipment should be maintained on a regular basis by a qualified repair person.

2.5.3. All ARC welders must be familiar with the following welding and cutting standards:

2.5.3.1. Use the correct equipment for the type of work being done.

2.5.3.2. Install all arc-welding machines in a safe manner.

2.5.3.3. Standard machines shall be designed to operate at temperatures less than 104 Degrees F., at altitudes less than 3,300 feet, and in atmospheres containing gasses, dust, and light rays produced by the welding arc.

2.5.3.4. If unusual service conditions exist, such as corrosive fumes, steam or excessive humidity, oil vapor, flammable gasses, excessive dust, exposure to weather or unusual seacoast conditions, the welding machine must be designed to operate in those conditions safely.

2.5.3.5. Input power terminals, tap change devices and live metal parts shall be completely enclosed.

2.5.3.6. Ground shall be done in a manner that is mechanically strong and electrically adequate for the required current.

2.5.3.7. Fire curtains and light ray curtains will be used when other workers or materials could be affected by the use of a welder.

2.5.3.8.Equipment shall be inspected before use.

2.5.3.9. All employees shall comply with all federal, state, Monarch, owners rules in regards to welding/cutting.

2.5.4. Hexavalent Chromium

2.5.4.1. Prior to welding and chrome containing material. The safety department must be contacted. The safety department shall evaluate the welding plan and determine what testing, PPE, ventilation, and training will be required.

2.5.4.2. If it is determined that employees may exceed the action level (2.5 ug/m^3) all employee shall be required to the proper respiratory protection as per our respiratory protection program.

2.5.4.3. If it is determined that employees may be exposed above the PEL (5.0 ug/m^3). All employees shall be given PPE (clothing) to protect from skin contact.

2.5.4.4. Any employee exposed at or above the action level for 30 days or more a year shall have medical surveillance (as per 1926.1126(i.)).

2.5.4.5. Change room and eating facilities shall be kept free of CR^6 contaminated clothing and equipment.

2.5.4.6. All employees who may be exposed to CR^6 shall be trained per (1926(j.)).

SECTION 3 - Confined Space Policy - Revised 06-08-2018

3.1. Purpose

3.1.1. This policy outlines the proper safeguards and precautions that must be taken to minimize the possibility of personal injury while operating in a confined space. It is to establish uniform practices to be used when opening, entering and occupying confined spaces.

3.2.Scope

3.2.1. These procedures apply to all persons, including contractors and escorted visitors, working for Monarch Welding & Engineering, Inc. This policy and its procedures are in accordance with OSHA, Rules 29 CFR 1910.146 and MIOSHA, Part 90.

3.2.2. A confined space is defined as follows:

3.2.2.1. A space that is large enough and so configured that an employee can bodily enter and perform their assigned work.

3.2.2.2. An area that has limited or restricted means of entry or exit (i.e. tanks, vessels, towers, sewers, excavations 4' deep, vessel skirts, vaults, and pits).

3.2.2.3.A place that is **not** designed for continuous human occupancy.

3.3.Terms & Definitions

3.3.1. **Acceptable entry conditions**

3.3.1.1. The conditions that must exist in any confined space to allow safe entry and ensure that the employees are able to work within that space.

3.3.2. **Attendant**

3.3.2.1. An individual that is stationed outside a confined space that monitors the authorized entrants and performs all of the duties assigned in the employer's confined space program.

3.3.3. **Authorized entrant**

3.3.3.1. An employee/contractor who is approved by the employer to enter a confined space.

3.3.4. **Competent person**

3.3.4.1. One who is capable of identifying existing and predictable hazards and is authorized to take corrective measures to eliminate them.

3.3.5. **Controlling Contractor**

3.3.5.1. Employer that has overall responsibility for construction at the worksite.

3.3.6. **Engulfment**

3.3.6.1. Surrounding of a person by a liquid or flowable solid substance that can cause death by strangulation, constriction, crushing, or suffocation.

3.3.7. **Entry**

3.3.7.1. This action is considered to have occurred as soon as any part of the entrant's body breaks the plane of an opening into a confined space.

3.3.8. **Entry Employer**

3.3.8.1. Any employer who decides that an employee it directs will enter a permit space.

3.3.9. **Entry Permit**

3.3.9.1. Written documentation that is provided by the employer to allow and control entry into space that contains:
- 3.3.9.1.1. the space to be entered, purpose of entry,
- 3.3.9.1.2. date and duration of entry permit,
- 3.3.9.1.3. names of supervisors, attendants, entrants within space,
- 3.3.9.1.4. means of detecting an increase in atmospheric hazard levels,
- 3.3.9.1.5. signatures of entry supervisors,
- 3.3.9.1.6. hazards of space,
- 3.3.9.1.7. measures used to isolate space and to eliminate or control space hazards before entry,
- 3.3.9.1.8. acceptable working entry conditions,
- 3.3.9.1.9. rescue and emergency services that can be summoned and the means for summoning those services,
- 3.3.9.1.10. communication procedures used by attendants and entrants,
- 3.3.9.1.11. Safety equipment needed to enter space (PPE, testing equipment, communication equipment, rescue equipment, and any other information needed.)

3.3.9.2. And is posted at entrance of every space.

Additional permits such as hot work may be needed before work is performed in space.

3.3.10. **Entry supervisor**

3.3.10.1. The person responsible for determining if acceptable entry conditions are present in a confined space where work is planned. This individual is also accountable for authorizing entry, overseeing operations, and terminating entry as required by this policy.

3.3.11. **Hazardous atmosphere**

3.3.11.1. an atmosphere that may expose employees to the risk of death, incapacitation, impairment of ability to self-rescue(escape unaided from space), injury, or acute illness from one or more of the following causes:

3.3.11.1.1. Flammable gas, vapor, or mist in excess of 10 percent of its lower flammable limit (LFL),
3.3.11.1.2. Airborne combustible dust at a concentration that meets or exceeds its LFL or obstructs vision at a distance to 5 feet or less;
3.3.11.1.3. Atmospheric oxygen concentration below 19.5 percent or above 23.5 percent;
3.3.11.1.4. Atmospheric concentration of any substance for which has dose or a permissible exposure limit set forth by OSHA or any other governing authorities.
3.3.11.1.5. Any other atmospheric condition that is immediately dangerous to life or health.

3.3.12. **Host employer**

3.3.12.1. Employer that owns or manages the property where the construction work is taking place.

3.3.13. **Immediately dangerous to life or health (IDLH)**

3.3.13.1. Any condition that would interfere with an individual's ability to escape unaided from a permit space and that poses a threat to life or that would cause irreversible adverse health effects.

3.3.14. **Inerting**

3.3.14.1. Displacing the atmosphere in a space by a noncombustible gas to the extent that the resulting atmosphere is noncombustible. This may produce an IDLH oxygen-deficient atmosphere.

3.3.15. **Limited or restricted means for entry or exit**

3.3.15.1. Condition(s) that has a potential to impede an employee's movement into or out of a confined space. (Trip hazards, poor lighting, slippery floors, inclining surfaces and ladders, etc.)

3.3.16. **Lower flammable limit or lower explosive** limit

3.3.16.1. Minimum concentration of a substance in air needed for an ignition source to cause a flame or explosion

3.3.17. **Non-permit confined space**

3.3.17.1. A confined space that meets the definition of a confined space but does not meet the requirements for a permit- required confined space.

3.3.18. **Oxygen deficient atmosphere**

3.3.18.1. An atmosphere containing less than 19.5% oxygen by volume.

3.3.19. **Oxygen enriched atmosphere**

3.3.19.1. An atmosphere containing more than 23.5% oxygen by volume.

3.3.20. **Permit-required confined space**

3.3.20.1. A confined space that has one or more of the following:

3.3.20.1.1. Contains or has potential to contain a hazardous atmosphere;

3.3.20.1.2. Contains a material that has the potential for engulfing an entrant;

3.3.20.1.3. Has an internal configuration such that an entrant could be trapped or asphyxiated by inwardly converging walls or by a floor which slopes forward and tapers to a smaller cross-section; or converging walls;

3.3.20.1.4. Contains any other recognized serious safety or health hazard.

3.3.21. **Physical Hazard**

3.3.21.1. An existing or potential hazard that can cause death or serious physical damage. Examples include but are not limited to: Explosives; mechanical, electrical, hydraulic and pneumatic energy; radiation; temperature extremes; engulfment; noise; and inwardly converging surfaces. Physical hazard as also includes chemicals that can cause death or serious physical damage through skin or eye contact (rather than through inhalation)

3.3.22. **Prohibited condition**

3.3.22.1. Any condition in a permit required confined space that is not allowed by the permit for the period of time when entry has been authorized.

3.3.23. **Qualified person**

3.3.23.1. One who by possession of a recognized degree, certificate, or professional standing, or by extensive knowledge, training, and experience, has successfully demonstrated his ability to solve or resolve problems relating to the subject matter, the work, or the project.

3.3.24. **Rescue co-coordinator**

3.3.24.1. The rescue team member designated to co-ordinate shift rescue activities.

3.3.25. **Ventilate or ventilation**

3.3.25.1. Controlling a hazardous atmosphere using continuous forced-air mechanical systems to eliminate atmospheric hazard(s)

3.4. General

3.4.1. All confined space operations must have a pre-planning period before entry can begin.

3.4.2. Before any person physically enters any confined space, a confined space entry permit must be issued. This permit authorizes and approves that specific location, the work to be done, as well as the entrants and attendant. It certifies that all the existing and potential hazards have been evaluated and the necessary protective measures have and will be taken to ensure the safety of each worker. The proper signs must be posted, as appropriate, at all man ways and other points of entry. If required, use site specific confined space form; fax or send a copy of the completed form to Safety Department. If using Monarch form, fax or send a copy to Safety Department after completed. A permit is valid for a period of 1 shift not to exceed 12 hours, or unless site specifics specify otherwise.

3.4.3. It **must** be assumed that a confined space is hazardous and that it contains toxic and/or flammable material until there is definite evidence to the contrary. It is imperative that all necessary steps are taken to clean and thoroughly purge the confined space before any work is started.

3.4.4. The safety director, site supervisor, site foreman or the owner will identify and evaluate any hazard associated with a confined space prior to opening the area.

3.4.5. Any conditions making it unsafe to remove an entrance cover must be eliminated before the cover is removed. When entrance covers are removed, the opening must be immediately guarded by railing, temporary cover, or other temporary barrier that will prevent an accidental fall through the opening and that will

protect each employee working in the space from foreign objects entering the space.

3.4.6. A space classified as a permit-required confined space may be reclassified as a non-permit confined space under the following procedures:

3.4.6.1. If the permit space poses no actual or potential atmospheric hazards and if all hazards are eliminated without entry into the space, the permit space may be reclassified as a non-permit confined space for, as the non-atmospheric hazards remain eliminated.

3.4.6.2. Documentation for the basis of determining that all hazards in a permit space are eliminated including the date, location of the space, and the signature of the person making the determination.

3.4.6.3. Review and approval by the safety department.

3.4.6.4. If hazards arise within a permit space that has been reclassified as a non-permit space, each employee in the space must exit the space. The entry employer must then reevaluate the space and reclassify it as a permit space.

3.4.7. All confined space atmospheres must be tested before they are entered. Competent personnel will conduct the testing and the monitoring of the atmosphere as outlined. Hazards must be eliminated or isolated without entering the space.

3.4.8. The entry employer must document the basis for determining that all hazards in a permit space have been eliminated or isolated, through certification that contains the date, location of space, and the signature of the person making the determination. The certification must be made available to each employee entering the space or that employee's authorized representative.

3.4.9. A continuous forced air ventilation system will be used on all applicable confined space entries. A bottom and top man way should be opened to vent and allow an air mover to be installed to ensure airflow. Confined space atmospheres containing no hazardous substances do not require the use of continuous forced air ventilation.

3.4.10. All electrically powered equipment must be connected to a GFCI (ground fault circuit interrupter).

3.4.11. Barriers, signs, and/or caution tape must be posted at all open and vacant confined space entryways. Unauthorized individuals are not to proceed past the warning device.

3.4.12. All permits required for confined space entries require at least one attendant outside the space during the entry operations. Additional attendants are required

if one attendant cannot perform all of the required duties. All attendants can be identified by some visible means (i.e. vest, arm band, etc.).

3.4.13. An entry supervisor will approve all confined space entry permits. By signing permit an entry supervisor may be the Safety/Health Director or properly trained site supervisor or foreman. Permits are to be returned to office and held for annual review. Prior to entry, the entry supervisor shall conduct a pre-planning meeting with all employees involved in a specific entry.

3.4.14. At least one attendant will be equipped with a means of summoning rescue services (i.e. radio, flag, or siren).

3.4.15. Employees to be working in a confined space must be listed on the permit as to their entering and exiting times.

3.4.16. Any attendant, authorized entrant or entry supervisor involved in entry of confined space **must** have appropriate training.

3.4.17. Attendants may be assigned to more than one permit space as long as they can continue to perform all of their primary responsibilities accurately and effectively. If multiple spaces are assigned to a single attendant, it must be included in the permit program the means and procedures to enable the attendant to respond to an emergency affecting one or more of those permit spaces without distraction from their responsibilities.

3.5. Preparatory Work & Precautions

3.5.1. All of the preparatory work and precautions listed below must be completed before an entry permit can be issued.

3.5.1.1. Confined spaces are to be physically isolated from all sources to prevent any material or energy from entering the area.

3.5.1.2. All main and branch lines must be purged, drained, and bled as well as blinded or physically disconnected. It is imperative that all confined spaces be prepared as necessary to free the area of all contaminants with special attention given to volatile vapors and flammables.

3.5.1.3. Competent personnel are responsible for continuously monitoring the atmosphere in the confined space at all times.

3.6. Testing & Monitoring

3.6.1. All confined spaces will be tested for the lower flammability limit of combustible gases and vapors, oxygen deficiency, and toxic substances such as benzene, CO,

H_2S, SO_2, etc. (as required for the nature of the process and the type of respiratory protection used) before entry.

3.6.2. Continuous atmospheric monitoring equipment with proper alarms must be utilized within any permit required confined space. Periodically, the attendant will enter the information gathered from the confined space monitor.

3.6.3. When monitoring the confine space the readings need to fall in the ranges below. If the air exceeds these limits all entrants must exit the space.

Oxygen	CO	LEL	H2S
19.5 – 23.0	0 – 35 PPM	0 – 10%	0 – 50 PPM

3.7. Toxic Material

3.7.1. Atmospheres, that have been tested and were found to have no toxic materials, may be entered without respiratory protection.

3.7.2. Atmospheres containing toxic materials but are below the values immediately Dangerous to Life or Health (IDLH) may be entered when the proper respiratory equipment is worn.

3.7.3. Atmospheres containing toxic materials IDLH or where the toxicity is not known do not enter the space without the approval of Monarch safety department and the owner.

3.8. Training Requirements

3.8.1. Each affected employee must be trained prior to initial assignment, prior to a change in assigned duties, if a new hazard has been created or special deviations have occurred.

3.8.2. Documented training shall include employee name, trainer name/initials, and dates of training. Certification must be made available to employees & their authorized representative.

3.8.3. Monarch Welding and Engineering, Inc. shall train its employees for the following as per 1910.146(g)

3.8.3.1.Entrant
3.8.3.2.Attendant
3.8.3.3.Entry Supervisor

3.9. Assigning Duties to Entry Team

3.9.1. **Duties of the Entry Supervisor:** The entry supervisor is the person designed by the company's confined space entry program to assure the safety of employees entering permit required confined spaces. The entry supervisor must:

3.9.1.1. Know the hazards that may be faced during the confined space entry. The entry supervisor must provide information on the symptoms and consequences of exposures to hazards in the space to be entered.

3.9.1.2. Verify that the permit used by the company, including all required provisions, have been completed prior to the entry.

3.9.1.3. Terminate the entry and cancel permit if any of the required provisions of the permit are not met or if additional hazards which affect the safety of the entrants become apparent.

3.9.1.4. Verify that the designated rescue service have been advised of the entry and are available to respond to an emergency.

3.9.1.5. Enforce the removal of unauthorized persons who enter or attempt to enter the confined space

3.9.1.6. Be responsible for the adherence to procedures to ensure that all operations remain consistent with the terms of the entry permit and that entry conditions remain acceptable.

3.9.2. **Duties of the Attendant:** The attendant remains outside and monitors the employees working inside the space, as well as conditions outside of the confined space which could pose a hazard to entrants. This attendant must be trained in confined space entry, as well as attendant. The attendant will:

3.9.2.1. Know the hazards that may be faced during the entry including information on the symptoms and health effects, and how these exposures will affect the behavior of the entrants.

3.9.2.2. Monitor activities inside and outside the space to determine if it is safe for entrants to remain in the space. The attendant has the authority to order the entrants to evacuate the space if the attendant detects a new hazard or behavior change by the entrants indicating the effects of an exposure to a hazard inside the space.

3.9.2.3.Maintain an accurate count of authorized entrants in the space.

3.9.2.4. Remain outside of the space during entry operations until relieved by another attendant or completion of confined space entry.

3.9.2.5. Keep unauthorized persons from entering the space or interfering with the entry process.

3.9.2.6. Perform no other activities, which may interfere with the primary job of monitoring the safety and condition of the people inside the space.

3.9.2.7. Summon rescue and other emergency services as soon as it is determined that the entrants may need assistance.

3.9.2.8. Initiate or perform non-entry rescues as outlined in the rescue plan.

3.9.2.9. Obtain periodic readings from confined space monitor and note sample levels gathered.

3.9.3. **Duties of the Entrant:** Entrants are authorized to enter a permit required confined space. The entrant will:

3.9.3.1. Understand the hazards that may be faced during entry including information on the symptoms and consequences of exposures to the hazard.

3.9.3.2. Properly use all equipment necessary for the entry.

3.9.3.3. Maintain ongoing communication with the attendant.

3.9.3.4. Alert the attendant if unexpected conditions develop which may pose a danger.

3.9.3.5. Immediately exit the space when directed by the attendant.

3.9.3.6. Will only remove body mandatory PPE only after successfully leaving confined space.

3.9.4. **Rescue Procedures**

3.9.4.1. Rescue service must be on-site for immediately dangerous to life and health (IDLH) conditions while work is being performed. A third party rescue service will be required if services are not provided by the owner.

3.9.4.2. As part of the confined space entry process, provisions must be made to rescue people who become injured or overcome by hazards inside the confined space. The OSHA standard outlines three different ways to accomplish this: non-entry rescue, entry rescue by emergency responders from outside the company. All outside rescue sources shall be trained in confined rescue and training verified

3.10. Pre-planning

3.10.1.1.1. Preplanning is critical to the successful rescue of injured entrants. Every confined space is different, and each space needs to be evaluated to determine what type of rescue is feasible and what types of equipment and procedures are required to conduct the rescue. Rescue personnel shall perform a mock rescue prior to entry.

3.10.1.1.2. Confined space rescues may involve pulling a victim out of either a vertical or horizontal opening. Pre-entry planning should consider the possibility of entanglement with internal obstructions or equipment while pulling the victim out of the space. It may be necessary to remove victims through narrow openings.

3.10.1.1.3. In this case, the rescue team may need to use special rescue harnesses or techniques to complete the rescue.

3.11. Confined Space Rescue

3.11.1. Non-Entry Rescue

3.11.1.1. This procedure is to be used in a permit required confined space entry. Where practical, entrants are to be wearing the required full body harness upon entering these types of confined spaces. In the event of a rescue, a retrieval line will be attached to the entrant's back at or near shoulder level. This retrieval device will be inspected and tested semi-annually.

3.11.2. Entry Rescue

3.11.2.1. This procedure applies in all permit required confined space entries. On all shifts where a permit required confined space entry occurs, the entry supervisor shall verify that trained rescue services are available at all times entry is under way. All rescue services shall be contracted by the Safety Director. Monarch Welding & Engineering, Inc. does not train rescue services. If host employer provides these services Safety Department shall review training and procedures prior to entry.

3.12. Subcontractors

3.12.1. All subcontractors working for Monarch Welding & Engineering, Inc. shall adhere to these regulations and procedures, in addition to site specific.

SECTION 4 – Fall Protection - Revised 05-17-2016

4.1. Purpose

4.1.1. This policy ensures the safety of all employees working four or more feet above any surface. It insures that falls will be prevented and their related injuries.

4.2. Scope

4.2.1. This policy applies to all Monarch Welding & Engineering, Inc. employees, subcontractors and exported visitors. These procedures are in accordance with OSHA 29 CFR 1926.500 - 1926.503 Construction Industry Standards and MIOSHA Part 45 General Construction Standards.

4.3. Procedures

4.3.1. General

4.3.1.1. Each employee must be trained in fall arrest.

4.3.1.2. One of the three systems listed below must be used if the employee is four feet or more above a surface or is within six feet of an unprotected edge.

4.3.1.3. The safety department or site supervisor will specify as to the type and placement of the fall arrest protection.

4.3.1.4. It will be the safety department, site supervisor and/or foremen's responsibility to monitor the fall protection system and verify its integrity at a minimum of once daily.

4.3.1.5. Accidents and near misses will be investigated following in accordance with the accident and incident policy.

4.3.1.6. If owner has a procedure, contact safety department to verify approval prior to use.

4.3.1.7. Monarch Welding and Engineering shall provide for prompt rescue of employees in the event of a fall or shall assure the employees are able to rescue themselves.

4.3.2. Guard-rail System

4.3.2.1. A guardrail system may be used to protect an edge that is six or more feet above a surface.

4.3.2.2. The rails can be made from wood, pipe, wire rope, but cannot be made from steel or plastic banding.

4.3.2.3. The top rail must be 42" above the surface and can deflect a maximum of three inches with a 200 lb. force.

4.3.2.4. Mid-rail can be made of the same kind of material, but is placed at a height of 21".

4.3.2.5. Toe boards must be a minimum of 4" high and set up to prevents objects from falling off that level.

4.3.2.6. If a guard-rail is used as a connection point for a personal fall arrest system, it must be made of a smooth material so that is does not damage the lanyards and it must be capable of withstanding 5,000 lbs. per employee. Lifelines are limited to two persons at one time between supports. Employees will not use rails to tie off to, unless guard rails is specifically designed for use as a tie off point.

4.3.3. **Personal Fall Arrest Systems**

4.3.3.1. Only full body harnesses will be worn with single or double lanyards.

4.3.3.2. Harnesses and lanyards shall be inspected prior to each use for wear, damage and other deterioration and if any of these conditions are found, it will be removed from service immediately.

4.3.3.3. Snap hooks shall be sized to be compatible with the member to whom they are connected. Unless the snap hook is a locking type and designed for the following connections, snap hooks shall not be engaged:

4.3.3.3.1. Directly to webbing, rope or wire rope.
4.3.3.3.2. To each other.
4.3.3.3.3. To a d-ring to which another snap hooks or other connector is attached.
4.3.3.3.4. To a horizontal lifeline.

4.3.3.4. Lanyards must be attached so as to limit falls, a maximum of six feet or prevent contact with any lower level.

4.3.3.5. Vertical lifelines are limited to one person per lifeline.

4.3.4. **Controlled Access Zones**

4.3.4.1. When used to control access to areas where leading edge and other operations are taking place the controlled access zone shall be defined by a control line or by any other means that restricts access.

4.3.4.2. When control lines are used, they shall be erected not less than six feet nor more than twenty-five feet from the unprotected or leading edge.

4.3.4.3. The control line shall extend along the entire length of the unprotected or leading edge and shall be parallel to the unprotected or leading edge.

4.3.4.4. The control line shall be connected on each side to a guardrail system or wall.

4.3.5. **Safety Monitoring System**

4.3.5.1. Prior to establishing a safety monitoring system Foreman/General Foreman with approval of Safety Director shall appoint a competent person to monitor employees safety. Safety Monitor shall:

4.3.5.1.1. Be competent to recognize fall hazards.
4.3.5.1.2. Be on same walking surfaces and communicate orally with employees being monitored.
4.3.5.1.3. Monitor shall warn employees of unseen hazard or unsafe practices. Employees must comply with warnings from monitor.
4.3.5.1.4. No mechanical equipment may be stored in area where safety-monitoring system is in use.
4.3.5.1.5. Safety monitor can have no duties, which may interfere with his primary duty to monitor and protect employees to be monitored.

4.3.6. **Covers, Equipment and Material**

4.3.6.1. Covers for holes in floors, roofs and other working surfaces

4.3.6.2. Shall meet the following requirements:

4.3.6.2.1. All covers shall be capable of supporting, without failure, at least twice the weight of axle loads, employees' weight, equipment and materials that may be imposed on the cover at any one time.
4.3.6.2.2. All covers shall be secured when installed so as to prevent accidental displacement.
4.3.6.2.3. All covers shall be marked with the word "hole" or "cover" to provide warning of the hazard.
4.3.6.2.4. All equipment must be marked with ANSI or ASTM.
4.3.6.2.5. This shall be checked to assure the equipment is correct for intended use. Safety Department shall approve all safety equipment purchased.

4.3.6.2.6. All material used in a fall protection system shall be marked with an ASTM spec. and its use shall be approved by Engineering Department and the Safety Department.

4.4. Training

4.4.1. The following training provisions shall be part of this procedure:

4.4.1.1. Before beginning work, all employees who may be exposed to a fall hazard shall receive training as per 1926.503 in the following:

4.4.1.1.1. Nature of fall hazards.
4.4.1.1.2. Correct procedure for erecting or maintaining fall protection systems.
4.4.1.1.3. Use and operation of guardrail systems.
4.4.1.1.4. Their role in safety monitoring.
4.4.1.1.5. Limitations of fall protection systems.
4.4.1.1.6. Inspection of personal fall protection.
4.4.1.1.7. Use and storage of personal fall protection.

4.4.2. Each site will keep a "certification record" of training which will include:

4.4.2.1. Name or other identity of employee trained.

4.4.2.2. Dates of training.

4.4.2.3. Signature of person conducting training.

4.4.3. All these records will be sent to corporate headquarters upon completion of the project.

4.4.4. Retraining will occur if training becomes obsolete, changes are made in the fall protection system and in the worksite or inadequacies appear in the knowledge or use of fall protection by an affected employee.

SECTION 5 – Scaffolds - Revised 05-17-2016

5.1. Purpose

5.1.1. To provide guidelines for the erectors and users of scaffolds and platforms how to build them correctly and how to recognize hazards associated with scaffold use.

5.2. Scope

5.2.1. All employees, visitors, and subcontractors working on or around scaffolding. This policy complies with OSHA 1910.28 scaffolds and 1926.450 - 454 scaffold construction safety standard and MIOSHA Part 12 construction safety standards.

5.3. Training

5.3.1. Users

5.3.1.1. The employee must be trained by a qualified person to recognize the hazards associated with scaffold use. A qualified person is one: who by possession of a recognized degree, certificate or professional standing, or who by extensive knowledge, training and experience has successfully demonstrated his/her ability to solve or resolve problems related to the subject matter, the work or the project.

5.3.2. Hazards

- Electrical
- Fall Protection
- Falling Object Protection
- Load Capacity
- Handling Material on Scaffold
- General Use of Scaffold

5.3.3. Builders

5.3.3.1. The employee trained by a competent person in erecting, maintaining, disassembling, moving, operating, repairing or inspecting. A competent person is one who is capable of identifying existing and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them.

5.4. Retraining

5.4.1. When conditions change or an employee demonstrates lack of knowledge in the hazards associated with scaffold building and use, they shall be retrained to insure proper, safe use of the scaffold.

5.5. Construction and Capacity

5.5.1. All scaffolds will use the following criteria in their construction:

5.5.1.1. A qualified person will design them

5.5.1.2. A competent person will supervise assembly.

5.5.1.3. Bases must be set in a firm even spot to allow for stability.

5.5.1.4. They shall be plumb and level.

5.5.1.5. Scaffold brackets will only be assembled and attached by a certified welder.

5.5.1.6. Welders will not leave a bracket unattended unless they have completed the total weld. If they must leave a bracket that is not complete it will be removed to prevent unauthorized usage.

5.5.1.7. All scaffolds should have a top rail, mid rail and toe board.

5.5.1.7.1. **Screen protection MUST be installed in between mid-rail and toe board when constructed above other work platforms where employees will be working simultaneously.**

5.5.1.8. They will be attached to the structure at a minimum of every 30 feet of rise.

5.5.1.9. The employee should be protected from overheard objects falling on them.

5.5.1.10. Designed so that makeshift devices, boxes, barrels, drums, etc., are not needed to achieve proper weight.

5.5.1.11. A competent person inspects them at least at the beginning of each shift. The competent person shall also affix a tag, certifying the date and time of inspection along with PPE if necessary.

5.5.2. All scaffold will meet these minimum capacity criteria:

5.5.2.1. They should be able to withstand 4 times their rated load.

5.5.2.2. The wood-framing members should be minimally rated at 1500-PSI fiber stress value.

5.5.2.3. OSHA approved planking will be used.

5.5.2.4. Two planks (width) minimum per platform.

5.5.2.5. Planking must extend over the support 6 inches minimum, 12 inches maximum.

5.5.2.6. Planking must be fastened to support to prevent sliding. This can be done with a cleat or with tie wire.

5.5.2.7. Planks must be lapped over each other a minimum of 6 inches.

5.5.2.8. The front of the platform shall be a maximum of 14 inches from the face of the work.

5.6. Access

5.6.1. Access to the platform shall be accomplished by one of the following means:

5.6.1.1. Ladder

5.6.1.2. Scaffold Ladder

5.6.1.3. Stair

5.6.1.4. Ramp

5.7. General Conditions

5.7.1. Clutter shall be removed from all scaffold:

5.7.1.1. Unnecessary tools

5.7.1.2. Materials not in immediate use

5.7.1.3. Debris

5.7.2. Weather:

5.7.2.1. During high winds, employees should not work from a scaffold.

5.7.2.2. Snow and ice can make platforms unsafe. Do not enter a platform until conditions is clear.

5.7.3. Any slip hazard such as oil, grease, etc. will be removed before work is performed from that platform.

5.7.4. Electrical Hazard:

5.7.4.1. Any energized lines must be a minimum distance away from the scaffold as per below:

Less than 300 volts	At least 3 feet of separation
300 volts to 50 Volts	At least 10 feet of separation
Over 50 K volts	At least 10 feet plus 4 feet for every volt over 50 K volts

5.7.5. Guardrails shall be installed on any open side of platform.

5.7.6. If other means of fall protection is needed a body harness and lanyards, which will limit a fall to a maximum of 6 feet, will be the common, accepted type.

5.8. Rope Scaffold

5.8.1. There will not be any hot work performed from a rope scaffold.

5.8.2. Rope suspended scaffold will support 6 times their rated load.

5.8.3. Suspended Scaffold – Welding

5.8.3.1. Insulate the thimbles that the suspended wire rope is attached to.

5.8.3.2. Wire rope suspension must be covered with insulation at a minimum of 6 feet from the platform.

5.8.3.3. A grounding conductor must be attached from the scaffold to the structure that work is being performed on.

5.8.3.4. When on suspended scaffolding appropriate fall protection will be used.

5.9. Tagging

5.9.1. The green-tagged scaffold is safe for use without any other fall protection.

5.9.2. The yellow tagged scaffold is safe to use and shall follow the guidelines on the written on the tag.

5.9.3. The red-tagged scaffold is unsafe.

5.9.4. The competent person shall apply the tag after inspection. Only competent person can change the tags color.

SECTION 6 – Trenching, Excavation, and Shoring - Revised 05-17-2016

6.1. Purpose

6.1.1. The purpose of this procedure is to set forth uniform practice for which excavations, trenches and shoring will be done.

6.2. Scope

6.2.1. To define the requirements and procedures for excavation, trenching and shoring.

6.2.2. This policy is developed pursuant to MIOSHA Rules Part 9 and OSHA Rules 1926.650 - 1926.652.

6.2.3. This policy applies to all persons, including visitors and subcontractors working for Monarch Welding & Engineering, Inc.

6.3. Responsibilities

6.3.1. Supervisors and Foremen

6.3.1.1. Review the procedure and make recommendations.

6.3.1.2. Insure that workers are trained and understand procedures prior to performing work.

6.3.1.3. Ensure compliance with and enforcement of this policy.

6.3.2. Safety and Health Director

6.3.2.1. Review the safety procedure to maintain regulatory compliance.

6.3.2.2. Review the procedure and make recommendations.

6.3.2.3. Co-ordinate training for employees for competent person classification.

6.3.2.4. Annually maintain and update the original policy.

6.3.3. Competent Person

6.3.3.1. Inspect excavation site prior to the start of work each day and as needed during work.

6.3.3.2. Identify existing or predictable hazards in the excavation area.

6.3.3.3. Identify working conditions, which are hazardous to the employees.

6.3.3.4. Perform tests to verify soil prior to sloping and/or shoring operations.

6.3.3.5. Take prompt and corrective measures to eliminate hazardous conditions

6.3.4. Workers

6.3.4.1. Practice safe working procedures.

6.3.4.2. Not occupying excavation site until a competent person has deemed the site safe to enter.

6.3.4.3. Be familiar with this policy/procedure before beginning work.

6.4. Requirements

6.4.1. Underground Installations

6.4.1.1. The estimated location of all underground installations that may be expected to be encountered shall be accounted for before any excavation begins. This should include checking with the local utility companies when applicable.

6.4.2. Excavations Less Than Five (5) Feet Deep

6.4.2.1. Shoring or sloping the sides of an excavation that is less than five (5) feet deep is not required, unless some unusual ground conditions exist such as granular soil.

6.4.3. Excavations Greater Than Five (5) Feet Deep

6.4.3.1. Excavations greater than five (5) feet deep will require shoring or sloping in accordance with MIOSHA Rules Part 9.

6.4.4. Excavated Material

6.4.4.1. Excavated material shall not be stored less than two (2) feet, from the side of the excavation. If owner's policy is more stringent, use site specific policy. In lieu of this, effective barriers or other restraining devices may be used to prevent excavated material from falling into the excavation.

6.4.5. Surface Encumbrances

6.4.5.1. Must be supported or removed from the site if they create a hazard.

6.4.6. Access and Egress

6.4.6.1. All excavations four (4) feet or more in depth and occupied by an employee shall be provided with a ladder extending not less than three (3) feet above the top as a means of access or with a structural ramp with cleats. Lateral travel along the wall of a trench to ladder or other means of egress shall not exceed twenty-five (25) feet. All excavations 4' and deeper shall be a permit required-confined space. All parts of confined space procedure must be complied with. This must include air monitoring, training and permits.

6.4.7. Walkways

6.4.7.1. A walkway or sidewalk adjacent to an excavation shall be separated from the excavation and be protected by a guardrail. Where personnel or equipment is required and permitted to cross a trench, a walkway or bridge shall be provided with a designed capacity of not less than three (3) times its imposed load.

6.4.7.2. For exposure to public traffic, the employees shall be provided reflective vest, etc.

6.4.8. Exposure

6.4.8.1. No personnel shall be underneath loads handled by lifting or digging equipment, nor exposed to spillage or falling material from vehicles loading or unloading.

6.4.9. Barricades

6.4.9.1. Excavations are to be barricaded at all times, except on the side where work is taking place. Barricades must be at least 36 inches high.

6.4.10. Inspections

6.4.10.1. A competent person will make daily inspections of excavations prior to the beginning of work and as needed during work. The inspections will look for evidence of a situation that could cause a cave-in, hazardous atmosphere, failure of a protective system or any other hazardous situation. All work will cease until the necessary precautions have been taken to safeguards the employees.

6.4.10.2. Employees must be protected from water accumulation, including the use of shields, and must be inspected by a competent person before work begins.

6.4.11. Permits

6.4.11.1. Follow site specific and contact safety department.

SECTION 7 – Electrical Safety & Ground Fault Protection - Revised 05-17-2016

7.1. Purpose

7.1.1. This policy establishes the minimum requirements for all Monarch Welding & Engineering Inc. employees for electrical safety. This policy shall cover both the hazards arising from the use of electricity and the accidental contact with energized lines above or below the ground.

7.2. Scope

7.2.1. This policy applies to all persons including visitors, subcontractors and all employees of Monarch Welding & Engineering Inc.

7.3. Requirements

7.3.1. It is the intent of this policy to designate job foreman as the competent person to implement this program. No Monarch Welding & Engineering employee may connect or disconnect any equipment with a design voltage of 150 vac or 25 amp, single-phase. All cord and droplights shall be equipped with a ground fault circuit interrupter at first connection from electrical source. Extension cords and light cords with plug in light shall have a 20A rating at a minimum. Light cord with no female plug may have a 15-amp rating. Employees shall not be exposed to unprotected live electrical wiring. All unprotected live wiring shall be disconnected or protective steps taken to ensure employees are not exposed.

7.4. General Electrical Safety

7.4.1. Qualified Person:

7.4.1.1. A person who by documented training and experience is knowledgeable of the operation to be performed and the hazards involved. The qualified person will also have the authority and knowledge to take prompt corrective action to eliminate the hazards. The Safety Director at the main office will maintain a list of qualified persons.

7.4.2. Unqualified Person:

7.4.2.1. A person with little or no training to recognize electrical hazard associated with the operation of equipment or the task assigned. No unqualified person may be exposed to the risk of shock until they have been trained in safe clearances and found proficient in basic electrical related safe work practices.

7.4.2.2. Only qualified persons will be allowed to work on electrical equipment that can not be de-energized and then only when protected from contact with an electrical hazard.

7.4.2.3. Qualified persons must have training in the selection, use, testing, and limitations of personal protective equipment such as flash hoods, capes, gauntlet gloves, and hot sticks, and testing equipment and shielding material.

7.4.2.4. Both unqualified and qualified workers must be trained in and proficient in the use and purpose of the lockout tag out system. This training will require at least once a year refreshers.

7.4.2.5. Both unqualified and qualified workers will be trained in confined space related electrical hazards before being assigned a task involving confined spaces. A minimum of 10 foot candle lighting is required. The use of lockout/tag out and/or protective barriers is mandatory when needed.

7.4.2.6. All 120-volt single phase 15 and 20-ampere receptacle outlets will have approved ground fault circuit interrupters (GFCI) when not part of the buildings permanent wiring. This includes double insulated tools.

7.4.2.7. Only wood or fiberglass ladders will be used when there is a possibility of contact with an electrical hazard. Portable ladders shall have non-conductive side rails.

7.4.2.8. Conductive items of jewelry or clothing shall not be worn unless they are rendered non-conductive by covering, wrapping or other insulating means.

7.4.2.9. Goggles or safety glasses shall be worn over metal frames of prescription eyeglasses.

7.4.2.10. No equipment or materials such as vehicles, scaffolds, aerial lifts, hi-lows, metal pipes, or other conductive material will be used, or stored within 10 feet of exposed electrical equipment.

7.4.2.11. A minimum of 10 feet clearance shall be maintained under and or next to exposed overhead electrical lines of 50 volts or greater.

7.4.2.12. The minimum lighting in any work area is 10-foot candles. For purposes of this procedure you must be able to see electrical hazards at no less than 6 feet 3 inches away.

7.4.2.13. No work by unqualified workers may take place within 10 feet of movable conductors over 50 volts or 6 feet within fixed conductors over 50 volts.

7.4.2.14. All electrical equipment and switch boxes must be guarded to prevent accidental employee contact with energized circuits.

7.4.2.15. Open electrical equipment where work is being performed must be marked and the area barricaded.

7.4.2.16. All extension cords and welding leads are to be off the floor or ground a minimum of 7 feet or routed out of the normal path of travel.

7.4.2.17. Cords and electrical wiring must not be fastened by staples, hung from nails, or suspended from wires.

7.4.2.18. Electrical cords must not be allowed to lie in standing water.

7.4.2.19. All extension cords must be of the three wire type.

7.4.2.20. All electrical cords and wires must be protected from damage by vehicle traffic, sharp corners, or projections and pinching in door ways

7.4.2.21. Worn, frayed or damaged cables and cords must not be used and shall be removed form the work area.

7.4.2.22. All splices of temporary wiring or lights must have insulation equal to that of the original cable or wire and be approved by a qualified employee.

7.4.2.23. When assigned to work in any area where exposure to electrical hazards cannot otherwise be eliminated or controlled, protective shields, protective barriers or insulating materials as necessary shall be provided.

7.4.2.24. Approach Distance for Qualified Employees AC Current

300 Volts or less	Avoid Contact
More then 300 but less then 750V	1’ 0”
More then 750V but less then 2KV	1’ 6”
More then 2 KV but less then 15 KV	2’ 0”
More then 15 KV but less then 37 KV	3’ 0”
More then 37 KV but less then 87.5 KV	3’ 6”
More then 87.5 KV but less then 121 KV	4’ 0”
More then 121 KV but less then	4’ 6”

7.5. Ground Fault Protection

7.5.1. Purpose

7.5.1.1. It is assumed that all employees shall be exposed to electrocution in the course of their employment. It is essential that all employees understand both the scope and implementation of this procedure. The main purpose of this program is to prevent accidental electrocution or fire due to conductors in portable cords, tools and lamps not having proper integrity.

7.5.2. Scope

7.5.2.1. All non-permanent electrical systems used by Monarch Welding & Engineering employees. This policy is accordance with OSHA 29CFR 1926.404-construction safety standard.

7.5.3. General

7.5.3.1. Training

7.5.3.1.1. All employees will be instructed to use ground fault circuit interrupters (GFCI) whenever electrical equipment is being used. All employees shall be trained to inspect all electrical equipment prior to use.

7.5.3.2. Power Packs

7.5.3.2.1. All power packs used by Monarch Welding & Engineering shall be equipped with GFCI circuit breakers and/or GFCI outlets. All power packs and GFCI breakers shall be inspected daily and every 30 days by a competent person.

7.5.3.3. Portable Equipment

7.5.3.3.1. Portable cords, tools, lamps, etc. that are not plugged into a power pack must be equipped with a portable GFCI.

7.5.3.4. Testing

7.5.3.4.1. Testing of all GFCI's will follow manufacturers recommended schedule and method or 30 days.

7.5.3.4.2. All cords will be thoroughly inspected and tested at the main office when they are returned or monthly.

7.5.3.5. Damaged Equipment

7.5.3.5.1. Any piece of equipment, which is damaged, shall be taken care of out of service immediately and sent in for repair. These units must be segregated and properly tagged in the trailer or service truck and returned to the shop, to prevent use before they are repaired.

SECTION 8 – Lock Out / Tag Out Policy - Revised 05-17-2016

8.1. Purpose

8.1.1. This policy ensures the safety of all employees working on equipment or systems where there is a possibility of energy sources activating and causing harm. It establishes procedures for the lockout and tagging of all types of fluid lines, electrical, suspended mechanisms, all moving parts, and all lines that may cause engulfment. This pertains to both temporary and permanent equipment used during installation or maintenance. These processes ensure that ALL ENERGY SOURCES in a machine, piece of equipment, or process are recognized, neutralized, and/or isolated before any work begins.

8.2. Scope

8.2.1. These procedures apply to all persons, including contractors and visitors, working for Monarch Welding & Engineering, Inc.

8.3. Responsibilities

8.3.1. It is the responsibility of the site supervisor or foreman to review the involved areas, processes, equipment and to insure that danger tags are completed, signed, and are attached along with a padlock to the items being locked out. He / She is accountable for all locks and danger tags used by their personnel, which are strictly controlled and not used for any other purpose than for those named in this procedure. If site specific procedures are in place, prior to use safety department approval is required.

8.4. Perquisites

8.4.1. The site supervisor or foreman will inspect the involved areas, equipment, circuits, and processes before any work begins. The following must be reviewed to ascertain what procedures are necessary.

8.4.1.1. ALL electrical power involved is to be inspected.

8.4.1.2. ALL moving parts are to be examined

8.4.1.3. ALL hydraulic, pneumatic, or other fluid lines to be used in the operation are to be checked.

8.4.1.4. ALL mechanisms that are under spring tension or compression must be looked at.

8.4.1.5. ALL pipes and/or duct that may contain products that may cause engulfment or may be toxic must be evaluated.

8.4.1.6. ALL suspended mechanisms or parts that normally cycle through a lower position and could possibly drop are to be inspected.

8.4.2. Only tamper-proof to be used. NO two locks should be of the same pattern. The patterns of the keys are to be checked to verify that each key fits only one lock.

8.4.3. The site supervisor is to maintain a master list of key numbers and have the "extra" key to each of the locks. The Lock-Out Key Log is to include such details as the locks left in place on "off" shifts. Master keys will not be issued.

8.4.4. All locks and tags not in use shall be returned to the site supervisor.

8.4.5. ALL employees will be instructed as to the lock-out/tag-out procedures at the time of orientation.

8.5. Procedures

8.5.1. All persons involved are to be notified of when equipment is being energized and therefore, this procedure is being put into place and what it will affect.

8.5.2. Site supervisor will issue a padlock, a lockout device, and a danger tag to designated authorized personnel. Each time that this is done, an entry will be made in the Lock-Out Key Log by the site supervisor.

8.5.3. Electrical power is to be turned off and a lockout device will be placed through the holes in the handle or through the tabs provided for the purpose of safety lockout. Mechanical equipment and valves must be dissipated/blanked, secured and locked to ensure a safe condition.

8.5.4. An individual padlock is to be placed on the lockout device by each craft that is working on the system, circuit, etc.

8.5.5. A "DANGER - DO NOT OPERATE" tag is to be completed by the foreman and the employee locking out the circuit, system, etc. and is to be attached to the lock or switch. The tag is to be signed by both the foreman and the employee.

8.5.6. Other crews or crafts, who are working on the circuit or who are working on equipment powered by the circuit turned off, must attach their own individual locks and "DANGER" tags before performing any tasks.

8.5.7. "DANGER - DO NOT OPERATE" tags are to be placed on the process/equipment controls.

8.5.8. The foreman are to have all pneumatic, hydraulic, or other fluid and gas lines, affecting the area to be worked in, drained, purged, and/or bled to eliminate

pressure/contents. Then the valves controlling these lines are to be locked open or closed, depending upon their function or position in the line.

8.5.9. Mechanisms under spring tension or compression are to be blocked, clamped, or chained in a fixed position.

8.5.10. Before working on the circuit, it is to be checked with an approved tester or voltmeter to make certain that the correct switch is locked out.

8.5.11. The padlocks and tags are only to be removed by the person(s) who signed and placed the tag, except in the event of a lost key.

8.5.12. **ANY UNAUTHORIZED DEFACING, TAMPERING, OR REMOVAL OF PADLOCKS OR TAGS WILL BE CAUSE FOR IMMEDIATE DISMISSAL.**

8.5.13. Any "DANGER" tag placed on a circuit breaker, disconnect, or valve, with **or** without a locking device, is to be given the same priority as a locking device.

8.6. Lost Keys

8.6.1. The responsible party is to contact their site supervisor with the lock number.

8.6.2. The site supervisor or his designee **must** go to the lockout location with the signature foreman to inspect the locked out equipment for safety clearance.

8.6.3. After designated authorized personnel have determined that the locked out equipment is safe, the site supervisor will then remove the lock and dispose of it. The site supervisor **must** make sure that the lock that has been removed will not be used again for safety purposes.

8.6.4. This course of action is to be noted in the Lock-Out Key Log as "This lock has been removed from service using the proper procedures." A new lock is to be obtained to replace the one disposed of.

8.7. Procedure for removal of lock when employee not present

8.7.1. This process should be only taken when it is a last resort. If at any time an employee is not on job-site and a lock needs to be removed, this procedure shall be used. If there is a site specific procedure, follow owner's policy and this policy prior to removing any lock. Make every attempt to contact employee, check to see if they are on site. If contact is made, employee shall come in and remove lock. If possible, leave message for employee to contact foreman as soon as possible or that his/her lock has been removed. If contact cannot be made, notify: Safety Department, General Foreman, Superintendent and Owner Representative.

8.7.1.1. Fill out attached Emergency Lock Removal form completely.

8.7.1.2. After completing all of the above, lock may be forcibly removed.

8.7.1.3. When the employee returns to work, he/she shall be escorted into the trailer for an incident investigation. Employee may also be issued a violation notice.

8.7.1.4. Employee shall be retrained on lock out tag out. Failure to comply after retraining may result in disciplinary actions.

8.7.1.5. After an employee has been retrained, a new lock shall be issued.

8.7.2. **"DANGER - DO NOT OPERATE" Tag Clearance**

8.7.2.1. When the signature person, whose name appears on the tag, is absent from the job site, the foreman may remove the tag once it has been established that all employees are cleared from the affected area and a safe condition has been secured.

8.7.2.2. Once work is finished, the foreman is to check the affected area to ensure that no one is exposed to any hazards. The foreman may then remove the lock and the "DANGER - DO NOT OPERATE" tag and return them to the site supervisor.

8.7.3. **New Equipment Start-Up Testing**

8.7.3.1. As new equipment is energized before it is tested, it must be locked-out and tagged to prevent premature operation of the equipment.

8.7.3.2. When testing new equipment, the site supervisor must consider all of the employees' safety in the test area. Prior to testing and start-up operations, the site supervisor or the responsible foreman is to inspect the entire test are to make certain that all employees are clear of any potential hazards. The site supervisor must use barricades, signs, or other appropriate means to prevent employees not involved in the testing from entering the testing area.

8.7.3.3. After the testing is completed, the site supervisor or responsible foreman is to lock-out and tag the equipment until it is turned over to the owner or further maintenance is performed on it.

8.7.4. **Terms & Definitions**

8.7.4.1. Designated authorized personnel

8.7.4.1.1. A person, who through education and/or experience, understands the processes involved and is given control by the employer to take prompt corrective measures to eliminate any existing or predictable hazards.

8.7.4.2. Disconnect

8.7.4.2.1. A device interrupts the flow of electricity, fluid, gas, etc. in a positive manner.

8.7.4.3. Locking device

8.7.4.3.1. A means of preventing the accidental start-up of electricity, fluid, gas, etc. This may be a chain padlock, wire rope, or any other positive method of keeping the equipment, system, or process from inadvertently starting.

8.7.4.4. Process

8.7.4.4.1. Any system that will produce a controlled effect. This can include a single device or a series of devices to produce a desired outcome. i.e.: production line, boiler, generator, furnace, etc.

8.7.5. **Training Requirements**

8.7.5.1. All training and retraining shall meet the requirements of 1910.147 (7).

8.7.5.2. Periodic inspections shall be conducted & documented at least annually to ensure procedures & requirements are being followed. This will be conducted by the safety department which will include date, equipment, and employees involved.

8.7.5.3. This training shall be required for all authorized and affected employees.

8.7.5.4. This training must include the following:

8.7.5.4.1. Recognition of hazardous energy sources, types, and magnitude.
8.7.5.4.2. Proper methods to properly isolate and control energy sources.
8.7.5.4.3. Purpose and use of energy control procedures.
8.7.5.4.4. All employees must understand lockout/tag out procedure and the reason to not attempt to energize or restart equipment that is locked out or tagged out.

8.7.5.5. Tag out training shall include:

8.7.5.5.1. Tags are a warning device and do not provide the restraint provided by a lock.

8.7.5.5.2. Tags must never be removed without approval of authorized person responsible for them.

8.7.5.5.3. Tags must be legible and understandable by all personnel whose work operations require them to be in area.

8.7.5.5.4. Tags and their attachments shall be constructed to withstand the workplace environment and not be inadvertently or accidentally detached during use.

8.7.5.5.5. Tags shall have date, employee name.

8.7.5.5.6. Shall consist of the dangers associated with the dangers associated with equipment not capable of being locked out.

8.7.5.6. Employee retraining must be undertaken for any of the following reasons:

8.7.5.6.1. A change in procedure

8.7.5.6.2. A change in equipment, machine, or process

8.7.5.6.3. When there is or may be reason to believe that there are deviations from or inadequacies in the employee's use or knowledge of energy contract procedures.

8.7.5.7. All training and retraining shall be certified and kept up to date.

SECTION 9 – Fire Protection - Revised 05-17-2016

9.1. Purpose

9.1.1. To reduce the possibility of fire on a construction/maintenance project

9.2. Scope

9.2.1. All Monarch Welding & Engineering, Inc. employees, subcontractors and escorted visitors. These procedures are in accordance with MIOSHA Part 18 Construction Safety Standards and OSHA 29CFR 1926.150 - 155 Construction Safety Standards.

9.3. General

9.3.1. In all fire prevention methods, the most important factor is to control the source. History indicates the principle sources of fires are welding and burning operations, outside salamanders, stoves for heating shanties and trailers and smoking.

9.3.2. When left unattended, open flame heaters shall be extinguished; if gas heated gas shall be turned off.

9.3.3. Smoking will only be allowed in designated areas and in compliance with any federal, state, local and owners requirements

9.3.4. Emergency phone numbers shall be clearly posted.

9.4. Responsibilities

9.4.1. It is the responsibility of the foremen and site supervisors to inspect and insure that all precautions have been taken to prevent a fire from occurring. The following are to be addressed.

9.4.1.1. Housekeeping

9.4.1.1.1. Remove combustible materials and provide easier control when emergencies arise. Check work area to eliminate any accumulation of rubbish, oily rags, combustible scrap, etc.

9.4.1.2. Storage Of Highly Flammable Materials

9.4.1.2.1. All highly flammable materials must be stored in an approved cabinet to prevent fire and control the spread of fire. These materials are, but

not exclusively, paint, thinner, oil, lubricants and greases. Signs shall be posted designating the danger and "NO SMOKING".

9.4.1.3. The superintendent/general foreman in coordination with the safety department shall develop an emergency plan.

9.4.1.4. Emergency phone numbers shall be posted.

9.4.1.5. Smoking shall not be allowed in areas where flammable/combustible is stored.

9.4.1.6. Where combustible materials are present near these operations a fire watch should be on hand to guard against fires. Fire watches shall remain at least 30 minutes after hot work has been completed unless site specific procedures dictate a longer time period.

9.5. Fire Extinguishers

9.5.1. Whenever cutting, burning, welding or any other operation that could cause a fire, an approved fire extinguisher must be present.

9.5.2. When an extinguisher is taken to any of the above operations, it should be inspected to insure it is in working order and it is approved for the type of combustibles in the area.

9.5.3. The site supervisor will check all extinguishers monthly or the driver of the vehicle on the first workday of the month will do the inspection. The site supervisor or driver shall enter information on tag on fire extinguisher. Once yearly an approved fire extinguisher company will be hired to check all extinguishers to insure that they are fully charged and working properly.

9.5.4. Fire Extinguisher Categories

9.5.4.1. Class A- for use on solid debris

9.5.4.2. Class B- for use on liquids

9.5.4.3. Class C- for use on electrical

9.5.4.4. Class D- exotic metals

9.5.4.5. ABC fire extinguishers good for everything on our job sites

9.5.4.6. CO_2 use only on electrical fires and liquids

9.5.5. Fire extinguishers shall not be blocked; a 36 inch clearance must be maintained at all times. Fire extinguishers shall be placed in a location where it is readily seen.

9.6. Training

9.6.1. All Monarch Welding & Engineering, Inc. employees will receive incipient fire training during new hire orientation as required by 1926.150 and on an annual basis thereafter.

9.6.2. Training will include fire extinguisher types and how to operate information. Evacuation routes and how to fight an incipient stage fire.

9.6.3. Training will include fire prevention methods and the fire triangle.

9.6.4. Employees shall be trained on the emergency plan and site specific alarms.

SECTION 10 – Driver Safety Policy - Revised 05-17-2016

10.1. Scope

10.1.1. This policy applies to all regular full-time and part-time employees, temporary help and anyone assigned to drive for the company.

10.2. Purpose

10.2.1. Monarch Welding & Engineering, Inc. requires all employees who operate motor vehicles on company business do so in a safe and reliable manner. When driving in a Monarch Welding & Engineering, Inc. company vehicle or a personal vehicle used for company business, all employees are required to be in compliance with State laws governing the use and operation in the State of Michigan and/or other states and territories you may drive a vehicle while on Monarch Welding & Engineering Inc. business.

10.2.2. Only authorized employees will drive a motor vehicle in the course and scope of work or operate a company- owned vehicle.

10.3. Responsibilities

10.3.1. Monarch Welding & Engineering, Inc will not tolerate unsafe driving. All employees driving on Monarch Welding & Engineering, Inc. business in a company vehicle or a personal vehicle:

10.3.1.1. Must wear a properly adjusted and fastened safety belt at all times.

10.3.1.2. Must possess a valid Michigan Driver's License.

10.3.1.3. Must maintain valid liability and property insurance on a privately owned vehicle with limits of (a) $20,000/$40,000 bodily injury and $10,000 property damage or (b) the minimum required by the State of Michigan, whichever is greater.

10.3.1.4. Shall consent to periodic motor vehicle record (MVR) checks with the Michigan Secretary of State or other applicable agency.

10.3.1.5. Shall obey all traffic rules, drive courteously and practice defensive driving techniques.

10.3.1.6. Shall not permit persons other than on-the-job employees and authorized passengers (i.e. vendor, customer, employee, etc.) to ride in a Monarch Welding Engineering, Inc. vehicle or a personal vehicle while on company business.

10.3.1.7. Loads shall be secure and shall not exceed the manufacturer's specifications and legal limits for the vehicle.

10.3.1.8. The vehicle shall be used for what its designed and purpose.

10.3.1.9. The vehicles shall be maintained in safe working order.

10.3.1.10. Shall use hands-free cell phone use, or cell phone use prohibited while driving, not manipulating radios or other equipment which may cause distraction, not exceeding the posted speed limit and maintaining a safe distance between other vehicles.

10.3.1.11. Shall immediately report within 24 hours:

10.3.1.11.1. Any incident involving the use of a company or personal vehicle while on Monarch Welding & Engineering, Inc. business, whether or not it results in any injury to any person or damage to any vehicle or property, and regardless of who is at fault. All supporting documentations shall be forward to Warren office within 24 hours.

10.3.1.11.2. Any change in driver's license status, including suspension, revocation or restriction; and

10.3.1.11.3. Any lapse, change or termination of automobile insurance coverage.

10.3.1.12. Shall not carry on their person or allow any passenger to carry a firearm or other weapon in a vehicle, personal or company owned, being used for Monarch Welding & Engineering, Inc. business.

10.3.1.13. Shall not drive after consuming drug and/or alcohol, including legal drugs, which may impair the ability to operate a motor vehicle.

10.3.1.14. When on a project site, maintain a 20-foot clearance around fire hydrants unless site specific policy is greater.

10.4. Use of Drugs or Alcohol

10.4.1. Employees, while operating a company owned or leased vehicle(s) (including short term rentals), shall be subject to disciplinary action, up to and including termination of employment, for a conviction while under the influence of alcohol or drugs.

10.4.2. Employees who operate their own personal vehicles shall be subject to disciplinary action, up to and including termination of employment, for a conviction of driving while under the influence of alcohol or drugs when the employees are operating the vehicles on company business. (For purposes of this and the above paragraph, "operating on company business" shall mean that the

employees would be entitled to reimbursement or other compensation by Monarch Welding & Engineering, Inc. for that specific trip).

10.5. Motor Vehicle Records

10.5.1. Each manager or site supervisor will determine which employees may operate Monarch Welding & Engineering, Inc. vehicles or use their personal vehicle to conduct company business. A list of those employees will be turned in to the main office. Each employee designated as a potential driver of a Monarch Welding & Engineering, Inc. vehicle or their personal vehicle during company business shall provide the main office with current copies of their driver's license and proof of insurance. The employee will then be asked to complete an authorization form allowing Monarch Welding & Engineering, Inc. to obtain a copy of the employee's motor vehicle record (MVR) from the Michigan Secretary of State, or other applicable State Agency.

10.5.2. The request to obtain an employee's motor vehicle record (MVR) will be made a minimum of once every 12 months. Employees with a motor vehicle record (MVR) indicating a currently suspended or revoked driver's license shall not be allowed to drive a Monarch Welding & Engineering, Inc. vehicle or a personal vehicle during company business. Employee's whose motor vehicle record (MVR) indicates criminal or traffic offences not declared to Monarch Welding & Engineering, Inc. commencing with the effective date of this policy may be subject to discipline up to and including termination. Offences that employees must declare include, but are not limited to, operating under the influence of alcohol and/or drugs, impaired driving, careless or reckless driving, leaving the scene of an accident and vehicular manslaughter.

10.5.3. Monarch Welding & Engineering, Inc. will require designated employees to attend a defensive driving course, or similar driver awareness course should their motor vehicle record (MVR) indicate a pattern of repeat offences.

SECTION 11- Forklifts - Revised 05-17-2016

11.1. Scope

11.1.1. This policy applies to all employees who operate a Powered Industrial Truck (PIT) also referred to as a Hi-Lo, Forklift, or Zoom Boom.

11.2. Purpose

11.2.1. Monarch Welding & Engineering, Inc. is required to certify all authorized employees regarding competency on all types of equipment. All employees who operate equipment on company business do so in a safe, reliable manner and comply with MIOSHA Part 21.

11.3. Responsibilities

11.3.1. Monarch Welding & Engineering, Inc will not tolerate unsafe driving at any time. Employees who operate equipment must follow all traffic laws, site specific and company requirements. This includes the use of seatbelts notifying management of concerns, mechanical issues and also for completing a forklift safety inspection form.

11.4. Use of Drugs or Alcohol

11.4.1. Employees, while operating a company owned or leased vehicle(s) (including short term rentals), shall be subject to disciplinary action, up to and including termination of employment, for operating while under the influence of alcohol or drugs.

11.5. General

11.5.1. Before an employee may operate a forklift, they must complete the training requirements set forth by Monarch Welding and Engineering as well as possess a valid forklift operators permit issued by Monarch Welding and Engineering. Permits are valid for three (3) years.

11.5.2. Operators must have correctable vision which meets the requirements for a valid Michigan Driver's License. If operator does not have a valid Driver's License; proof must be supplied from a Doctor that the operator meets the vision requirements.

11.5.3. Equipment may not be modified without written consent from manufacturer. Individuals shall not act as counter-balance on machine.

11.5.4. Daily, before using a forklift, the operator must complete a forklift safety inspection form (Found in forms section) to ensure vehicle is mechanically sound and there are no deficiencies. If any serious deficiencies: remove from service and notify supervisor. Forklift shall not be used until repairs can be completed.

11.5.5. Forklifts shall not be used as personnel elevating platforms.

11.5.6. Unless specifically designed and equipped, passengers are not permitted to ride on forklift.

11.5.7. Seatbelts must be properly worn, if equipped, and may not be modified.

11.5.8. The driver shall be required to slow down and sound the horn at cross aisles and other locations where vision is obstructed. If the load being carried obstructs forward view, the driver shall be required to travel with the load trailing.

11.5.9. Forklifts shall not be driven up to anyone standing in front of a bench or other fixed object.

11.5.10. No person shall be allowed to stand or pass under the elevated portion of any forklift, whether loaded or empty.

11.5.11. Operators shall prohibit arms or legs from being placed between the uprights of the mast or outside the running lines of the forklift.

11.5.12. When a forklift is left unattended, load engaging means shall be fully lowered, controls shall be neutralized, power shall be shut off, and brakes set. Forks shall also be flat on the ground. Wheels shall be blocked if the truck is parked on an incline. A forklift is considered unattended when the operator is 25 ft. or more away from the vehicle which remains in his view or whenever the operator leaves the vehicle and it is not in his view.

11.5.13. Only loads within the rated capacity of the forklift shall be handled.

11.5.14. When operating on inclines 10% or more, the driver shall be required to travel with the load trailing.

11.5.15. All traffic regulations shall be observed, including authorized plant speed limits. A safe distance shall be maintained approximately three truck lengths from the forklift or any other motorized vehicle ahead, and the forklift shall be kept under control at all times.

11.5.16. Railroad tracks shall be crossed diagonally wherever possible. Parking closer than 8 feet from the center of railroad tracks is prohibited.

11.5.17. The appropriate forklift selection shall be selected by the environment (hazards) and work/loads for the job.

11.5.18. If boarding a semi, dock plates must be securely in place and trailer shall have at least two wheels blocked.

11.5.19. All accidents/near misses must be reported to a supervisor.

11.6. Training

11.6.1. All trainers must have forklift training and have train the trainer training with documentation. They will have the ability to evaluate operators.

11.6.2. Formal Instruction includes lecture, discussion, video, and written materials. Practical training involves instructor demonstrations and trainee exercises. Operator will be evaluated at this time.

11.6.3. Training shall cover:

11.6.3.1. Operating instructions, warnings, and precautions.

11.6.3.2. Differences between the truck and the automobile

11.6.3.3. Truck controls and instrumentation: where they are located, what they do, and how they work.

11.6.3.4. Steering and maneuvering.

11.6.3.5. Visibility (including restrictions due to loading).

11.6.3.6. Fork and attachment adaptation, operation, and use limitations.

11.6.3.7. Vehicle capacity.

11.6.3.8. Vehicle stability.

11.6.3.9. Any vehicle inspection and maintenance that the operator will be required to perform.

11.6.3.10. Refueling and/or charging and recharging of batteries.

11.6.3.11. Operating limitations.

11.6.3.12. Surface conditions where the vehicle will be operated.

11.6.3.13. Composition of loads to be carried and load stability.

11.6.3.14. Load manipulation, stacking, and un-stacking.

11.6.3.15. Pedestrian traffic in areas where the vehicle will be operated.

11.6.3.16. Hazardous (classified) locations where the vehicle will be operated.

11.6.3.17. Ramps and other sloped surfaces that could affect the vehicle's stability.

11.6.3.18. Daily Inspections to make sure vehicle is safe prior to operating.

11.6.3.19. Require the operators to verify trailer chocks, supports, and dock plates prior to loading/unloading.

11.6.4. After employees pass both the written and practical test, a license will be issued which will be valid for a period of three years. This certification includes operator's name, training date, and trainer/evaluator name.

11.6.5. Refresher training shall be performed when:

11.6.5.1. License has expired (every 3 years).

11.6.5.2. Different vehicle type.

11.6.5.3. The operator has been observed to operate the vehicle in an unsafe manner.

11.6.5.4. The operator has been involved in an accident or near-miss incident.

11.6.5.5. The operator has received an evaluation that reveals that the operator is not operating the forklift safely.

11.7. Discipline

11.7.1. Failure to comply with the rules and specifications of this program can result in disciplinary procedures which could include:

11.7.1.1. Refresher Training.

11.7.1.2. Revoked Operators Permit.

11.7.1.3. Termination.

SECTION 12 –Aerial Lifts - Revised 05-17-2016

12.1. Scope

12.1.1. This policy applies to all employees who operate a man lift.

12.2. Purpose

12.2.1. Monarch Welding & Engineering, Inc. requires all employees who operate equipment on company business do so in a safe and reliable manner. This program is designed to provide employees with a safe working environment in relationship to man lift and comply with MIOSHA Part 32.

12.3. Responsibilities

12.3.1. Monarch Welding & Engineering, Inc will not tolerate unsafe operation at any time. Employees who operate equipment must follow all traffic laws, site specific and company requirements.

12.4. Use of Drugs or Alcohol

12.4.1. Employees, while operating a company owned or leased vehicle(s) (including short term rentals), shall be subject to disciplinary action, up to and including termination of employment, for operating while under the influence of alcohol or drugs.

12.5. General

12.5.1. Before an employee may operate a man lift, they must complete the training requirements set forth by Monarch Welding and Engineering as well as possess a valid man lift operators permit issued by Monarch Welding and Engineering. Permits are valid for three (3) years. Only trained persons shall operate an aerial lift.

12.5.2. Operators must have correctable vision which meets the requirements for a valid Michigan Driver's License. If operator does not have a valid Driver's License; proof must be supplied from a Doctor that the operator meets the vision requirements.

12.5.3. Equipment may not be modified without written consent from manufacturer.

12.5.4. Daily, before using a man lift, the operator must complete a man lift safety inspection form (see form section) to ensure vehicle is mechanically sound and there are no deficiencies. If there are any significant deficiencies, remove machine

from operation and notify supervisor. Equipment shall not be used until repairs can be made.

12.5.5. Man lifts may not be moved when the boom is elevated in a working position with men in the basket, except for equipment which is specifically designed.

12.5.6. Any man lift found not to be in a safe operating condition shall be removed from service until repaired. All repairs shall be made by an authorized person in accordance with the manufacturers or owner's operating or maintenance and repair manual or manuals.

12.5.7. All danger, caution, and control markings and operational plates shall be legible and not obscured.

12.5.8. Only personnel, their tools, and necessary materials shall be on or in the platform. This shall not cause over capacity to man lift.

12.5.9. Employees shall always stand firmly on the floor of the basket, and shall not sit or climb on the edge of the basket or use planks, ladders, or other devices for a work position.

12.5.10. A body harness shall be worn and a lanyard attached to the basket or approved anchor point when working from a man lift. An anchor point must support 5,000 pounds for each employee. Attaching lanyard to an adjacent pole, structure, or equipment while working from a man lift shall not be permitted.

12.5.11. Boom and basket load limits specified by the manufacturer shall not be exceeded.

12.5.12. The brakes shall be set and outriggers, when used, shall be positioned on pads or a solid surface. Wheel chocks shall be installed before using a man lift on an incline. Platforms shall be elevated only when on a firm and level surface or within the slope limits allowed by the manufacturer's instructions.

12.5.13. Employees shall not exit an elevated platform, except where elevated work areas are inaccessible or hazardous to reach. Employees may only exit the platform with the knowledge and consent of the safety department. When employees exit to unguarded work areas, fall protection shall be provided.

12.5.14. Platform gates shall be closed while the platform is in an elevated position.

12.5.15. The aerial work platform shall not be positioned against another object to steady the platform.

12.5.16. The aerial work platform will have a working back up alarm audible above the surrounding noise level and/or the vehicle will be backed up only when an observer (spotter) signals that it is safe to do so.

12.5.17. Limit travel speed according to the following factors:

12.5.17.1. Condition of the surface.

12.5.17.2. Congestion.

12.5.17.3. Slope.

12.5.17.4. Location of personnel.

12.5.17.5. Other hazards

12.5.18. If the platform or elevating assembly becomes caught, snagged, or otherwise prevented from normal motion by adjacent structures or other obstacles so that control reversal does not free the platform, all personnel shall be removed from the platform before attempts are made to free the platform.

12.5.19. Platform operator shall ensure that the area surrounding the aerial work platform is clear of personnel and equipment before lowering the platform.

12.5.20. VOLTAGE MINIMUM CLEARANCE

12.5.20.1. 0 to 50 kV. 10 feet

12.5.20.2. More than 50 kV. 10 feet + .4 inch per kV.

12.5.21. All accidents/near misses must be reported to a supervisor.

12.5.22. A permit shall be carried by the operator or be available at the job site and shall be displayed upon request.

12.5.23. The manufacturer's operating instructions and safety rules shall be provided and maintained in a legible manner on each unit.

12.6. Training

12.6.1. Training shall be valid for a period of three years.

12.6.2. Training shall consist of, at minimum:

12.6.2.1. Manufacturers operating instructions and safety rules.
12.6.2.2. Decals, warnings, and instructions displayed on the aerial work platform.

12.6.2.3. Checklist

12.6.2.4. Operating

12.6.2.5. Electrical

12.6.2.6. Inspections

12.7. Disciplinary

12.7.1. Failure to comply with the rules and specifications of this program can result in disciplinary procedures which could include:

12.7.1.1. Refresher Training

12.7.1.2. Revoked Operators Permit

12.7.1.3. Termination

SECTION 13 – Lifting, Mobile, & Equipment - Revised 05-17-2016

13.1. Certification

13.1.1. Monarch Welding & Engineering, Inc. does not own this type of equipment. When it is needed, it is rented from a subcontractor including a licensed operator.

13.1.2. All inspections, certifications and preventative maintenance are done by the subcontractor on at least a monthly basis. The operator will do daily inspections. Documentation for all of the above will be submitted to Monarch Welding & Engineering, Inc. before any equipment is put into service.

13.1.2.1. Written reports shall be made and maintained on rated load tests showing the test procedures and confirming the adequacy of any repairs or alterations.

13.1.2.2. Rope inspection shall be performed once a month and certify the date, signature of person performing the inspection.

13.1.2.3. All rope which has been idle for a period of a month or more due to shut down or storage of a crane on which it is installed shall be given a thorough inspection before it is used. This inspection shall be for all types of deterioration and shall be performed by an appointed or authorized person whose approval shall be required for further use of the rope.

13.1.2.4. Employer shall keep & maintain certification record(s) which include the date(s) of inspection & the signature of person(s) who performed inspection. The same records must be kept on inspections of all other ropes.

13.1.3. Only authorized employees shall be allowed to operate mobile equipment. Authorization to operate mobile equipment will be issued to employees qualifying under appropriate training and proficiency testing.

13.2. Operating Procedure

13.2.1. Follow the crane-lifting checklist, (see exhibit 1). If any items listed under A, B, C, or D meet the criteria listed then lift procedure (see exhibit B) and must be approved and signed by Monarch Welding & Engineering, Inc. engineer.

13.2.2. Unauthorized personnel shall not be permitted to ride on equipment unless it is equipped to accommodate passengers safely.

13.2.3. The operator shall make sure the warning signal is operating when the equipment is backing up.

13.2.4. No operator shall operate mobile equipment without the protection of an enclosed cab or approved eye protection.

13.2.5. Before starting the engine, the driver shall fasten seat belts and adjust them for a proper fit.

13.2.6. The operator shall not use, or attempt to use any vehicle in any manner or for any purpose other than for which it is designated.

13.2.7. The operator shall not load the vehicle/equipment beyond its established load limit and shall not move loads because of the length, width, or height that have not been centered and secured for safe transportation.

13.2.8. Whenever any sling is used specific safety practices shall be observed.

13.2.8.1. Each sling shall be inspected before being used. Each sling, fastenings, and all attachments shall be inspected by a designated competent person by the employer.

13.2.9. The operator of a gasoline or diesel vehicle shall shut off the engine before filling the fuel tank and shall ensure that the nozzle of the filling hose makes contact with the filling neck of the tank. No one shall be on the vehicle during fueling operations except as specifically required by design. There shall be no smoking or open flames in the immediate area during fueling operation.

13.3. Construction Cranes

13.3.1. Equipment must not be assembled or used unless ground conditions are firm, drained, and graded to a sufficient extent so that, in conjunction (if necessary) with the use of supporting materials, the equipment manufacturer's specifications for adequate support and degree of level of the equipment are met.

13.3.2. The manufacturer's procedures and prohibitions must be complied with when assembling and disassembling equipment.

13.3.3. The assembly/disassembly of equipment must be directed by a competent and qualified person.

13.3.4. The work zone shall be identified by demarcating boundaries such as flag and range limiting devices, or defining the work zone as 360 degrees around the equipment up to the maximum working radius. The hazard assessment must determine if any part of the equipment could get closer than 20 feet to a power line.

13.3.5. If it is determined that any part of the equipment, load line or load could get closer than 20 feet to a power line then at least one of the following measures must be taken:

13.3.5.1 Ensure the power lines have been deenergized and visibly grounded

13.3.5.2 Ensure no part of the equipment, load line or load gets closer than 20 feet to the power line

13.3.5.3 Determine the line's voltage and minimum approach distance permitted in Table A

13.3.6. Electrical equipment shall be so located or enclosed that live parts will not be exposed to accidental contact under normal operating conditions.

13.3.7. A competent person must conduct a visual inspection of equipment prior to each shift. The inspection must consist of observation for apparent deficiencies. Some inspection items shall include control mechanisms, pressurized lines, hooks and latches, wire rope, electrical apparatus, tires (when used), and ground conditions.

13.3.8. Monthly inspection must be conducted & records must be kept of all hooks with deformation or cracks. The certification records must include:

13.3.8.1. Date of inspection.

13.3.8.2. Signature of person performing inspection.

13.3.8.3. The serial number of other identifier of hook inspected.

13.3.9. Employers must make a monthly inspection & keep a record of hoist chains (including end connections) for

13.3.9.1. Excessive wear,

13.3.9.2. twist,

13.3.9.3. distorted links interfering with proper function, and

13.3.9.4. Stretch beyond manufacturer's recommendation. The certification records must include:

13.3.9.4.1. Date of inspection,
13.3.9.4.2. Signature of person performing inspection
13.3.9.4.3. Identifier of chain inspected

13.3.10. Equipment must be inspected monthly by a competent person and documented. Documentation must include the following: items checked, results of inspection, and name and signature of the inspector. Documentation must be retained for 3 months. (Documented monthly inspection not required if the daily inspection is documented and records are retained for 3 months)

13.3.10.1. Monthly inspection records shall be made and kept on critical items in use such as brakes, crane hooks, and ropes.

13.3.11. Safety devices are required to be on all equipment and must be in proper working order before operations begin. If any of the devices are not in proper working order the equipment must be taken out of service and operations must not resume until the device is working properly again. Examples of safety devices may include: crane level indicator, boom stops, jib stops, foot pedal brake locks, horns, etc.

13.3.12. A CO2 or dry chemical fire extinguisher shall be kept in the crane cab or vicinity of the crane.

13.3.13. All manufacturer procedures applicable to the operational functions of equipment, including its use with attachments, must be complied with.

13.3.14. The operator shall have access to procedures applicable to the operation of the equipment. Procedures include rated capacities (load charts), recommended operating speeds, special hazard warnings, instructions and operator's manual.

13.3.14.1. The rated load of the crane shall be plainly marked on each side of the crane, and if the crane has more than one hoisting unit, each hoist shall have its rated load marked on it or its load block and this marking shall be clearly legible from the ground or floor. The rated load marking on a hoist must be located and arranged so that it is evident to the personnel responsible for the safe operation of the hoisting unit.

13.3.15. Whenever there is a safety concern, the operator must have the authority to stop and refuse to handle loads until a qualified person has determined that safety has been assured.

13.3.16. A signal person must be provided for the following situations:

13.3.16.1. The point of operation is not in full view of the operator

13.3.16.2. The view is obstructed when the equipment is traveling

13.3.16.3. The operator or the person handling the load determines it is necessary due to site specific concerns.

13.3.17. Marking the boundaries of the crane swing radius with warning lines, railings or similar barriers are safety measures to be used when the equipment has the potential to strike and injure an employee or pinch/crush an employee against any other object.

13.3.18. Only those employees qualified by training or experience shall be allowed to operate equipment and machinery.

13.3.18.1. Within 4 years of November 8th 2010, employers must ensure operators be qualified/certified by one of the following methods:

13.3.18.1.1. Certification by an accredited crane operator testing organization
13.3.18.1.2. Qualification by an audited employer program
13.3.18.1.3. Qualification by the U.S. military
13.3.18.1.4. Licensing by a government entity

13.3.19. The manufacturer must approve all modifications/additions in writing. A registered professional engineer must be qualified with respect to the equipment involved, and must ensure the original safety factor of the equipment is not reduced.

13.3.20. A preventive maintenance program based upon the crane manufacturer's recommendations shall be established.

13.3.21. Before repair begins, equipment should be locked and tagged. "Out of Order" signs should be positioned on or near the equipment.

13.4. General

13.4.1. When it is necessary to work on a crane, a crane runway, or when employees might be endangered by the movements of cranes, be aware of the hazards and follow site specific rules. Contact the Safety Department prior to work so that a review can be made to determine if the owner’s safety rules are adequate. This shall apply to boarding, operating or repairing any part of crane system. Special precautions shall be taken when operating near energized electrical lines.

13.4.2. At a minimum, bumpers and red lights and flags must protect the runway. If cranes must continue to operate past the area, the Contractor must place a watch person on each side of the area as well as the person in the cab of each operating crane in direct communication with the ground duties. The safety person must not perform any other duties. The riding of crane hooks, “headache balls” (overhauling weights) or crane loads (lifts) is prohibited. Only one employee, shall be designated a signal person and will be clearly marked, shall provide signals utilizing a standard signal to operators. Any person shall not be allowed

to pass under a load or in the immediate controlled area while a crane is in operation. Lifting equipment shall be adequately designed, be of the correct capacity and used in accordance with all applicable specifications.

SECTION 14 –Railroad / Trains - Revised 05-17-2016

14.1. Purpose

14.1.1. The purpose of this policy is to ensure safe work practices in areas surrounding railroad tracks.

14.2. Scope

14.2.1. This program applies to all Monarch Welding Engineering, Inc. employees, subcontractors and escorted visitors.

14.3. General

14.3.1. When it is necessary to work within 20 feet of a train rail, or when employees might be endangered by the movements of trains, be aware of the hazards and follow site specific rules. Contact the Safety Department prior to work so that a review can be made to determine if the owner's safety rules are adequate.

SECTION 15 – Personal Protective Equipment - Revised 05-17-2016

15.1. Purpose

15.1.1. When engineering controls are not feasible, personal protective equipment shall be used to provide protection to employees.

15.2. Scope

15.2.1. This program applies to all Monarch Welding Engineering, Inc. employees, subcontractors and escorted visitors. This policy is in accordance with OSHA CFR 1910.132 - 137 general standards and MIOSHA Part 6 of the Construction Safety Standards.

15.3. General

15.3.1. All employees shall wear appropriate eye protection, hard hats, hearing protection, clothing (long sleeves and long pants), gloves and foot protection which meet current OSHA standards. Soft shields shall not be permitted on job sites, unless appropriate authorization has been given prior to use. **Hard hats, safety glasses, foot protection and long sleeves shall be the minimum requirements on a job site and shall be worn at all times except for when on break, or in trailer.**

15.3.2. Training

15.3.2.1. Each employee who is required to wear personal protection equipment (PPE) will be trained in the care, maintenance, life expectancy and proper disposal of that equipment. They will also be trained in the limitations of that equipment and how to properly wear and adjust it so that it provides maximum protection. This will also cover routes of entry such as inhalation, absorption, contact, etc.

15.3.3. Retraining

15.3.3.1. If working conditions change or the type of personal protection equipment (PPE) changes, employees will be retrained for the items covered in III A. Retraining will also occur if the PPE is being used improperly.

15.3.4. Record keeping

15.3.4.1. The hazard assessment must indicate a determination if hazards are present or are likely to be present, which necessitate the use of PPE. Certifier's name, signature, date(s) & identification of assessment documents.

15.4. Hazard Assessment

15.4.1. The hazard assessment must indicate a determination if hazards are present or are likely to be present, which necessitate the use of PPE. Certifier's name, signature, date(s) & identification of assessment documents.

15.4.2. Selection of PPE will be made based on assessment or on any testing deemed necessary for the area and the company shall supply all necessary PPE. Employees will be informed as to the reason PPE of this type was selected and how it will protect them from the hazard.

15.4.3. Record Keeping

15.4.3.1. Records will be kept identifying the hazard assessment by area, date, name, signature and any documents used for the assessment.

15.4.4. Fitting

15.4.4.1. If any equipment has to be fit tested, this will be done prior to an employee entering the area where the hazard exists.

15.4.5. Defective Equipment

15.4.5.1. Under no circumstances is defective equipment to be used. It is to be marked as defective and disposed of in a proper manner or exchanged with supervision with a properly operating piece of equipment. Employees who bring personal PPE must obtain permission from Monarch Welding and Engineering's Safety Department prior to use. This equipment must be sanitarily maintained, in good working condition, meet current standards and properly designed to provide protection required.

SECTION 16 - Respiratory Protection Program - Revised 05-17-2016

16.1. Purpose and Scope

16.1.1. This respirator program lays out standard operating procedures to protect MWE employees from respiratory hazards through proper selection and use of respirators, both for routine use and emergency conditions. Respirators are to be used only where engineering controls (such as forced air ventilation or local exhaust ventilation) of respiratory hazards are not practical or do not reduce atmospheric contamination sufficiently, while engineering controls are being installed, or in emergencies.

16.1.2. Employees are required to use appropriate respirators where necessary and according to their training and instructions. Only respirators certified by the National Institute of Occupational Safety and Health (NIOSH) will be selected and used. Where practical, respirators will be assigned to individuals. Respirators will be provided at no cost to MWE employees that may be exposed to harmful air contaminants or oxygen-deficient atmospheres.

16.1.3. Before being asked to wear a respirator, MWE employees will be medically evaluated, trained, and fit-tested to ensure that they are medically able to wear and work in a respirator, that the respirator fits the person, and that they understand how to use the respirator, what will protect against, and the limitations of the respirator.

16.1.4. The MWE Director of Safety and Health is designated as the respiratory Program Administrator. The Program Administrator is appropriately trained and has the authority to evaluate the effectiveness of this program and to make necessary decisions to ensure success of this program.

16.1.5. This program applies to all Monarch Welding & Engineering, Inc. employees, subcontractors, or visitors. It complies with OSHA 29 CFR 1926.103 construction safety standards and MIOSHA Part 451 occupational health standards - respiratory protection.

16.2. Respirator Selection

16.2.1. Respirators are selected on the basis of hazards to which the worker may be exposed. All selections are made by the Program Administrator. Only NIOSH-certified respirators will be selected. Respirator manufacturers and other technical experts will be consulted if there is any doubt regarding proper selection and use. Some of the criteria used to select respirators include air contaminant concentration, types of atmospheric hazards present (including chemical state and contaminant form), and emergencies.

16.2.2. The following types of respirators are in use by MWE:

Air Purifying Respirators (APRs)		
Make & Model	Uses/Exposures	Filter/Cartridges
3M 6000 (verify)Series ½ Face	Welding, Dusty Work	NIOSH 100 (HEPA)
3M 6000 (verify)Series Full Face	Welding, Dusty Work	NIOSH 100 (HEPA)
3M 6000 Series ½ Face	Welding, Organic Solvents	NIOSH 100/Organic Vapor
3M 6000 (verify)Series Full Face	Welding, Organic Solvents	NIOSH 100/Organic Vapor
3M 6000 (verify) Series Full Face	Welding, Organic Solvents, Acid Gases	NIOSH 100/Organic Vapor/Acid Gas
Self-Contained Breathing Apparatus (SCBA) and Supplied Air Respirators (SARs)		
(SCBA make & model needed if SCBA used)	Permit-required confined spaces, IDLH	Not Applicable, supplied grade D breathing air
(Make & model needed) full face supplied air respirator+	Permit-required confined spaces, IDLH	Not Applicable, supplied grade D breathing air

16.2.3. For work in Immediately Dangerous to Life or Health (IDLH) atmospheres, such as oxygen deficient (<19.5% O2) or potential hydrogen sulfide release locations, only SCBAs or supplied air respirators with 5 minute emergency escape air bottles will be used.

16.3. Medical Evaluations and Fit Testing

16.3.1. Each respirator user will be medically evaluated before being asked to wear a respirator. Medical evaluations will be done on a confidential basis per OSHA 1910.134 requirements (including Appendix C questionnaire) during regular working hours in a way that is convenient and understandable. Each MWE employee will have the opportunity to discuss the evaluation results with the doctor or license health care provider.

16.3.2. Users of tight-fitting respirators (those designed to seal to the face) will be fit tested after medical evaluation and before first use. They will then be fit tested annually or if changes to the user occur that would affect respirator fit, such as significant weight gain, weight loss, or dental work occurs. Fit testing for APRs will be done using qualitative methods per OSHA 1910.134 Appendix A. Fir testing for SCBAs and SARs will be done using quantitative methods per 1910.134 Appendix A. Fit tests records will indicate the name of the person tested; the make. model, style, and size of respirator; method of testing; date of test, and the results of the test, including quantitative test data (if applicable).

16.4. Training

16.4.1. Every respirator user will receive instructions in proper use, including demonstrations and practice in how the respirator should be worn, how to adjust it, and how to determine if it fits properly. Training will be done before a person is asked to put on a respirator and annually thereafter. The training includes an explanation of at least the following:

16.4.1.1. Nature of the respiratory hazards and what may happen if the respirator is not used properly.

16.4.1.2. Engineering and administrative controls being used to reduce exposure and the need for the respirator as added protection,

16.4.1.3. Reason(s) for selection of a particular type of respirator,

16.4.1.4. Limitations of the selected respirator,

16.4.1.5. How to inspect the respirator for proper function,

16.4.1.6. Methods of putting on and taking off the respirator and checking its fit and operation,

16.4.1.7. Proper wearing of the respirator,

16.4.1.8. Recognition of medical signs and symptoms of improper use,

16.4.1.9. Respirator maintenance and storage,

16.4.1.10. Proper method for handling emergency situations and,

16.4.1.11. General requirements of the OSHA respiratory protection regulation, 1910.134.

16.5. Respirator Use

16.5.1. Tight fitting face piece respirators **MAY NOT** be worn when conditions prevent a good face seal. Such conditions include facial hair where the respirator seals to the face growth of beard, sideburns that interfere with the seal, a skullcap which projects under the facepiece, temple pieces on glasses that interfere with the seal, or any other condition that prevents a proper seal of the respirator to the face. No cosmetics (such as Vaseline) may be used to create a respirator to face seal. Employees may not wear beards when wearing tight-fitting respirators. Beards can interfere with exhaust valve function. Also, the absence of one or both dentures can seriously affect the fit of a face-piece.

16.5.2. MWE employees wearing respirators must leave the work area immediately if they detect breakthrough of air contaminants, leakage of the respirator, increased resistance of air drawn through the cartridge/filter, or breathing difficulty. They

must also leave the work area to wash, change cartridges/filters or SCBA tanks, get a drink, or take a break.

16.5.3. MWE supervisors and the Program Administrator will inspect work areas where respirators are used to ensure compliance with the respiratory protection programs, to check for undue employees stress caused by the respirator use, and to monitor changes to the work environment that would affect respirator effectives.

16.5.4. IDLH (immediately dangerous to life or health) atmosphere procedures include:

16.5.4.1. At least one MWE employee will be stationed outside the IDLH atmosphere as an attendant to maintain communication with the employee(s) working in the IDLH area.

16.5.4.2. Only pressure-demand SCBAs with at least one hour-rated air bottle or SARs with 5 minute escape air bottle shall enter IDLH areas.

16.5.4.3. IDLH entrants shall be equipped with body harnesses and retrieval lifelines to allow non-entry rescue. If these harness and retrieval lines would not effectively allow for rescue, no one shall enter IDLH areas unless a trained and properly equipped rescue team is readily available for rescue efforts and has been put on stand-by notice.

16.5.4.4. The attendant shall be trained and equipped to provide non-entry rescue.

16.5.4.5. Attendant shall notify the MWE supervisor immediately if an emergency situation develops.

16.6. Inspection, Cleaning, Maintenance, and Storage

16.6.1. Respirators will be regularly cleaned and disinfected. The Program Administrator has established respirator cleaning and maintenance procedures and a place to store respirators in a clean and sanitary location. Respirators used routinely will be inspected for proper function by the user before putting on the respirator. They will also be inspected during cleaning and before being worn by another employee. Damaged or defective respirators will be replaced. Respirators for emergency use such as SCBAs will be thoroughly inspected at least once a month and after each use.

16.7. Specific Requirements

16.7.1. Job site supervision shall have the responsibility to insure that this program is properly implemented and controlled.

16.7.2. Job site supervision shall provide at no cost, respirators that will be needed to protect the health of employees.

16.7.3. The respirators provided shall be suitable for the intended uses and exposures.

16.7.4. Corporate Safety Director will make final determination as to proper respirator selection. All respirators selected shall be NIOSH approved. (Tested and Certified).

16.8. Respirator Care and Maintenance

16.8.1. When practical, respirators should be assigned to individual workers for their exclusive use.

16.8.2. Those respirators assigned to individual workers should be cleaned on a daily basis or more often if necessary. Facial hair, glasses or any other object shall not interfere with face piece seal.

16.8.3. Those respirators used by more than one worker shall be cleaned and disinfected after each use.

16.8.4. The respirators shall be cleaned and disinfected in accordance with the manufacturer's instructions.

16.8.5. Respirators shall be stored in a convenient, clean and sanitary location.

16.8.6. Respirators being used shall be inspected during cleaning. Worn or deteriorated parts shall be replaced. Respirators for emergency use shall be inspected at least once a month and after each use.

16.9. Specific Requirements

16.9.1. Before any work begins in an area containing contaminants, job site supervision shall contact the Corporate Safety Director, so that they can review the situation and insure all necessary precautions have been taken. Corporate Safety shall evaluate contaminate form, exposure levels and select proper protection. This may be any of the previously listed respirators.

16.9.2. Employees must be trained in the use of specific respirator prior to use.

16.9.3. Employees shall be instructed on proper donning of respirator, positive and negative fit checks, limitations of specific respirator, proper cleaning and inspection of respirator per manufacturers instruction. Documentation of this required training is to be kept on job site with a copy sent to the corporate safety director.

16.9.4. A subcontractor certified in this type of testing will do respirator fit testing when required. Documentation of all fit testing shall be maintained on project with a copy sent to corporate safety director. Respirator fit testing when required shall be done at least semi-annually.

16.9.5. This program shall be reviewed annually or any time if there is a question of its effectiveness.

16.9.6. All supplied air or self-contained breathing apparatus must use Grade "D" air. Compressors are not to be used for breathing and all air cylinders must have fittings that are not compatible with any non-breathable cylinders or supplies of gasses.

SECTION 17 – Diving - Revised 05-17-2016

17.1. It is our policy to subcontract this type of work. Our employees are not involved. We will review the safety policies and work practices of all these subcontractors to insure regulatory compliance.

SECTION 18 – Working Over or Near Water - Revised 05-17-2016

18.1. Employees working over or near water, where the danger of drowning exists, shall be provided with a U.S. Coast Guard-approved life jacket or buoyant work vests.

18.1.1. Prior to and after each use, the buoyant work vest or life preservers shall be inspected for defects which would alter their strength or buoyancy. Defective units shall not be used.

18.2. Ring buoys with at least 90 feet of line shall be provided and readily available for emergency rescue operations. Distance between ring buoys shall not exceed 200 feet.

18.3. At least one lifesaving skiff shall be immediately available at locations where employees are working over or adjacent to water.

SECTION 19 – Sand Blasting - Revised 05-17-2016

19.1. It is our policy to subcontract this type of work. Our employees are not involved. We will review the safety policies and work practices of all these subcontractors to insure regulatory compliance.

SECTION 20 – First Aid Response & Blood-Borne Pathogens – Revised 05-17-2016

20.1. Purpose

20.1.1. This policy establishes the minimum requirements for incipient first aid response to injuries and illnesses in the workplace and outlines procedures for controlling and evaluating employee exposure to blood-borne pathogens and/or other body fluids. It will detail processes used for the clean up and decontamination following a spill of blood or other potentially infectious body fluids.

20.2. Scope

20.2.1. This policy applies to all persons, including all escorted visitors and contractors, working for Monarch Welding & Engineering, Inc. This procedure is in accordance with OSHA's Emergency Medical Services (First Aid) standard 29 CFR 1910.151 and the Blood-Borne Pathogen standard 29 CFR 1910.1030.

20.3. Terms & Definitions

20.3.1. Blood-borne pathogen - Any disease-producing micro-organism in the blood

20.4. Requirements

20.4.1. Prior to work commencing, on-site project management shall develop a written emergency/medical plan. This plan shall include, at minimum:

20.4.1.1. Evacuation routes (minimum 2 designated meeting places)

20.4.1.2. Emergency response

20.4.1.3. Ways of summoning emergency services

20.4.1.4. Way to alert employee (Communication)

20.4.1.5. Pre-notification of planned designated medical treatment facilities to ensure adequate care.

20.4.2. It is the foreman's responsibility to maintain an accurate headcount at all times. In case of an evacuation or emergency, employees shall be instructed to notify direct supervisor as to their exact location.

20.4.3. Designated medical treatment facilities. Each site has designated local hospitals and clinics to be used during all working hours for emergency medical treatment of workplace injuries and illnesses. If an employee is to be taken to the approved

hospital or clinic, their supervisor/foreman must complete an Authorization for Medical Treatment form[1]. The employee is to take the original form with them to the clinic, once a copy has been made for the Monarch Welding & Engineering, Inc. Safety & Health Director. In the event of a serious injury or medical situation, notify the Safety & Health Director and the main office immediately.

[1]See Forms Exhibit B

20.4.4. **Transportation**

20.4.4.1. Employees with minor injuries or general illness (not requiring stabilization) are to be transported from the job site to the designated hospital or clinic by the company represenitive or union steward.

20.4.4.2. Employees are to be transported by ambulance to the designated hospital or clinic when they have major injuries where it would be inadvisable to move them or illnesses that may be life threatening.

20.4.5. **First Aid Responders**

20.4.5.1. The following Monarch personnel have been commissioned as first aid responders but only until professional help arrives.

20.4.5.1.1. The Safety & Health Director
20.4.5.1.2. Site supervisor
20.4.5.1.3. Site foremen

20.4.6. Any and all other employees or contractors, who provide first aid, do so as a Good Samaritan only and are not covered by the Blood-Borne Pathogen standard.

20.4.6.1. Field/job superintendent shall be responsible to implement the arrangements to effectively set up a *plant* medical emergency procedure.

20.4.6.2. Establish a medical emergency procedure to be approved by the contractor and owners safety directors.

20.4.6.3. Post phone numbers for ambulance service and an approved medical facility.

20.4.6.4. Train *all* Monarch Welding & Engineering personnel and subcontractors on the implementation of this procedure.

20.4.6.4.1. Review the medical emergency procedures with the approved owner representative and the contractor employer during all safety meetings.

20.5. Blood-Borne Pathogens

20.5.1. Exposure to blood or other body fluids is a major concern because of the risk of infection by viruses that can cause Acquired Immune Deficiency Syndrome such as AIDS and Hepatitis B.

20.5.2. Employees shall not be required to perform tasks that involve exposure to blood or other potentially infectious materials on a routine or non-routine basis as a condition of employment. Nor do employees as a normal part of their duties and responsibilities, perform or assist in emergency medical care or first aid and are not reasonably anticipated to be exposed in any way. Therefore, the exposure control plan, precautions, engineering controls, work practices, etc. required of HIV and the Hepatitis Virus Research laboratories and production facilities, hospitals, family doctors, etc. is not required as a condition of employment.

20.5.3. Employees shall be provided training in the use of personal protective equipment, the de-contamination procedures and waste disposal procedures so that exposure to blood or other body fluids can be safely and intelligently avoided.

20.5.4. A "Blood borne Pathogens Infection Control Kit" will be kept at each job site location under the control of the site supervisor. Exposure control plans will be posted at the site when applicable.

20.5.5. A complete kit including protective equipment shall be available at each job site. This kit shall contain a face shield, and latex gloves for personal protection. Germicidal towelettes, a blood borne pathogen destroying cleaning solution for surfaces contaminated with body fluids (it contains sodium hypochlorite), chlorinated absorbent beads, a small shovel, blanket, and plastic bags for used and exposed contaminated items.

20.5.6. Normal work activities are not reasonably expected or anticipated to expose employees to blood borne pathogens. The provisions of General Industry Regulations 1910.1030 are here in incorporated by reference for non-routine tasks and/or in the event an employee is assigned the responsibility to perform first aid.

20.5.7. Additional procedures for non-routine tasks and/or assigned first aid responders will include the following.

20.5.7.1. **Training:**

20.5.7.1.1. First aid and infectious hazard training will be provided before being assigned to any task that may reasonably result in exposure.
20.5.7.1.2. The American Red Cross will provide this training or qualifying agency approved by management.
20.5.7.1.3. The training will be renewed annually and/or when there is a change in Federal Standard 1910. 1030.
20.5.7.1.4. The training will be provided at no cost to the employee.

20.5.7.1.5. All training records will include the name of the trainee, the trainer, the dates of training, and documented proof of understanding. Records will be maintained for 3 years and made available to employees upon request by contacting the Safety Director.

20.5.7.2. **Personal Protective Equipment:**

20.5.7.2.1. PPE will be provided for the employee at no cost to the employee.
20.5.7.2.2. PPE will include as a minimum.

- Latex gloves
- Face shield
- Non-contact breathing mask for CPR
- Disposable coveralls

20.5.7.3. **General:**

20.5.7.3.1. All body fluids shall be considered as hazards.
20.5.7.3.2. In the event of exposure or potential exposure the site foreman will prepare a written incident report to management within 24 hours.
20.5.7.3.3. Any employees exposed, potentially exposed, or assigned, as first aid responders will be offered Hepatitis B vaccinations at the company's expense.
20.5.7.3.4. Potential exposure will be considered to have occurred regardless of the PPE being used by the first aid responder.
20.5.7.3.5. In the event of any exposure incident all involved surfaces shall be decontaminated using the infection control kit provided at all sites, Clothing and other exposed materials shall be bagged and identified as a biohazard using tags or stickers as shown. The bags shall then be disposed of in accordance with the local Department of Public Health Rules.

20.5.7.4. Any potential exposure event must be reported to management.

20.5.7.5. Accurate records for each employee with occupational exposure must be maintained for at least the duration of employment plus 30 years.

20.6. First Aid Supplies & PPE

20.6.1. All first aid supplies, including eye wash bottles, and personal protective equipment will be stored, maintained, and replenished, as necessary, in all weatherproof first aid kits on each job site and in all service trucks.
20.6.2. **Note:** Subcontractors are required to make arrangements for adequate first aid supplies and medical services prior to working for Monarch Welding & Engineering, Inc.

20.6.3. The supply checklists, included with each individual first aid kit, are to be completed immediately following an incident. The completed checklist must be sent to the Safety & Health Director so that the materials used can be replaced promptly.

20.6.4. The Job Foreman will inspect first aid kits and supplies monthly. They shall contain at a minimum the following components:

Kit Components:

Adhesive bandages	78
Antiseptic Wipes	10
Burn Cream, 1/8-oz. Foil Pack	6
Cold Pack, Instant	1
Compress bandages	6
Contents Card	1
Eye Irrigation Solutions (1 oz.)	1
Eye Packet	4
First Aid Instructions	1
Forceps (Tweezers)	1
Gauge Pads	4
Gloves, Vinyl (Pair)	2
PVP Wipes	10
Scissors	1
Sting-Relief Wipes	10
Tape, 2.5 yards	2
Triangle Bandage	1
Tylenol Regular-Strength Tablets	10
Total Components	**149**

20.7.Clean-up & Decontamination

20.7.1. All materials contaminated with blood or other body fluids are to be placed in the red biohazard bags (supplied in the first aid kits) prior to leaving the scene. These bags are used for the disposal or the decontamination of the soiled clothing and/or personal protective equipment by the safety department.

20.7.2. All employees, who may have come into contact with blood or other body fluids, must wash the area(s) of contact as soon as possible and then inform the Safety & Health Director of the incident.

20.7.3. **NOTE:** Hand washing is also required after removing protective gloves.

20.7.4. All equipment and surfaces that may have been contaminated must be cleaned immediately with a solution of 10:1 water and bleach. (This solution is to be kept with the first aid kits.)

20.7.5. Equipment that cannot be decontaminated must be labeled "BIOHAZARD" with the labels found in the first aid kits. These labels must also list the contaminated portions.

20.7.6. **IMPORTANT:** ONLY TRAINED PERSONNEL ARE PERMITTED TO CLEAN UP POTENTIALLY INFECTIOUS MATERIALS.

20.8. Corrosive Material

20.8.1. When an individual is assigned work that has a potential of exposure to corrosive material, the following steps must be taken:

20.8.2. Proper P.P.E. must be worn, this must include at a minimum, outer protective garments and chemical splash goggles.

20.8.3. Eyewash and emergency shower must be in area of work. Employees must be shown where these are and trained in their proper use.

SECTION 21 – Hazard Communication Policy & Procedure "Right to Know" - Revised 02-27-2019

21.1. Introduction

21.1.1. Monarch Welding & Engineering, Inc. policy's first consideration in the performance of work shall be the safety and health of all employees. The company has developed this Hazard Communication program to ensure that all employees receive adequate information and training relevant to the possible risks, which may be involved, with the various hazardous substances used in the company's operations and processes. The following outlines how we will accomplish this objective.

21.2. Scope

21.2.1. This policy covers all potential exposures involving hazardous substances as defined by OSHA Hazard Communication standard (29 CFR 1910.1200 (h), 1926.55), the Michigan Public Act 154, and MIOSHA Michigan Right To Know (Act no. 80 Public Acts of 1986, effective April 7, 1986).

21.2.2. A written hazard communication program will be developed, implemented and maintained at each worksite.

21.3. Hazard Determination

21.3.1. Monarch Welding & Engineering, Inc. will rely on material safety data sheets obtained from product suppliers to meet hazard determination requirements.

21.4. Container Labeling

21.4.1. A. No container or hazardous substances will be released for use unless the container is correctly labeled and the label is legible (in English). It will be the responsibility of the safety department and/or the site superintendent to enforce this rule.

21.4.2. All chemicals in bags, drums, barrels, boxes, cans, cylinders, reaction vessels, storage tanks, or the like will be checked by the receiving department or the site superintendent to ensure the manufacturer's label is intact, is legible, and has not been damaged in any manner during shipment. Any container found damaged or has missing labels will be quarantined until a new label has been installed.

21.4.3. The label must contain:

21.4.3.1. Identity of the material.
21.4.3.2. Appropriate hazard warnings for the material.

21.4.3.3. Name and address of the responsible party.

21.5. SDS

21.5.1. Each location must maintain a master SDS file as well as a site-specific file. Each service truck will contain a master SDS file. These material safety data sheets are available to all employees, at all times, upon request.

21.5.2. The safety director will be responsible for reviewing all incoming material safety data sheets for new and significant health/safety information. The company will ensure that this information is disseminated to all affected employees. The safety director and/or the site superintendent shall be responsible for ensuring that all materials have material safety data sheets.

21.5.3. The purchasing department and/or the site supervisor will assure that all new materials are sent with the appropriate SDS. New materials that do not come with a SDS will not be introduced into the workplace until an SDS is on site.

21.5.4. The safety director or his designee shall coordinate with appropriate areas to make sure all material safety data sheets are obtained, distributed, and communicated. Each job site shall have a file of SDS's in change area for employees.

21.6. Employee Information & Training

21.6.1. The safety director shall coordinate and maintain records of training conducted at Monarch Welding & Engineering, Inc.

21.6.2. Each new employee will be informed about the hazard communication program as well as the location and use of material safety data sheets. Each site will inform the employee of any hazardous materials used on or at that site.

21.6.3. At site safety meetings, new and/or revised material safety data sheets will be discussed.

21.6.4. All employees shall be trained as per 1910.1200(h) prior to starting work.

21.6.5. Notices will be posted on employee bulletin boards to provide the location of the written Hazardous Communication Program and the material safety data sheets.

21.6.6. Labeling, SDS and all training information shall be legible and be presented in a language employees can comprehend. For any employee who appears to have difficulty reading the above material, it shall be given to them verbally.

21.7. Non-routine Tasks

21.7.1. If an employee is required to perform a task, which is not part of her/her normal routine, any hazards involved will be explained and protective/safety measures that the employee should take will be explained.

21.8. Informing Subcontractors

21.8.1. To ensure that our subcontractors work safely at our job sites and to guarantee the safety of the subcontractor's employees, it will be management's responsibility to provide our subcontractors the following information.

21.8.2. A list of the hazardous substances to which they may be exposed while working at the site.

21.8.3. The precautions that the subcontractor's employees must take to lessen the possibility of exposure.

21.8.4. The safety rules and regulations that their employees must follow regarding smoking, welding, grinding. These rules will also include information about relevant fire and ignition sources around flammable materials.

21.8.5. The safety director and/or site supervisor will be responsible for obtaining a list from the subcontractor of any hazardous substance(s) that their employees may be bringing to the site for use in their work. Along with this list should be a copy of the SDS relevant to these substances.

21.9.Plan Administration

21.9.1. The Monarch Welding & Engineering Inc., Safety Director, will monitor this Hazard Communications Program. Any questions regarding this program should be directed to the Safety Director.

SECTION 22 – Hazardous Waste Operations – Emergency Response Resource Conservation and Recovery Act (RCRA) – Revised 05-17-2016

22.1. It is our policy to subcontract all hazardous waste operations. Our employees are not involved. We will review the safety policies and work practices of all these subcontractors to insure regulatory compliance.

22.2. Subcontractors Safety programs and EMR stats are reviewed initially when the project starts, then on an annual basis. Once the review is complete the subcontractor will be qualified and awarded the project. If the review is non-satisfactory a different contractor will be chosen.

22.3. The review of their program shall consists of but not limited to:

22.3.1. Employee will be trained in the areas they are working in including duties and functions.

22.3.2. First responder awareness level as individuals who are likely to witness or discover a hazardous substance release and who have been trained to initiate an emergency response sequence by notify the proper authorities of the release.

22.3.3. Credentials and or experience of the trainer to train the material in the plan.

22.3.4. Documentation of annual and refresher training in accordance with their plan.

22.3.5. What procedures are implemented when an emergency response plan shall be developed and implemented? This plan shall handle anticipated emergencies prior to the commencement of the emergency response operations. The plan will be in writing and available for inspection by employees, their representatives and OSHA.

22.3.6. Elements included in the emergency response plan:

22.3.6.1. Pre-emergency planning and coordination with outside parties.

22.3.6.2. Personnel roles, lines of authority, training and communications.

22.3.6.3. Emergency recognition and prevention.

22.3.6.4. Safe distance and places of refuge.

22.3.7. Emergency Response Organization and procedures for management of the response is the most senior official on the site who has the responsibility for controlling operators at that site.

22.3.8. Medical surveillance is available for emergency response employees who exhibit signs or symptoms which may have resulted from exposure to hazardous substances during the course of an emergency.

SECTION 23 – Process Safety Management - Revised 05-17-2016

23.1. Purpose

23.1.1. To prevent unwanted release of hazardous chemicals into locations that could expose employees, the general public and the environment.

23.2. Scope

23.2.1. All Monarch Welding Engineering, Inc. employees, subcontractors, and escorted visitors. This procedure is in accordance with OSHA's appendix C to 1910.119 and MIOSHA's Part 91 Construction Standards.

23.3. General

23.3.1. Training

23.3.1.1. When the work area contains hazardous chemicals, the owner will be asked for specific procedures that will be required to operate in these areas. Anyone assigned in the scope of this policy will be trained in potential hazards involved such as fire, explosion, toxic release, etc. Emergency action plans will also be included in this training. Process safety management will be explained and its importance will be stressed.

23.3.1.2. The contract employer shall advise the employer of any unique hazards presented by the contract employer's work, or of any hazards found by the contract employer's work.

23.3.1.3. Hazard recognition and how they are reported will be part of the training. If the owner has specific safety programs used in their facility, employees will be trained in their use and how they vary from Monarch Welding Engineering, Inc. programs.

23.3.1.4. All training will be documented including employee name, date of training, areas covered and a quiz will be given to verify employee understanding.

23.3.1.5. All employees shall abide by the owners safe work practices during operations such as lock out/tag out, confine space entry, opening process equipment, or piping and controls over entrance to the facility.

23.3.2. Chemical Recognition

23.3.2.1. Safety data sheets will be the accepted method for determining the precautions that must be taken such as PPE and fire prevention.

23.4. Welding, Cutting, & Brazing

23.4.1. Whenever any of these functions are to be done, the owners hot work permit system will be used. If the owner does not have a system in place, Monarch Welding Engineering, Inc. hot work permit system (included in the welding and cutting policy) will be instituted.

23.4.2. Monarch employees shall not perform hot work until a hot work permit is obtained. The permit shall document that the fire prevention and protection requirements in have been implemented prior to the beginning of hot work operations.

23.5. Accident/Incident Investigation

23.5.1. If an accident/incident occurs, an investigation with report will be completed within 48 hours. Follow Monarch Welding Engineering, Inc. accident/incident policy or the policy guidelines of the owner.

23.5.2. Records of all investigations will be kept for a minimum of five (5) years.

23.6. Trade Secrets

23.6.1. Any Monarch Welding Engineering, Inc. employee who becomes privy to owners trade secrets will not divulge any part of this information. In doing so, it will cause immediate disciplinary action up to and including dismissal and/or prosecution.

SECTION 24 - Asbestos Management/Maintenance - Revised 05-17-2016

24.1. It is our policy to prevent exposure to asbestos by our personnel. If work requiring disturbance of asbestos-containing materials (ACM) or presumed asbestos-containing materials (PACM) is needed, we will subcontract this type of work. "*Disturbance*" means anything that would cause damage or abrasion to ACM PACM or kick up dust contaminated with asbestos. Our employees are not to do work involving asbestos exposure. All employees must abide by asbestos warning signs and labels and must not do anything that would disturb ACM or PACM. Never enter an area posted with asbestos warning signs that indicate *"authorized personnel only*." We will review the safety policies and work practices of all subcontractors hired to do asbestos work to insure regulatory compliance.

24.2. ACM includes any material with more than 1% asbestos content. Layered materials, such as built-up roofing materials and layered insulating materials, with more than 1% asbestos in any layer are also considered ACM.

24.2.1. Typical ACM include:

24.2.1.1. Pipe, boiler, and tank insulation;

24.2.1.2. Pipe caulking;

24.2.1.3. Duct insulation;

24.2.1.4. Sprayed-on fireproofing and soundproofing;

24.2.1.5. Plaster;

24.2.1.6. Gaskets;

24.2.1.7. Ceiling tile and floor tile;

24.2.1.8. Cement board and cement pipe;

24.2.1.9. Building siding

24.2.1.10. Heat-resistant clothing; and

24.2.1.11. Vehicle and equipment brake pads, brake shoes, and clutch linings

24.3. PACM are materials which must be presumed to contain asbestos until proven otherwise by laboratory testing or material records such as material safety data sheets. Materials that must be presumed to contain asbestos include *thermal system insulation* and *surfacing materials*:

24.3.1. Typical PACM include:

24.3.1.1. Pipe, boiler, and tank insulation;

24.3.1.2. Sprayed-on fireproofing and soundproofing;

24.3.1.3. Plaster;

24.3.1.4. And any material sprayed onto or troweled onto a surface.

24.4. ACM and PACM are often found in difficult to see areas such as on beams, the underside of decking, in basements and crawl spaces, in between walls, and in pipe chases

24.5. Multi-Contractor Sites To prevent asbestos exposure caused by other companies such as the host company or other contractors, Monarch Welding & Engineering personnel shall be removed from any work area adjacent to an asbestos work area or area where other employers may be disturbing asbestos in an uncontrolled manner. Evidence of possible asbestos exposure include dust clouds escaping from an asbestos abatement enclosure or glove bag, containment barriers or glove bags falling down, contractors disturbing ACM or PACM without containment measures, personnel walking through dislodged ACM or PACM, etc. If any of these happen, all Monarch personnel shall inform their supervisor and leave the work area until the responsible contractor(s) have properly addressed the asbestos work or Monarch has conducted and initial exposure assessment and determined that exposure is at a safe, legal level.

24.6. Training Requirements

24.6.1. All Monarch Welding employees and sub-contractors performing work in a facility that contains or may contain ACM's shall receive asbestos awareness level training as required by 1926.1101(g) (10).

24.6.2. Asbestos Awareness Training topics include:

24.6.2.1. Methods to recognize ACM and PACM;

24.6.2.2. The requirement to presume that thermal system insulation and surfacing materials contain asbestos until laboratory testing or material records prove otherwise;

24.6.2.3. Potential health effects of exposure to asbestos, including respiratory diseases such as asbestosis, lung cancer, and mesotheloima and digestive tract cancers;

24.6.2.4. Increased risk of lung cancer by smokers exposed to asbestos; and

24.6.2.5. Type of work activity that can cause asbestos exposure.

SECTION 25 - Hydrogen Sulfide (H_2S) Exposure - Revised 05-17-2016

25.1. Purpose

25.1.1. The purpose of this procedure is to provide basic safety and health information about hydrogen sulfide. This program also establishes the minimum guide lines and safe work practices when hydrogen sulfide is present in the work environment.

25.2. Scope

25.2.1. All employees, subcontractors, and escorted visitors who may be exposed to hydrogen sulfide.

25.3. General

25.3.1. Potential Exposure

25.3.1.1. The following operations could cause an exposure to hydrogen sulfide:

25.3.1.1.1. Drilling Operations

- Recycled drilling mud
- Water from sour crude wells
- Blowouts

25.3.1.1.2. Tank gauging (tanks at producing, pipeline and refining operations).

25.3.1.2. Field maintenance.

25.3.1.2.1. Tank batteries and wells, etc.

25.3.2. Characteristics

Toxicity	Highly toxic by product
Color	Colorless
Odor	Rotten Egg
Solubility	Very soluble
Flammability	Extreme

25.3.3. Health Effects

25.3.3.1. Eye irritations, effects nerve centers of the brain which controls breathing.

25.3.4. Concentration PPM Potential effects.

0.1 – 0.2	Odor threshold
3.0 – 5.0	Offensive smell
10.0 – 50.0	Throat, eye irritation, headache, cough, and nausea
50.0 – 100.0	Throat, eye inflammation, blistering, and loss of sense of smell
100.0 – 300.0	Life threatening, respiratory difficulty, pulmonary edema, respiratory depression, and olfactory paralysis
300.0 – 600.0	Central and peripheral nervous system effects, tremors, weakness, numbness of extremities, unconsciousness, and convulsion. Death can occur if exposure is 30 to 60 minutes
600.0 – 1000.0	Rapid unconsciousness resulting in death if aid is not promptly administered.
1000.0 or Greater	Cessation of breathing (instantly) and death

25.4. Detection

25.4.1. Whenever possible exposure exists a personal monitor will be worn, which will be set to alarm when PEL is above 10 PPM.

25.4.2. Alarm sounding will cause immediate vacating of the area and it cannot be re-entered unless the area is cleared of hydrogen sulfide or proper respirator is used.

25.5. Respiratory Protection

25.5.1. NIOSH approved and certified self-contained breathing apparatus (SCBA) or airline respirator with escape SCBA will be used.

25.6. Owners H_2S Policy

25.6.1. If the owner has a policy for hydrogen sulfide in place it will be reviewed and used if it will provide proper protection.

25.7. Confined Space

25.7.1. Owners confined space policy will be followed if it provides proper protection.

25.7.2. If not, follow Monarch Welding Engineering, Inc. confined space policy and procedures and treat area as a permit required confined space.

SECTION 26 - Lead Exposure - Revised 05-17-2016

26.1 Purpose

26.1.1. The purpose of this procedure is to minimize employee exposures to inorganic lead. It is also to establish effective industrial hygiene controls for workers who are potentially exposed to lead containing dusts or fumes at or above the MIOSHA Action Level.

26.2 Scope

26.2.1. This policy applies to all Monarch Welding & Engineering, Inc. employees and contract employees working on lead containing materials during activities such as demolition, scrapping, grinding, cleaning, cutting, welding and torch burning.

26.2.2. This plan is in accordance with requirements set forth in OSHA's 29 CFR Part 1926.62 and MIOSHA's R 408.1024 construction health standards.

26.3. Lead Exposure Limits

Action Level:	30 microgram/m^3 8 hour TWA
Permissible Exposure Limit (PEL)	50 microgram/m^3 8 hour TWA
PEL (in any workday exceeding 8hrs)	400mg/m^3 ÷ hours worked

26.4. Initial Hazard Assessment

26.4.1. Operations such as welding, cutting, burning or soldering on coated surfaces may cause the generation of inorganic lead dust or fumes. Where the potential for exposure to inorganic lead during such operations is unknown (or the lead content is unknown), an initial hazard assessment, including chemical spot checks and bulk sampling shall be performed prior to disturbing the surface to determine the amount of lead present in the protective coating.

26.4.1.1. Bulk Sample Collection

26.4.1.1.1. Samples should be obtained from representative areas by scrapping an approximately one square inch area of the coating own to the base metal with a sharp chisel. Each sample should be sealed in its own labeled plastic bag or other container that prevents the sample from being contaminated.

26.4.1.2. Chemical Spot Tests (Field Test Kits)

26.4.1.2.1. Chemical spot tests involve a reaction which causes a color change. While these tests may be used as a qualitative screening tool for the identification of lead base paint. False negative results are possible with multi-layered or dark colored coatings. Negative spot test results must be supplemented with quantitative laboratory analysis of paint scrapings for verification.

26.4.1.3. Laboratory Analysis

26.4.1.3.1. Analysis for lead content should be conducted by an accredited laboratory using either inductively coupled plasma emission spectroscopy or atomic absorption spectroscopy. Analytical results should be reported in micrograms per grams or percent by weight.

26.5. Periodic Area And Personal Monitoring

26.5.1. Periodic area and personal monitoring will be conducted whenever operations such as welding, cutting or grinding on lead containing coatings are performed. Where exposure control measures are not utilized or the lead content and historical monitoring data does not exist, the employee will wear the maximum personal protective equipment required (i.e. coveralls, gloves and the appropriate respiratory protection) until concentrations are known. The determination of a representative employee exposure should be made from breathing zone air samples during operations such as mentioned above.

26.6. Medical Surveillance

26.6.1. For routine maintenance tasks not associated with construction activities or the medical monitoring shall be performed on employees potentially exposed to 30 micrograms of lead per cubic meter of air for more than 30 days per year. For all construction related tasks, those employees exposed above 30 micrograms per cubic meter for one day, will receive a baseline blood lead level annually while they are employees of this company. Any employee who requires an annual blood test as per above section, who test results are 50 ug/dl shall be removed from job status having potential of lead exposure. This employee shall not return to his/her job status until he/she has two blood sampling tests that show blood lead levels below 40 mg/dl. These tests shall be at least one week apart.

26.7. Engineering Controls And Work Practices

26.7.1. Engineering Controls

26.7.1.1. Whenever possible engineering controls should be used. This may include, but is not limited to, chemical stripping, wet blasting or vacuum blasting.

26.7.1.2. The site specific compliance program should address means of engineering & work practice controls, air monitoring, a description of each operation in which lead is emitted, The written program must be revised & updated annually.

26.7.2. Containment

26.7.2.1. Containment systems are often used to reduce environmental contamination by capturing coating particles and fumes.

26.7.3. Work Practices

26.7.3.1. Prior to: welding, burning or grinding any surface containing lead or coated with lead containing material, the coating should be removed to a point of at least four (4) inches in diameter from the area where heat is to be applied. When removal is not feasible, respiratory protection and other PPE will be used until exposure assessment indicates that less restrictive protection may be used.

26.7.4. Warning Signs

26.7.4.1. Employees will abide by warning signs, labels, and assessment reports and will not disturb the lead containing material.

26.7.4.2. Post signs in each work area where any employee exposure to lead is in excess of the PEL. These signs must have similar wording as follows:

26.7.4.2.1. **WARNING**
LEAD WORK AREA
POISON
NO SMOKING OR EATING

26.7.5. Personal Hygiene/Hygiene Facilities

26.7.5.1. Proper personal hygiene is an important control measure for protecting workers from exposure to lead dust. Eating, drinking and use of tobacco products are not permitted in the work area. Adequate washing facilities should also be available and need to be used at the end of the work shift. Where exposures exceed the PEL change/shower facilities are provided. Sub-contractors are responsible to provide their own change/shower facilities.

26.7.5.2. Employees will wash hands and face if lead materials are contacted.

26.7.6. Housekeeping

26.7.6.1. All surfaces must be maintained as free as practical of accumulations of lead. Vacuuming is the preferred method of cleaning up the lead dust, but it must be equipped with a high efficiency particulate air filter.

26.8. Respiratory Protection And Personal Protective Equipment

26.8.1. Protective Clothing

26.8.1.1. Appropriate protective clothing shall be provided (at no cost) for employees with the potential for contact with lead contaminated material, coveralls, hats, gloves and shoe covers will be used. Face shield or goggles will be used for eye protection; contaminated clothes will be kept separate from street clothes and laundered weekly or more often as needed.

26.8.1.2. All protective equipment must be removed in designated change areas. Contaminated clothing must be put in closed containers marked with a sign similar to below:

26.8.1.2.1. **CAUTION: Clothing contaminated with lead.**
Do not remove dust by blowing or shaking.

26.8.2. Respiratory Protection

26.8.2.1. When respirators are worn they must be rated by NIOSH and afford the type of protection needed for lead exposure. Employee may choose any respirator that is rated for the intended use (including PAPR). Monarch Welding will provide said respirators filters and maintenance required to keep respirators in proper working order. These shall be provided at no cost to the employee.

26.9. Training

26.9.1. Employee shall be informed of Appendices A & B of the regulation. All affected employees are required to attend initial and annual training programs. The employees should be informed of the specific nature of the operations which could result in exposure to lead above the action level, the purpose, proper selection, fitting, use, and limitation of respirators, engineering controls, purpose & a description of the medical surveillance program & the medical removal program.

26.9.2. Employees required to work in lead exposure areas will receive training. This training includes those elements required by the hazard communication 29 CFR 1926.62(l), standard as well as elements specific to the lead standard. Prior to assigning any employee to work in an area with a potential exposure to lead at or above action level, blood must be drawn and tested for lead/ZPP. This must be repeated after exposure. Note foreman shall contact safety department for training and job exposure assessment.

26.9.3. No employee should be exposed to lead at concentrations greater than fifty micrograms per cubic meter of air averaged over an 8-hour period.

26.10. Record Keeping

26.10.1. Records are maintained of all lead monitoring and medical surveillance for Monarch Welding & Engineering, Inc. employees. These records are available upon request to employees, former employees, their designated representatives, MIOSHA and OSHA. All blood test results shall be given to the employee and a copy placed in their personnel file.

26.10.2. Affected employees shall be notified of the results of any monitoring performed within 15 working days, either individually in writing or by posting the results in an appropriate location that is accessible to affected employees. Whenever the results indicate that the representative employee exposure, without regard to respirators, exceeds the permissible exposure limit, in the written notice shall be included a statement that the permissible exposure limit was exceeded and a description of the corrective action taken or to be taken to reduce exposure to or below the permissible exposure limit.

SECTION 27 – Benzene Exposure - Revised 05-17-2016

27.1 Purpose

27.1.1. The purpose of this procedure is to provide basic safety and health information about products containing benzene. Also to establish minimum guidelines and safe work practices for working with these materials. This program shall be revised every 12 months to verify compliance with all appropriate standards.

27.2 Scope

27.2.1 This procedure is in accordance with OSHA final rules "Benzene standard 1910-1028."

27.2.2 The procedure applies to all persons, including escorted visitors and subcontractors.

27.2.3 Subcontractors are required to train their employees to meet the OSHA Benzene standard - 29 CFR, 1910 and 1028 if their work involves potential exposure to Benzene.

27.3 General

27.3.1 Where there is a potential of working with products containing Benzene, the safety director, site supervisor or foreman shall survey the work to be done and specify personal protective equipment required. This information will be noted and relayed to the employees. If the concentration of Benzene is unknown, full personal protective equipment must be worn. All employees who have the potential to be exposed, their supervisor and their Union Representatives shall have access to this plan prior to any potential exposure.

27.4 Definitions

27.4.1 A stream is defined as containing Benzene if it contains as least 0.1% Benzene (volume/volume).

27.4.2 Regulated areas shall be established wherever the airborne concentrations of benzene exceed or can reasonably be expected to exceed the permissible exposure limits, either the short-term exposure limit of 5ppm for 15 minutes or eight hour time weighted average exposure of 1ppm. In the areas deemed, regulated areas, signs must clearly state the areas affected and contain the correct warnings/dangers.

27.4.3 Short-term overexposures are single, one-time exposures without appropriate personal protective equipment, to products containing Benzene.

27.4.4 Long-term overexposure is the average daily (eight hour shift) exposure without personal protective equipment, during the course of a working lifetime.

27.5 Properties of Benzene

27.5.1 Health Hazard Data:

27.5.1.1 Products containing Benzene can affect your health if inhaled, swallowed or if they come in contact with your skin or eyes.

27.5.1.2 Short-term exposures to Benzene may cause a person to feel breathless, irritable, euphoric or giddy; irritation of the eyes, nose and respiratory tract may occur. Persons overexposed may also: develop a head-ache, feel dizzy, nauseated or intoxicated. Severe overexposure may lead to convulsions and loss of consciousness.

27.5.2 Physical Data:

27.5.2.1 Boiling point: 176 degrees Fahrenheit.

27.5.2.2 Specific gravity (water = 1): 0.879

27.5.2.3 Vapor density (air = 1): 2.7.

27.5.2.4 Vapor pressure at 68 degrees Fahrenheit: 75mm Hg.

27.5.2.5 Solubility in water: 0.06%.

27.5.2.6 Evaporation rate (ether=1) 2.8.

27.5.2.7 Appearance: clear, colorless liquid with a distinctive sweet odor.

27.6 Requirements

27.6.1 Safe Work Practices:

27.6.1.1 The following practices, exercises and routines are to be done habitually. General guidelines for working with products containing Benzene are as follows:

27.6.1.2 The pre-job conference job site visit should include determining if Benzene will be encountered. If personal exposure is a potential, ways to reduce or eliminate the exposure must be evaluated.

27.6.1.3 When indicated that there is the potential for Benzene exposure, the appropriate personal protective equipment as described in this procedure shall be listed.

27.6.2 Protective Equipment and Clothing:

27.6.2.1 Respiratory protection:

27.6.2.1.1. One of the following types of respirators must be worn by all personnel entering a temporary regulated area to match the airborne Benzene concentration levels.

27.6.2.2 Airborne Concentration:

27.6.1.1.1. 1-10ppm: Respirator type required is a half face organic air purifier.
27.6.1.1.2. 10-50ppm: Full-face organic vapor air purifying if user has had quantitative fit test.
27.6.1.1.3. Greater than 50ppm: Self-contained breathing apparatus with full face piece in positive pressure mode or airline respirator with full face piece in positive pressure made with escape provisions.
27.6.1.1.4. A half-mask organic vapor/acid gas respirator shall be worn during potential exposures to products containing less than or equal to 10ppm Benzene. Examples of job tasks that may require the use of a respirator include:

- Hand gauging storage tanks that contain products containing benzene.
- Draining and steaming equipment that contains product containing benzene.
- Work inside temporary regulated areas, such as certain process units during shutdown.
- Initial opening of equipment that contained products containing benzene.
- Entry into a vessel that contained products containing benzene.
- Air purifying respirator elements must be changed at the beginning of each work shift or during the work shift if a change in breathing resistance or chemical vapor breakthrough (odor) is detected.

27.6.1.2. Protective Clothing:

27.6.1.2.1. Chemical protective clothing (such as boots, gloves, slicker suits, etc.) shall be worn on any part of the body that could be exposed to liquid streams containing 0.1% or greater benzene.

27.6.1.2.2. Chemical splash goggles or face shields shall be worn whenever handling liquid products containing Benzene.

27.6.1.3. Regulated Areas:

27.6.1.3.1. Draining products containing Benzene, steaming out vessels or pipe containing products containing Benzene and entering a vessel or tank containing products containing Benzene are examples of activities requiring the establishment of temporary regulated areas.
27.6.1.3.2. Self-contained breathing apparatus (SCBA) shall be worn when initial Benzene tests are being conducted in determining establishment of temporary regulated areas.
27.6.1.3.3. A temporary regulated area can be declassified when air sampling proves the permissible exposure limits are no longer exceeded.
27.6.1.3.4. Smoking is prohibited in areas where benzene is used or stored.
27.6.1.3.5. Benzene liquid is highly flammable and vapors may form explosive mixtures in air. Fire extinguishers must be readily available in areas where benzene is used or stored

27.6.2. Engineering Controls:

27.6.3.1. When feasible, engineering controls will be used to minimize exposure to Benzene.

27.6.3. Emergency First Aid Procedures:

27.6.3.1. If liquids are splashed into the eye or face, wash immediately with large amounts of water for at least 15 minutes. Also, seek medical attention.

27.6.3.2. If liquids are spilled on clothing or skin, remove the contaminated clothing and wash the exposed skin with large amounts of water and soap immediately. Seek medical attention. Do not wear contaminated clothing until it has been washed.

27.6.3.3. If large amounts of hydrocarbon vapor are inhaled, move the exposed person to fresh air immediately. Seek medical attention.

27.6.3.4. If liquid hydrocarbons have been swallowed and the person is unconscious, do not induce vomiting. Seek medical attention.

27.6.3.5. Spill, Leak, and Fire Procedure:

27.6.3.5.1. During spill, leaks or fires involving products containing benzene, the source of the release should be remotely isolated if possible.
27.6.3.5.2. The safety/health director shall be notified, and shall conduct additional monitoring and air sampling if deemed necessary.

Temporary regulated areas shall be established and taped off as soon as possible.

27.6.3.5.3. If there is a fire of products containing benzene, you must evacuate.

27.6.3.5.4. Eliminate all sources of ignition containing Benzene spill and evacuate.

27.6.3.5.5. Stay upwind or cross wind of a product containing benzene spill or fires.

27.6.3.5.6. Accidental spills of products containing benzene should be reported to the appropriate authorities immediately.

27.6.3.5.7. Only persons authorized in the spill response should pass through the barrier. Non-essential personnel shall avoid the temporary regulated area to facilitate prompt response by involved parties.

27.6.3.5.8. Any person exposed to benzene during a fire or accidental spill of products containing benzene must undergo urinary phenol testing in accordance with the OSHA Benzene Standard, 1910.1028. The use of personal protective equipment such as respirators or breathing air does not eliminate the need for urinary phenol testing.

27.6.3.5.9. Persons subject to urinary phenol testing must report to the prescribed testing facility by the end of the shift. All samples will be analyzed within 72 hours and the results will be sent to each employee tested.

27.7. Training Requirements

27.7.1. All employees and sub-contractors shall be trained as per 29 CFR 1910.1200(h) (1) and (2) prior to being assigned to a work area containing benzene.

27.7.2. Employees should be aware of owners' contingency plans and provisions. Employees must be informed where benzene is used in the host facility and aware of additional plant safety rules.

27.7.3. This training shall be retrained annually.

SECTION 28 –Cadmium - Revised 05-17-2016

28.1. Purpose

28.1.1. The purpose of this procedure is to provide basic safety and health information about products containing cadmium. This program establishes the minimum guidelines and safe work practices for working with these materials. This program shall be revised every 12 months to verify compliance with all appropriate standards.

28.2. Scope

28.2.1. Applies to all persons, including employees, escorted visitors and subcontractors.

28.3. General

28.3.1. Where there is a potential of working with products containing cadmium, the safety director, site supervisor or foreman shall survey the work to be done and specify personal protective equipment required. This information will be noted and relayed to the employees. If the concentration of cadmium is unknown, full personal protective equipment must be worn. All employees who have the potential to be exposed, their supervisor and their Union Representatives shall have access to this plan prior to any potential exposure.

28.4. Requirements

28.4.1. Safe Work Practices:

28.4.1.1. The following practices, exercises and routines are to be done habitually. General guidelines for working with products containing cadmium are as follows:

28.4.1.1.1. The pre-job conference job site visit should include determining if cadmium will be encountered. If personal exposure is a potential, ways to reduce or eliminate the exposure must be evaluated. When indicated that there is the potential for cadmium exposure, the appropriate personal protective equipment as described in this procedure shall be listed. During the pre-job conference the following should be addressed:

- A review of relevant plans.
- A review of past reports relative to cadmium.
- Material safety data sheets.
- Other available records.
- Consultations with the property owner.

- Discussions with appropriate individuals and agencies

28.4.1.2. Employees' shall not be exposed to an airborne concentration of cadmium in excess of 5 micrograms per cubic meter of air (5 ug/m3), calculated as an eight-hour, time-weighted average (TWA) exposure. "Action level" (AL) means an airborne concentration of cadmium of 2.5 micrograms per cubic meter of air (2.5 µg/m3), calculated as an 8-hour, time-weighted average (TWA).

28.4.1.3. Shall not use employee rotation as a method of compliance.

28.4.1.4. All surfaces shall be maintained as free as practical of the accumulation of cadmium. All spills and sudden releases of material that contains cadmium shall be cleaned up as soon as possible. Surfaces that are contaminated with cadmium shall, where possible, be cleaned by vacuuming or other method that minimizes the likelihood of cadmium becoming airborne.

28.4.1.5. Compressed air shall not be used to remove cadmium from any surface.

28.4.1.6. An employer whose workplace or work operation involves cadmium in any way shall determine if any employee may be exposed to cadmium at or above the action level.

28.4.1.7. An employer shall identify which employees potentially are exposed to cadmium at or above the action level and shall conduct exposure monitoring to determine what the exposure levels are.

28.4.1.8. Determinations of employee exposure shall be made from breathing zone air samples that reflect the monitored employee's regular, daily 8-hour TWA exposure to cadmium.

28.4.1.9. An method shall be used to ensure monitoring and analysis that has an accuracy of not less than plus or minus 25%, with a confidence level of 95%, for airborne concentrations of cadmium at or above the action level, the permissible exposure limit (PEL), and the separate engineering control air limit.

28.4.1.10. If the initial monitoring or periodic monitoring reveals employee exposures to be at or above the action level, then monitoring shall be performed at a frequency and pattern needed to ensure that the monitoring results reflect, with reasonable accuracy, an employee's typical exposure levels given the variability in the tasks performed, work practices, and environmental conditions on the jobsite and to ensure the adequacy of respiratory protection selection and the effectiveness of engineering and work practice controls. If the initial monitoring or the periodic monitoring

indicates that an employee exposure is below the action level and that exposure is confirmed by the results of other monitoring that is performed not less than 7 days later, then an employer may discontinue the monitoring for employees whose exposures are represented by initial or periodic and other monitoring.

28.4.1.11. If monitoring results indicate that employee exposure exceeds the PEL, then a written notice or a statement that the PEL has been exceeded and a description of the corrective action that is being taken by the employer to reduce employee exposure to or below the PEL. Employees will be required to utilize the appropriate respiratory protection and PPE as determined by a competent person.

28.4.1.12. A regulated area shall be established if an employee's exposure to airborne concentrations of cadmium is, or can reasonably be expected to be, in excess of the permissible exposure limit (PEL). Regulated areas shall be demarcated from the rest of the workplace in any manner that adequately establishes, and alerts employees to, the boundaries of the regulated area. Access to regulated areas shall be limited to authorized persons. Each person who enters a regulated area shall be supplied with, and required to use a respirator. Employees shall not eat, drink, smoke, chew tobacco or gum, or apply cosmetics in a regulated area; carry the products associated with these activities into a regulated area; or store such products in a regulated area. Regulated areas shall have signs posted stating that the area contains cadmium and the appropriate warning hazards.

28.4.1.13. Eight-hour TWA exposures shall be determined for each employee on the basis of 1 or more personal breathing zone air samples that reflect a full shift of exposure on each shift, for each job classification, in each work area. Where several employees perform the same job tasks, on the same shift, and in the same work area and the length, duration, and level of cadmium exposures are similar, a sample may be a representative fraction.

28.4.1.14. Exposure monitoring is required when any of the following situations occur:

28.4.1.14.1. There has been a change in the raw materials, equipment, personnel, work practices, or finished products that may result in additional employees being exposed to cadmium at or above the action level.

28.4.1.14.2. An employee who is presently exposed to cadmium at or above the action level becomes exposed above the PEL.

28.4.1.14.3. An employer or competent person has any reason to suspect that any other change might result in an additional exposure

28.4.1.15. If ventilation is used to control cadmium exposure, measurements that demonstrate the effectiveness of the system in controlling exposure, such

as capture velocity, duct velocity, or static pressure, shall be made as necessary to ensure the ventilation system's effectiveness. Measurements of the system's effectiveness in controlling exposure shall be made as necessary within 5 working days of any change in production, process, or control that might result in a significant increase in employee exposure to cadmium. If air from exhaust ventilation is re-circulated into the workplace, the system shall have a high-efficiency filter and be monitored to ensure effectiveness. Recirculation of local exhaust air shall be in compliance with the provisions of occupational health rule 3101(10).Procedures shall be developed and implemented to minimize employee exposure to cadmium when maintenance is performed on the ventilation systems and when filters are changed.

28.4.1.16. If an employee is exposed to airborne cadmium above the PEL or if skin or eye irritation is associated with cadmium exposure at any level, then the appropriate PPE will provided, at no cost to the employee, and will ensure that the employee uses, appropriate protective work clothing and equipment that prevents contamination of the employee and the employee's garments. Protective work clothing and equipment includes all of the following:

28.4.1.16.1. Coveralls or similar full-body work clothing.
28.4.1.16.2. Gloves, head coverings, and boots or foot coverings.
28.4.1.16.3. Face shields, vented goggles, or other appropriate protective equipment that is in compliance with the provisions of R 408.13301 et seq. of the Michigan Administrative Code.

28.4.1.17. Clean change-rooms, hand-washing facilities, showers, and lunchroom facilities shall be provided that are in compliance with the provisions of occupational health rule 4201 for general industry or occupational health rule 6615 for the construction industry for employees whose airborne exposure to cadmium is above the PEL.

28.4.1.17.1. Employees shall remove all protective clothing and equipment that is contaminated with cadmium at the completion of the work shift and do so only in change rooms that are provided.
28.4.1.17.2. Contaminated protective clothing and equipment, when removed for laundering, cleaning, maintenance, or disposal, is placed and stored in sealed, impermeable bags or other closed, impermeable containers that are designed to prevent the dispersion of cadmium dust.
28.4.1.17.3. Bags or containers of contaminated protective clothing and equipment that are to be taken out of the change rooms or the workplace for laundering, cleaning, maintenance, or disposal bear labels in accordance with the provisions of R 325.51879(3).
28.4.1.17.4. Protective clothing is to be laundered at least once per week.

28.4.1.17.5. Change rooms are to be equipped with separate storage facilities for street clothes and for protective clothing and equipment which are designed to prevent the dispersion of cadmium and contamination of the employee's street clothes.

28.4.1.17.6. Employees who are exposed to cadmium above the PEL shower during the end of the work shift.

28.4.1.18. All medical determinations including: surveillance, monitoring and work removal will be in accordance with MIOSHA part 309.

28.4.2. Training

28.4.2.1. A training program shall be instituted for all employees who may be exposed to cadmium, assure employee participation in the program, and maintain a record of the contents of the program. Employee training shall be provided before or at the time of initial assignment to a job that involves potential exposure to cadmium and at least annually thereafter.

28.4.2.2. A training program shall be established so that it is understandable to the employee and shall ensure that each employee is informed of all of the following:

28.4.2.2.1. The health hazards associated with cadmium exposure, with special attention to the type of information provided in appendix A.

28.4.2.2.2. The quantity, location, manner of use, release, and storage of cadmium in the workplace and the specific nature of operations that could result in exposure to cadmium, especially exposure above the PEL.

28.4.2.2.3. The engineering controls and work practices associated with the employee's job assignment.

28.4.2.2.4. The measures employees can take to protect themselves from exposure to cadmium, including modification of smoking and personal hygiene habits, and the specific procedures the employer has implemented to protect employees from exposure to cadmium, such as appropriate work practices, emergency procedures, and the provision of personal protective equipment.

28.4.2.2.5. The purpose, proper selection, fitting, proper use, and limitations of respirators and protective clothing.

28.4.2.2.6. The purpose and a description of the medical surveillance program required pursuant to the provisions of R 325.51868 to R 325.51878.

28.4.2.2.7. The contents of these rules and the appendices to these rules.

28.4.2.2.8. The employee's right of access to records as provided by the provisions of R 325.3460 to R 325.3471 and R 325.3473.

28.4.3. Record Keeping

28.4.3.1. All of the following provisions pertain to records of exposure monitoring:

28.4.3.1.1. An employer shall establish and keep accurate records of all air monitoring for cadmium in the workplace.

28.4.3.1.2. Air monitoring records shall include, at a minimum, all of the following information:

- The monitoring date, shift, duration, and results in terms of an 8-hour TWA of each sample taken and, if cadmium is not detected, the detection level.
- The name, social security number, and job classification of all employees who are monitored and of all other employees whose exposures the monitoring result is intended to represent, including, if applicable, a description of the justification that monitoring results of 1 employee can represent other employees' exposures.
- A description of the sampling and analytical methods used and evidence of their accuracy.
- The type of respiratory protective device, if any, worn by the monitored employee and by any other employee whose exposure the monitoring result is intended to represent.
- A notation of any other conditions that might have affected the monitoring results.
- Any exposure monitoring or objective data that were used and the exposure levels obtained.

28.4.3.1.3. Monarch shall provide a copy of the results of an employee's air monitoring prescribed in R 325.51854 and R 325.51855 to an industry trade association and to the employee's union, if any. If neither the association nor the union exists, monitoring results shall be furnished to another comparable organization which is competent to maintain such records and which is reasonably accessible to employers and employees in the industry. Employees will receive a copy of all of their blood tests. Monarch will keep all medical information on file for a period in accordance with 1910.1020.

SECTION 29 – Naturally Occurring Radioactive Material – Revised 05-17-2016

29.1. As a corporation we do not work in areas that have naturally occurring radioactive material. If in the future we need to work in these types of areas, a proper policy, procedures and training program will be developed.

SECTION 30 - Occupational Noise Exposure - Revised 05-17-2016

30.1. Purpose

30.1.1. The policy is set forth to reduce employee occupational noise exposure and to prevent loss of hearing from overexposure.

30.2. Scope

30.2.1. All Monarch Welding & Engineering, Inc employees, subcontractors, and escorted visitors.

30.2.2. This is written in accordance with OSHA CFR 1910.95 Appendix A- I and MIOSHA R 325.60101 to R 325.60128 of the occupational health standards.

30.3. Training

30.3.1. This training program shall be provided for all employees who are exposed to the action level noise. Employees shall receive training initially and shall be repeated annually for each employee. Training shall be updated consistent to changes in PPE and work processes. Monarch shall make available to affective employees copies of the noise exposure procedures and shall post a copy in the work place. Monarch shall also allow the assistant secretary and the director access to records.

30.3.2. The action level for noise exposure, which for this policy is 85 dba during an 8-hour time-weighted average basis.

30.3.3. Employees will receive training on specific noise environment in which the hearing protection will be used and how to properly maintain the protector.

30.4. Hearing Conservation Program

30.4.1. Assessment

30.4.1.1. When information indicates that employee may equal or exceed the action level (85 dba during an 8-hour time-weighted average basis) a monitoring program shall be developed and implemented. Sampling strategy will be designed to identify employee to be included in the hearing conservation program. This strategy will also assist in the proper selection of hearing protection.

30.4.2. Instrumentation

30.4.2.1. Instruments must be calibrated to insure accuracy of the measurement. All sound levels from 80 to 130 decibels shall be integrated into the measurement.

30.4.3. Audiometric Testing

30.4.3.1. If it is determined that an employee has been exposed to noise at or above the action level the employee will arrange within 6 months, at no cost to the employee, audiometric testing to establish a base line audiogram. This testing shall be done as prescribed in OSHA 1910.95, Sec. 3g, and Parts 1 - 7.

30.4.3.2. **Note:** Baseline audiogram must be done after a minimum 14 hour without work place noise exposure.

30.4.4. Standard Baseline Shift

30.4.4.1. Employees will be notified of a standard baseline shift within 21 days. This will be done in writing.

30.4.4.2. Yearly re-evaluation by physician to determine if the shift is work related or aggravated by occupational noise exposure. Employees will be notified of the standard baseline shift within 21 days. This will be done in writing.

30.4.4.3. Hearing protection shall be re-evaluated to assure that it is adequate for noise levels. Employees will be retrained in the proper use and fitting of hearing protection.

30.4.4.4. The employee shall be informed that a medical evaluation may be required.

30.5. Hearing Protection

30.5.1. Hearing protection shall be made available, at no cost, for employees required to work in areas where the noise level is equal or exceeds the action level.

30.5.2. All supervision shall ensure that hearing protection is being worn when needed.

30.5.3. Training in the use, fit, and care of hearing protection will be provided to all employees required to use it.

30.5.4. If threshold shift has occurred, use of hearing protection shall be re-evaluated and /or refitted and if necessary an medical evaluation may be required.

30.6. Recordkeeping

30.6.1. Records shall be kept of any sampling used to determine noise levels, equipment calibration records, audiometric testing and any training for the effects of noise, use of hearing protection and its care.

30.6.2. These records, other than audiometric testing will be retained, as required by the regulation. Audiometric testing records shall be retained for the duration of the employee's employment.

30.6.3. Access to an employee's record by them or a designated representative will be allowed within 15 days of receipt of a written request.

SECTION 31 - Incident Reporting& Investigation - Revised 05-17-2016

31.1. Purpose

31.1.1. To prevent the recurrence of hazardous situations. Hazardous situations are those situations that cause or have the potential to cause an injury/illness, fire, release of a hazardous or flammable material, a spill, damage to property or equipment, unit down time or a break in the overall safety.

31.2. Reference

31.2.1. 29 CFR 1910.119, Section (M) Incident Investigation.

31.3. Scope

31.3.1. This procedure defines the requirements for reporting and investigating injuries/illnesses and incidents at the Monarch Welding & Engineering, Inc. and includes the following:

31.3.1.1. Requirements for reporting and investigating accidents.

31.3.1.2. Investigatory categories that identify the level of fact-finding for incidents.

31.3.1.3. Time frames that the initial investigation reports form must be completed by.

31.3.1.4. Personnel identified to participate on the Investigation Team.

31.3.1.5. Items that must be included in the final written investigation report.

31.4. Reporting Requirements

31.4.1. Monarch Welding & Engineering, Inc. Injuries/Occupational Illnesses

31.4.1.1. All injuries and illnesses shall be reported to the foreman or site supervisor immediately.

31.4.1.2. The foreman/site supervisor will inform the Safety and Health Director as soon as possible.

31.4.1.3. The immediate foreman/site supervisor directs the employee to the approved medical facility for treatment.

31.4.1.4. If the employee is unable to be moved and/or the injury appears to be life threatening, the foreman/site supervisor must call the Safety and Health

Director immediately. Give the location and state the nature of the injuries. Should the injury occur when none of the above is available, the foreman/site supervisor will contact 911 and the Safety and Health Director.

31.4.1.5. First aid responders shall provide first aid. All others provide these services as good Samaritans only.

31.4.1.6. If the injury/illness is work-related the Occupational Injury/Illness (OI&I) Report, (see Attachment A) must be completed. The Safety and Health Director fill out the lower sections.

31.4.1.7. OI & I data entry (including signatures) shall be completed within two (2) working days of the occurrence by the foreman/Safety and Health Director.

31.4.1.8. A medical treatment authorization form (see Attachment B) must be completed by the employee's foreman/site supervisor if the employee is sent to the hospital or clinic.

31.4.1.9. It is the Safety and Health Director's responsibility to communicate with the treating physician to determine the employee's fitness for duty. During the communication, the Safety and Health Director should request the physician provide written work restrictions so a determination for return-to-work under light duty and the date when the employee may return to normal work duties may be made.

31.4.1.10. It is the employee's responsibility to follow the instructions of the treating physician during the course of follow-up treatments. All written notes from the physician shall be given to the Safety and Health Director.

31.4.1.11. The employee's file shall include written updates reflecting current work standing with regard to lost workdays. These shall be entered into the OI & I system on a monthly basis.

31.4.1.12. Each recordable injury or illness must be entered on an OSHA 300 Log and 301 Incident Report, or other equivalent form, within seven (7) calendar days of receiving information that a recordable injury or illness has occurred.

31.4.1.13. A company executive must certify that he or she has examined the OSHA 300 Log and that he or she reasonably believes, based on his or her knowledge of the process by which the information was recorded, that the annual summary is correct and complete.

31.4.1.14. A company executive must certify that he or she has examined the OSHA 300 Log and that he or she reasonably believes, based on his or her knowledge of the process by which the information was recorded, that the annual summary is correct and complete.

31.4.1.15. A copy of the annual summary must be posted in each establishment in a conspicuous place or places where notices to employees are customarily posted. You must ensure that the posted annual summary is not altered, defaced or covered by other material.

31.4.1.16. The annual summary must be posted no later than February 1st of the year following the year covered by the records and the posting kept in place until April 30th.

31.4.1.17. The OSHA 300 Log, the privacy case list (if one exists), the annual summary, and the OSHA 301 Incident Report forms must be retained for five (5) years following the end of the calendar year that these records cover.

31.4.2. Incidents/Near Misses

31.4.2.1. In the event of an incident or near miss, the foreman/site supervisor should immediately conduct a preliminary investigation.

31.4.2.2. The employee involved in the incident accompanies the immediate site supervisor, if possible, in the investigation.

31.4.2.3. The foreman/site supervisor and the employee complete the Initial Investigation Report form. The end of the shift must complete the form. The site supervisor is responsible for the area where the incident occurred reviews the report for accuracy and completeness, signs the form and sends the report to the Safety and Health Director, where a decision is made to determine if further investigation is required.

31.4.2.4. The original report is kept on file by the Safety Department.

31.4.3. Contractor Injuries and Incidents

31.4.3.1. In the event of an injury/incident or near miss involving contractors, the Contractor foreman/site supervisors must conduct a preliminary investigation and complete the Incident Investigation Report by the end of the shift. The site supervisor is responsible for the area where the incident occurred, reviews the report for accuracy and completeness, signs the form, and sends the report to the Safety and Health Director, where a decision is made to determine if further investigation is required.

31.4.3.2. If the event involved a contractor injury or illness, the contractor foreman/site supervisor must submit a completed copy of their injury/illness report to the Safety Department the following day.

31.5. Investigation Requirements

31.5.1. All injury/illness and incidents fall in one or two categories for investigation. The investigatory category identified will determine the level of investigation as follows:

Category 1: Events that should be documented and may require additional department-level fact-finding	**Response:** • Document event via initial investigation form or. • Fill out an accident form(s) for injury, • Notify staff, and • Decision by staff to conduct a formal team investigation
Category 2: Events that should be documented and warrant an investigation	**Response:** • Document event via the initial investigation form or, • Fill out an accident form(s) for an injury, • Notify staff, and • Decision by staff to conduct a formal team investigation

31.5.2. All investigations must be initiated as promptly as possible as but not later than 48 hours following the incident.

31.5.3. Required incidents must be verbally reported to OSHA within 8 hours of their discovery. Incidents must also be reported to the owner client as soon as possible or in a timely manner (within 24 hours of incident).

31.5.4. Personnel must be trained in their roles and responsibilities for incident response and incident investigation techniques. Training requirements relative to incident investigation and reporting (Awareness, First Responder, Investigation, and training frequency) should be identified in the program.

31.5.5. Equipment may include some or all of the following items; writing equipment such as pens/paper, measurement equipment such as tape measures and rulers, cameras, small tools, audio recorder, PPE, marking devices such as flags, equipment manuals, etc.

31.5.6. Initial identification of evidence immediately following the incident might include a listing of people, equipment, and materials involved and a recording of environmental factors such as weather, illumination, temperature, noise, ventilation, etc.

31.5.7. Evidence such as people, positions of equipment, parts, and papers must be preserved, secured, and collected through notes, photographs, witness statements, flagging, and impoundment of documents and equipment.

31.5.8. Each investigation team must be made up of at least the Safety and Health Director, site supervisor and the foreman.

31.5.8.1. A contract employee, if the incident involved the work of a contractor.

31.5.8.2. Other persons with the appropriate knowledge and experience to thoroughly investigate and analyze the incident.

31.5.9. The investigation report must address and shall report the following:

31.5.9.1. Date of the incident.

31.5.9.2. Date investigation began.

31.5.9.3. Nature of the incident.

31.5.9.4. Contributing factors.

31.5.9.5. Corrective actions.

31.5.9.5.1. Corrective actions (most extreme) could include termination of employment pending on the investigation report.

31.5.9.5.2. Corrective actions (least extreme) could introduce a new PPE for that job.

31.5.10. The Chairman for the Safety Committee is responsible for coordinating investigations of incidents as described below:

31.5.10.1. If a formal investigation is required, an Investigation Team will be assigned. The safety committee assigns the investigation to the Team Leader and notifies them of the additional team members.

31.5.10.2. The Investigation Team Leader co-ordinates a preliminary meeting with the Investigation Team to review the incident site and the reporting form. A site inspection is completed, interviews are conducted and data is gathered as defined by the Investigation Team Leader. The preliminary meeting should be conducted the day the Investigation Team is assigned.

31.5.10.3. Following the gathering of the required information, a review meeting is co-coordinated by the Team Leader for a review of the information. The Investigation Team will discuss the information and draft an investigation report.

31.5.10.4. The draft of the Incident Report is reviewed with the Investigation Team and the Chairman and modified as required.

31.5.10.5. The draft of the Incident Report is presented to Management Staff by the Chairman and modified as required.

31.5.10.6. The report is revised as required by the Team Leader and submitted to the Chairman.

31.5.10.7. The chairman for each posted Investigation Report develops an Investigation Follow-Up Status Report. The subcommittee reviews the status of the recommendations until all recommendations are addressed.

31.5.10.8. Subcommittee meetings will be scheduled to briefly review the status of investigations and follow-up reports.

31.5.11. Lessons learned should be reviewed and communicated. Changes to processes must be placed into effect to prevent reoccurrence or similar events.

31.5.12. Incident Investigation Reports are retained by the Safety Department for five (5) years.

SECTION 32 – Return to Work Program - Revised 05-17-2016

32.1. Statement Of Policy

32.1.1. It is our prime objective to return the injured worker to productive employment as soon as possible. The Restricted Work Activity Program has been designed for employees who are temporarily or partially disabled due to work related injuries. These employees can return to work in a restricted capacity before they are able to return to work to their normal duties.

32.1.2. This temporary assignment will allow the employee to continue medical treatment and rehabilitation therapy while attending work. The work being performed is restricted work within position guidelines. It is very important that the restrictions be followed closely so that they can be lifted as soon as possible.

32.1.3. During the restricted period of activity, payroll levels will be reviewed by management, and where indicated, adjustments of rate will be affected. This is solely at the opinion of management, and such criteria as availability of substitute work, extent of rehabilitation, and professional assessment by attending physician of duration and/or diminishment of abilities, etc. will all be utilized to determine payroll level. Workers Compensation benefits and payroll may be coordinated according to the situation.

32.1.4. The Company physician as well as a physician of the employee's choice will examine the employee.

32.1.5. Both physicians will submit a detailed report of the employee's injuries along with the physician's recommendation for returning to work in either a restricted work capacity or a normal capacity.

32.1.6. Work duties will be established in accordance with positions imposed restrictions and work that is available.

32.1.7. Written (only) responses from physicians are necessary for communicating a medical release to return to work and/or physical restrictions after return to work.

SECTION 33 – Disciplinary Program – Revised -05-17-2016

TO: All New Employees **(note: please keep the first 3 pages, return the remaining forms)**

New Employee Orientation Manual

Monarch Welding & Engineering, Inc. welcomes you as a member of our team. To maintain a safe and productive work environment, it is important for you as an employee of Monarch Welding & Engineering, Inc. to read and understand the provided policies. It is the responsibility of all Supervisory Personnel at Monarch Welding & Engineering, Inc. to enforce these policies.

A. Safety & Quality Policy

It is our goal to perform work on this project in a safe and productive environment, maintaining quality work on time and within budget. We recognize and believe the Building Trades Craftsperson, Engineering, Management and Supervision, together, must create the proper attitude towards quality and safety. It is of prime importance that each employee understands our goals and feels free to offer any suggestion, which may help the project in achieving a safe productive environment. Please direct any suggestions or inquiries to your supervisor.

B. Equal Employment Opportunity / Affirmative Action Program Policy

Monarch Welding & Engineering, Inc. will not discriminate against any employee or applicant for employment because of race, religion, color, gender, age, disability, veteran status or national origin. This policy shall be applicable to employment, promotion, demotion, transfer, layoff or termination, rates of pay or other forms of compensation and selection for training (including apprenticeship, pre-apprenticeship and/or on-the-job-training). We will also support contractor organizations in their efforts to bring more people of minority groups into construction trades.

C. Sexual Harassment Policy

Monarch Welding & Engineering, Inc will not tolerate sexual harassment and unlawful employment discrimination. We will investigate every complaint of unlawful discrimination and sexual harassment. It is the duty of every employee to cooperate in any such investigation and it would constitute a serious infraction of our policy to retaliate against or penalize an employee for asserting a claim of discrimination or sexual harassment. Any employee found to have sexual harassed or retaliated against an employee for making a complaint of discrimination or sexual harassment will be subject to discipline up to and including immediate dismissal. A complaint procedure is in place. Please report your complaint within 24 hours to your supervisor or call our Employment Practices Officer Allen Beeuwkus at: 586-754-5400.

D. Substance Abuse Policy

Monarch Welding & Engineering, Inc. is serious about maintaining a safe work environment. As a result, employees are prohibited from misusing legal drugs, or the use, manufacture possession, distribution and/or sale of illicit or controlled substances, while on company premises, or company business, or while in a company supplied vehicle. Prohibited from the possession, use, distribution, and/or sale of alcoholic beverages while on company premises, on company business, or in company supplied vehicles. Prohibited from the storage of any controlled substance, illegal drug or alcohol on company premises, in a company owned receptacle or vehicle.

E. Safety Rules and Regulations / Disciplinary Policy

The safety rules are general in nature and must be adapted to each job as needed. These rules and regulations are meant to be guidelines to follow and are meant to be used in conjunction with all with all federal, state, city, OSHA,

MIOSHA, and owner rules and regulations. It shall be the responsibility of the General Foreman, Foreman and Safety Representative to insure compliance with these rules. All violations (verbal or written) will be recorded. Violations of a life threatening nature (i.e. failure to tie-off while working above 4' from working surface or violation of tagging/ lock out tag out, ect.) will be grounds for immediate dismissal. Other violations may lead to dismissal, dependent upon severity and attitude. Any employee who receives a maximum of 2 violations shall be removed from site and is not subject for rehire for a period of 30 days. A list of our safety rules is as follows:

Safety Rules:

1. Report all incidents or near misses immediately to your supervisor.
2. Mobil phones/devices are NOT allowed on the job. Leave all mobile phones/devices in the break room or lunch box. These types of devises are distractions on the job and are a safety hazard. The foremen are the only personnel permitted to carry mobile phone for emergency purposes.
3. Monarch Welding fall protection policy is required at 4 feet.
4. Follow all safety instructions for the proper use of hand and power tools.
5. Wear the proper PPE per the JSA requirements when performing a job task.
6. Wear eye protection, ear protection, and hard hats at all times.
7. Familiarize yourselves with the site specific safety rules and regulations of the specific job site.
8. Follow all labels and safety instructions when using chemicals.
9. Keep your work area clean.
10. Report unsafe conditions to your supervisor.
11. Report defective tools and equipment to your supervisor.
12. Keep your mind on your work at all times. No horseplay on the job. Injury or termination or both can be the result.
13. Pay attention to where you are walking at all times on the job, and to and from the parking lot. Many hazards exist like trip hazards, open holes, snow and ice. Don't run.
14. The use of illegal drugs or alcohol or being under the influence on the job, shall be cause for dismissal.
15. Never move an injured person unless it is absolutely necessary. Further injury may result. Keep the injured as comfortable as possible and utilize job site first-aid facilities until emergency personnel arrive.
16. Know where fire extinguishers are located and learn how to use it.
17. Lift correctly - with your legs, not your back. If the load is too heavy get help! Twenty percent of all construction-related injuries result from lifting heavy materials.
18. Committing or threatening any act of violence, engaging in fighting, brawling, or disorderly conduct will be subject to immediate disciplinary action up to and including dismissal.

19. Behavior that interferes with or discriminates against other employees, including intimidation, coercion or harassment of any nature will not be tolerated and be subject to immediate disciplinary action up to and including dismissal.

20. Failure to comply with owner safety, security or project specific rules, regulation or requirements, will be subject to immediately disciplinary action up to and including dismissal.

21. Failure to comply with Monarch Welding & Engineering, Inc. safety rules will be subject to immediate disciplinary action up to and including dismissal.

22. Work safe for YOURSELF and your family.

F. Project Attendance Policy

Your attendance is needed to make this project a success. Absenteeism, poor or irregular attendance will not allow us to meet our customer's schedule and provide a negative impression of Monarch Welding & Engineering, Inc., our craft personnel; as well as, your trade. To maintain our attendance expectations, we will be monitoring attendance infractions on a rolling 30-day window. Infractions are: Absent, Late and Early Quits. This includes scheduled overtime, Saturdays and Sundays. Exceptions are pre-approved time off, doctor's slip and rainouts. Two (2) infractions in the 30-day window period will result in a verbal warning by the Company Representative with a memo to file. The third (3rd) infraction will result in termination, eligible for rehire after 30 days. Absent for two (2) consecutive days without proper notification will result in termination.

Absentee Notification Procedure

In the event an employee is going to be absent from work for whatever reason, the employee is required to call and notify the Company of their absence. Notification shall be prior to the start of the scheduled shift. The employee shall state name, foreman's name and reason for absence. Whenever possible, complete this form prior to attendance discrepancies and retain a signed copy for your protection. The absentee notifications phone number is _____.

Employee's Name: _____
Foreman's Name: _____
Notification Reason: _____
Notification Date: _____Notification Time: _____
Monarch Supervisor's Name: _____
Monarch Supervisor's Signature:_____Date: _____

Employee's Signature: _____Date: _____

G. Employee Acknowledgement and Signature Form

This is to acknowledge that you have received a copy of the following Policies:

A. Safety & Quality Policy
B. Equal Employment Opportunity / Affirmative Action Program Policy
C. Sexual Harassment Policy
D. Substance Abuse Policy
E. Safety Rules and Regulations / Disciplinary Policy
F. Project Attendance Policy

Do you have any medical or physical restrictions that must be accommodated?

- ❑ No
- ❑ Yes **(Note to Monarch Representative: If yes, contact office for an employee evaluation)**

If yes, please describe work restrictions: _____

Employee Name: _____ Hire Date: _____
Social Security #: _____ Birth Date: _____
Home Phone#_____Cell Phone#_____Shift
Trade Union: _____ If Apprentice, %: _____
Emergency Contact Person: _____ Phone # for Contact: _____
Allergies to Medication: _____

Employee Signature: _____ Date: _____

Monarch Representative Signature: _____ Date: _____

(Note to Monarch Representative: This form is to be signed by the employee, witnessed by a Monarch Representative, and placed in the employee's file.)

H. Attachments

The attached federal and state forms need to be properly completed to accurately process payroll: W4, MI-W4, I-9 and M-3281.

You are a very important member of the team, welcome aboard!

Sincerely,
MONARCH WELDING & ENGINEERING, INC.

Brian Wimmer
President

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SECTION 34 – Subcontractors – Revised 05-17-2016

34.1. Purpose

34.1.1. The purpose of this program is to ensure that sub-contractors are in compliance with all Monarch Welding and Engineering safety policies and shall obey all site-specific policies as well.

34.2. Scope

34.2.1. All approved sub-contractors, guests and visitors of Monarch Welding and Engineering.

34.3. General

34.3.1. Monarch Welding and Engineering (MWE) is responsible for the overall safety of all personal that is brought onto a job site as being a general contractor. Because of our responsibility, we require that all sub-contractors:

34.3.1.1. Have a written safety manual.

34.3.1.2. Annually fill out Contractor Qualification Form and be approved.

34.3.1.3. Have an EMR of 1.0 or less.

34.3.1.4. Train employees to all applicable safety requirements.

34.3.1.5. Perform periodic safety audits of job site, safety manual and incidents rates.

34.3.1.6. Inform MWE General Foreman of any safety related issues which arise including injuries.

34.3.1.7. Shall follow all MWE safety policies/procedures and also owner's site specific.

34.3.2. MWE on-site management and superintendents shall be responsible for ensuring that all sub-contractors are in compliance with all federal, state, local and site specific safety rules.

34.3.3. All subcontractors will be included in pre-job meetings or kick-off meetings, and safety orientations.

34.3.4. Subcontractors will be included in tailgate safety meetings, job safety analysis or hazard assessments, and on the job safety inspections.

34.3.5. Subcontractors will be included in the post-job safety performance review.

34.3.6. If any Monarch employee notices a safety violation, they shall inform the foreman who shall then in turn notify the Safety Department.

34.3.7. The Safety Department shall address all safety related-issues with sub-contractor management in conjunction will all Monarch management as needed.

SECTION -35 –Tools – Hand and Power – Revised 05-17-2016

35.1. Hazards

35.1.1. Workers using hand and power tools may be exposed to these hazards:

35.1.1.1. Dropping the tool in use on others working below.

35.1.1.2. Objects that fall, fly, are abrasive, or splash

35.1.1.3. Harmful dusts, fumes, mists, vapors, and gases

35.1.1.4. Frayed or damaged electrical cords, hazardous connections and improper grounding

35.2.Basic Tool Safety Rules

35.2.1. Keep tools secured when working above others. (tool lanyards, rope, etc.)

35.2.1.1. Maintain regularly

35.2.1.2. Use right tool for the job

35.2.1.3. Inspect before use

35.2.1.4. Operate according to manufacturers' instructions

35.2.1.5. Use the right personal protective equipment (PPE)

35.2.1.6. Use guards

35.3.Hand Tools

35.3.1. Hazards

35.3.1.1. Hazards are usually caused by misuse and improper maintenance Do not use:

35.3.1.1.1. wrenches when jaws are sprung
35.3.1.1.2. impact tools (chisels and wedges) when heads have mushroomed
35.3.1.1.3. tools with loose, cracked or splintered handles
35.3.1.1.4. a screwdriver as a chisel
35.3.1.1.5. tools with taped handles – they may be hiding cracks

35.3.2. Protection

35.3.2.1. Use PPE, such as safety goggles and gloves

35.3.2.2. Keep floor surface where working free from debris and tripping or slipping hazards

35.3.2.3. Keep cutting tools sharp

35.3.2.4. Keep tools secured when working above others. (tool lanyards, rope, etc.)

35.4.Power Tools

35.4.1. Shall be maintained in a safe condition

35.4.2. Must be fitted with guards and safety switches

35.4.3. Extremely hazardous when used improperly

35.4.4. Different types of tools, determined by their power source:

35.4.4.1. Electric

35.4.4.2. Pneumatic

35.4.4.3. Liquid fuel

35.4.4.4. Hydraulic

35.4.4.5. Powder-actuated Switches

35.5. Power Tools – Precautions

35.5.1. Electric Cords

35.5.1.1. Don’t carry portable tools by the cord

35.5.1.2. Don’t use electric cords to hoist or lower tools

35.5.1.3. Don’t yank cord or hose to disconnect it

35.5.1.4. Keep cords and hoses away from heat, oil, and sharp edges

35.5.2. Electric Tools – Good Practices

35.5.2.1. Abrasive Wheels and Tools may throw off flying fragments and equipped with guards that:

35.5.2.1.1. Cover the spindle end, nut, & flange projections
35.5.2.1.2. Maintain proper alignment with the wheel
35.5.2.1.3. Don't exceed the strength of the fastenings
35.5.2.1.4. Guard shall be in place when in use, so that a minimal amount of the wheel is exposed

35.5.2.2. Inspecting Abrasive Wheels

35.5.2.2.1. Before mounting:

- Disengage the power tool from the power source
- Inspect closely for damage
- Perform sound- or ring-test to ensure free from cracks / defects

35.5.2.2.2. To test:

- tap wheel gently with a light, non-metallic instrument
- if wheel sounds cracked or dead, do not use it because it could fly apart

35.6. Abrasive Wheel Use

35.6.1. Abrasive Wheel Work Rests

35.6.1.1. Keep work rests not more than 1/8th inch from wheel surface This prevents jamming the work between the wheel and the rest, which may cause the wheel to break

35.6.1.2. Don't adjust wheel while it's rotating

35.7. Guarding

35.7.1. Guard exposed moving parts of power tools

35.7.2. Guard belts, gears, shafts, pulleys, sprockets, spindles, flywheels, chains, or other moving parts

35.7.3. Never remove a guard when a tool is in us

35.8. Guarding - Point of Operation

35.8.1. Machine guards must protect the operator and others from:

35.8.1.1. Point of operation

35.8.1.2. In-running nip points

35.8.1.3. Rotating parts

35.8.1.4. Flying chips and sparks

35.9. Radial Saw Guarding

35.9.1. Guarding Portable Circular Saws

35.9.2. Table Saw Guarding

35.10. Pneumatic Tools

35.10.1. Pneumatic Tools – Fastening

35.10.2. Ensure tool is fastened securely to the air hose to prevent a disconnection

35.10.3. Use a short wire or positive locking device attaching the air hose to the tool

35.11. Pneumatic Tool Safety

35.11.1. Place a safety device on the muzzle to prevent the tool from ejecting fasteners, unless the muzzle is in contact with work surface

35.11.2. Install a safety clip or retainer to prevent attachments, such as chisels on a chipping hammer, from being ejected

35.11.3. Wear eye protection. Wear hearing protection with jackhammers.

35.12. Compressed Air Cleaning

35.12.1. Don't use compressed air for cleaning

35.12.1.1. Exception - where reduced to less than 30 p.s.i. with effective chip guarding and PPE

35.13. Liquid Fuel Tools

35.13.1. Usually gas powered

35.13.2. Main hazard – fuel vapors

35.13.3. Use only approved flammable liquid containers

35.13.4. Before refilling a fuel-powered tool tank, shut down the engine and allow it to cool

35.14. Powder-Actuated Tools

35.14.1. User must be trained and licensed to operate

35.14.2. Test tool each day before loading to ensure the safety devices are working properly

35.14.3. Wear suitable ear, eye, and face protection

35.14.4. Select a powder level that will do the work without excessive force

35.15. Powder-Actuated Tool Safety Tips

35.15.1. User must be trained and licensed to operate

35.15.2. Test tool each day before loading to ensure the safety devices are working properly

35.15.3. Wear suitable ear, eye, and face protection

35.15.4. Select a powder level that will do the work without excessive force

35.16. Powder-Actuated Tool Safety Tips

35.16.1. Don't use in explosive or flammable atmosphere

35.16.2. Inspect tool before use to ensure:

35.16.2.1. it is clean,

35.16.2.2. that moving parts operate freely

35.16.2.3. the barrel is free from obstructions and has the proper shield, guard, and attachments

35.16.3. Don't load the tool unless using immediately

35.16.4. Don't leave a loaded tool unattended

35.16.5. Keep hands clear of the barrel end

35.16.6. Never point the tool at anyone

35.16.7. Store unloaded in a locked box

35.17. Any tool which is not in compliance with any of these requirements is prohibited and shall be identified as unsafe by tagging or locking the controls to keep it inoperable. Tag the tools and return to our shop for repair and /or replacement.

35.18. Summary

35.18.1. Hazards are usually the result of improper tool use or not following one or more of these protection techniques:

35.18.1.1. Keep tools secured when working above others. (tool lanyards, rope, etc.)

35.18.1.2. Inspecting the tool before use

35.18.1.3. Using PPE (Personal Protective Equipment)

35.18.1.4. Using guards

35.18.1.5. Properly storing the tool

35.18.1.6. Using safe handling techniques

SECTION – 36 - Hazard Identification and Risk Management – Revised 05-17-2016

36.1. Purpose

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

36.1.2. Safety demands a commitment from all personnel within our organization. As a contractor, we have an obligation to ensure that all our employees are afforded the protection of an appropriate health and safety program. This program contains policies and procedures to deal with common work-place hazards, specific job related hazards, and potential hazards that may arise.

36.1.3. Hazard assessment, job task safety analysis, frequent and regular inspections, project preplanning, and engineering controls, where feasible, will be the preferred method of providing a safe workplace. Both our employees and our subcontractors must be actively involved in the hazard analysis process. Hazards that remain will be minimized or eliminated through training that provides our employees the ability to recognize workplace hazards and understand the proper procedural and/or personal protective equipment requirements.

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

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

36.1.6. The Health and Safety Manager or a designated competent person will make routine and random job site inspections to both identify new hazards and to monitor the effectiveness of our health and safety program. In the final analysis, the success of our safety effort depends on all employees from senior management to the newest hire demonstrating a commitment to safety by working in a safe manner. Safe job performance is how our safety effort is ultimately measured.

36.2. Hazard Assessment and PPE Selection

36.2.1. Hazard Assessment:

36.2.1.1. A Certificate of Hazard Assessment will be kept on the job site for inspection purposes. A careful, systematic personal protective equipment selection process is used to identify what, if any, protection is required to reduce or eliminate the possibility of eye, hand, foot, limb, or head injury. Hazard assessment, performed by the Site Safety or a designated competent person, starts with a thorough knowledge of our job sites, work procedures and methods of operation as well as the hazards that may be created by other contractors working in the vicinity of our employees.

36.2.1.2. The basic hazard categories are: impact, penetration, compression, chemical, heat, harmful dust, and light radiation. Identifying the source of the above hazards allows for consideration of administrative or engineering controls to eliminate the hazard as opposed to providing protection against it. Examples would include: redirecting traffic flow, ventilation, temporary weather barriers, non-slip surfaces, etc. Because administrative and engineering controls are passive -- no employee involvement is required -- they are preferable to PPE.

36.2.2. PPE Selection:

36.2.2.1. A PPE selection is made by analyzing the above information and evaluating the type of risk, the level of risk, the potential for injury, and the possible seriousness of that injury. PPE that is compatible with the above risks and work situation is considered. Actual selection involves all the above factors plus an attempt to provide a level of protection greater than the minimum required.

36.2.2.2. In all situations where it has been determined that a particular type of PPE is to be used, that PPE will be used. There will be no exceptions by virtue of position or rank to this policy. Within an area on a job site where the possibility of falling objects exists, hard hats will be worn. It follows that once an item of PPE (hard hat, in this case) is selected, it must be used by all persons in the identified area regardless of job title or function.

36.2.2.3. Having the Site Safety Officer or designated competent person on a job site determine the PPE requirements allows for knowledgeable selection and consistency, and eliminates chaos that would result if each individual were to decide when, where, and if PPE should be used. 29 CFR 1910 Subpart I, Appendix B, *Non-mandatory Compliance Guidelines for Hazard Assessment and Personal Protective Equipment Selection*, provides excellent selection guidelines for eye and face protection; head protection; foot protection; and hand protection.

36.3. Dissemination of PPE Selection Information

36.3.1. Employees must understand when PPE is necessary and what type(s) of PPE are necessary. All persons for whom PPE will provide a measure of safety will be given appropriate training on that item of PPE as well as an explanation of the importance of its use.

36.4. Sizing and Fitting

36.4.1. The word "personal" in the phrase "personal protective equipment" correctly implies that the equipment is for a specific person. As such, sizing and fitting are important for a variety of reasons:

36.4.1.1. Function: an improperly fitted piece of PPE may not do its job. Example: eye protection against dust must have an excellent face seal.

36.4.1.2. Comfort: the likelihood of continued use is increased if the PPE selected is comfortably fitted. Example: gloves that fit poorly and, over time, make a person's hands hot and clammy are likely to be removed exposing that person to the hazard for which the gloves were required in the first place.

36.4.1.3. Safety: ill-fitting PPE may actually cause an accident. Example: loose hard hat may slip and block one's vision.

36.4.2. Most PPE come in a variety of sizes and within those size groups, adjustments may be made to affect a perfect fit. It is important to understand the procedures for donning, adjusting, using, and removing PPE. Each person who is required to use any type of PPE will be trained, before initial issue, the specific procedures for properly donning, adjusting, using, and removing the specific PPE. This instruction will generally be given by the employee's Supervisor. When available, the manufacturer's instructions will be issued with the PPE

36.5. Care and Maintenance of PPE

36.5.1. PPE will be visually inspected before each use and, if defects are noticed, it will not be used. Some types of PPE are expendable (cotton gloves) and have a limited life span after which they are discarded and new PPE is reissued. Plastic safety glasses become scratched and they too must be exchanged for new ones when vision is impaired. Other types of safety equipment consist of both non-expendable and expendable components. A hard hat is nonexpendable, yet the head band does wear out and becomes expendable. PPE will be maintained in accordance with the manufacturer's instructions and, where appropriate, kept in a sanitary condition.

36.5.2. Cleanliness takes on an added importance when dealing with PPE designed to protect the eyes and face. Dirty or fogged lenses can impair vision and, rather than offer protection from a hazard, actually becomes a contributory factor in causing an accident.

36.5.3. Lastly, should PPE become contaminated with a chemical substance and decontamination is impossible, the PPE will be properly disposed of following the disposal instructions on the Material Safety Data Sheet for that substance.

36.6. Training

36.6.1. Affected employees will be given an understanding of:

36.6.1.1. When PPE is necessary.

36.6.1.2. What PPE is necessary?

36.6.1.3. How to properly put on, take off, adjust, and wear PPE.

36.6.1.4. The limitations of the PPE.

36.6.1.5. The proper care, maintenance, useful life, and disposal of the PPE.

36.6.2. Retraining will be given in situations when changes in PPE requirements render the previous training obsolete or it is noticed that an employee is not following our PPE policies -- specifically, not properly wearing the selected PPE in identified locations or work situations.

36.7. Job Hazard Analysis

36.7.1. OSHA Standards for the Construction Industry CFR Part 1926 Job Hazard Analysis

36.7.1.1. All employees and all subcontractors will read the above OSHA Standards, Job Hazard Analysis, and use the information contained therein to complete our Job Safety Analysis Forms that are located with our job site forms within our project manuals. Using the above referenced booklet and other training materials, employees and subcontractors will be trained in the hazard identification process.

36.7.2. The formal process to identify potential hazards is as follows:

1. A Certificate of Workplace Hazard Assessment will be prepared, signed, and dated by the Site Safety or Safety Department authorized representative indicating that a hazard assessment of the job site and method of operations

has been accomplished. This hazard assessment will focus on the need for PPE that cannot be eliminated through engineering or administrative controls.

2. Because they have insight to the hazards involved, employees and subcontractors who actually perform job tasks will be included in job hazard analysis.

3. A review will be made of previous accidents and injuries as well as "near-misses" to determine if existing hazard controls are adequate or need improvement.

4. In discussion with employees and subcontractors, ideas to eliminate hazards will be discussed and formalized for inclusion on the job task safety analysis form.

5. Hazards associated with various tasks will be ranked and prioritized with the jobs that possess hazards that present unacceptable risks, based on those most likely to occur and with the most severe consequences identified for first priority for analysis.

6. The job task safety analysis form will be completed for each task and, as a matter of course; hazard identification will be performed on all job tasks, both routine and non-routine, before actual work is performed. Hazard identification would be prepared for new processes, changes in operation, products or services, as applicable.

36.7.3. Through frequent and routine job site inspection, review of incidents [or lack thereof], and employee and subcontractor feedback, the above will insure that the identified hazards are mitigated. Should problems occur or a potential risk/hazard be discovered, work will stop until the job task hazard analysis form is adjusted to correct any deficiencies found. The above review process will take place on all job tasks to ensure that new hazards were not created while eliminated others.

SECTION - 37 - Portable Ladders- Revised- 05-17-2016

37.1. Purpose & Scope:

37.1.1. The purpose of the Standard Practice is to outline the requirements associated with the use and care of Portable Ladders. For the purpose of this Standard Practice, portable ladders apply to extension ladders (non-self-supporting ladders) and stepladders (self- supporting ladders). Fixed ladders are not covered by this

37.1.2. This Standard Practice applies to Monarch Employees, Contractors and vendors.

37.2. References:

37.2.1. CFR 1926.1053, Ladders

37.3. General:

37.3.1. Ladder rungs must be uniformly spaced or meet OSHA /ANSI specifications. Ladder rungs, cleats and steps shall be parallel, level, and uniformly spaced when the ladder is in position.

37.3.2. Ladders shall be visually inspected prior to each use. Defective ladders shall be tagged and immediately removed from service, repaired and /or destroyed to prevent unwanted use.

37.3.2.1. Visual inspection shall consist of looking for: the general condition of the ladder; broken, missing, or cracked rungs or side rails; safety feet are in attached and in good condition; excessive oily or greasy conditions; condition / absence of hardware and ropes; and any other defect that would create a hazard if used. All manufactures warning labels must be inplace and legible.

37.3.2.2. Never paint or use painted ladders. Paint will hide cracks, knots, rot, and other defects. Painted ladders shall be scrapped. (Manufacturer painted ladders are acceptable)

37.3.3. Never exceed the capacity of a ladder, which includes your weight and all associated tools and materials. Monarch shall only purchase and use ladders that are rated Type IA “Extra Heavy Duty Industrial” (300 lbs.) or greater if determined necessary.

37.3.3.1. Ladders shall not be modified nor used if found to be modified.

37.3.4. Ladders shall be used only for the purpose for which they were designed. Never use ladder in a horizontal position or as scaffolding, do not place ladders on top of boxes, barrels, crates, etc.

37.3.5. Ladders shall be used on a stable, clean and level surface. Boxes, shims, pallets, barrels or other materials shall never be used to gain height or to level a ladder. Safety feet design shall be applicable to the surface condition the ladder it is being set on.

37.3.6. Do not overreach while working on a ladder. Move the ladder or if necessary use multiple ladders to perform the task.

37.3.7. Only one person is permitted to work off any one ladder at a time unless the ladder is specifically designed for that application.

37.3.8. Never place a ladder against, on, near or in the path equipment that does, or has the potential to, move unexpectedly unless such equipment is locked out and verified.

37.3.9. Whenever practical, rope off or barricade the area below a ladder.

37.3.9.1. The area below a ladder shall be protected from falling tools and materials.

37.3.9.2. Ladders shall not be placed in front of door openings toward the ladder unless the door is blocked open or locked.

37.3.9.3. Ladders shall be protected from mobile equipment by flagging or barricading the work area and or by the use of a safety look out.

37.3.10. While ascending or descending a ladder always face the rungs of the ladder and maintain “Three Points of Contact”.

37.3.10.1. Tool Belts and / or Hand lines shall be used to raise and lower tools or materials. Never ascend or descend a ladder with equipment or tools in your hand.

37.3.11. Metal or Aluminum ladders are prohibited due to conductivity and potential contact with exposed electrical parts. **Exemptions:** Monarch Safety Department must approve all exemptions. If approved, Metal or Aluminum ladders may be used in certain situations where high heat could damage wood or fiberglass or where no electrical hazards are present and Aluminum may be a safer alternative; this includes Portable Stairs type ladders.

37.3.12. Ladders shall be stored in a designated location as to allow for ease of access and to prevent damage. The storage of ladders (vertically or horizontally) shall be

protected from falling by bracing in a rack or being tied off to prevent movement.

37.3.13. Fall protection, **in accordance Monarch requirements**, you shall be required anytime you are working on a ladder and **your feet** are six (4) feet or more above the ground always use fall protection.

37.4. Extension Ladders (otherwise known as straight or non self supporting ladders):

37.4.1. Extension ladders shall extend at least three feet (approximately three (3) rungs) beyond any top access level.

37.4.2. Never extend a multi-section extension ladder to its full length. Overlap shall be provided as follows:

37.4.2.1. Up to 36 feet ……...…… Requires 3 feet of overlap

37.4.2.2. 36 feet up to and including 48 feet …… Requires 4 feet of overlap

37.4.2.3. 48 feet up to and including 60 feet ……. Requires 5 feet of overlap

37.4.3. Extension ladders shall be placed so the distance from the base of the ladder to the wall or other supporting structure is about one quarter (¼) the length of the ladder from the floor to the upper most support point. This is commonly referred to as the "4 to 1 foot to base ratio".

37.4.4. Always make certain that the feet of the ladder are positioned correctly.

37.4.5. Both side rails of an extension ladder shall be tied off to a structure capable of stabilizing and supporting the ladder from falling. A co-worker may hold / secure the bottom of the ladder when securing by means of rope, wire or cable is not feasible. Co-workers shall secure the ladder while ascending or descending the ladder. If the ladder is at risk of falling before it is secured a co-worker shall hold the ladder while it is being secured.

37.4.6. When raising or lowering a multi-section extension ladder, take extreme caution to keep your hands, fingers and feet clear of pinch points.

37.4.7. When adjusting the length of an extension ladder, make sure the locking device is fully secured before climbing.

37.5. Stepladders (otherwise known as a self-supporting ladder):

37.5.1. Legs of a stepladder shall be fully opened and locked into position. Never use a stepladder in the closed position.

37.5.2. Stepladders need not be secured or held by another person if used with all four legs on an even surface and is not of a height to increase the potential of tipping.

37.5.3. Never stand on the top step of a stepladder. Work from a point at least two (2) feet or two (2) rungs from the top.

37.5.4. Employees may stand on the top steps of certain types of Portable Rolling Stairs type ladders, depending on the manufactures instructions for the each ladder.

37.6. <u>Three Points of Contact (Fall Protection Exception):</u>

37.6.1. When working off an **Extension Ladder**, the worker must maintain three points of contact meaning two feet & one hand or two feet & belt buckle or midline of body. Examples are as follows:

37.6.1.1. Both feet firmly on the same rung and one hand firmly holding the ladder. Employee's body must stay between the upright side rails of the ladder and the shoulders must remain below the top rung.

37.6.1.2. Both feet firmly on the same rung and legs / midline (belt buckle) leaning against the rungs of the ladder. Employee's body must stay between the upright side rails of the ladder and the shoulders must remain below the top rung.

37.6.1.3. Extension ladders shall be secured as outlined in this policy.

37.6.2. When working off a **Stepladder**, the worker must maintain three points of contact meaning two feet & one hand or two feet & belt buckle or midline of the body. Examples are as follows:

37.6.2.1. Both feet firmly on the same step and one hand firmly holding the ladder. Employee's body must stay between the upright side rails of the ladder and midline / belt buckle must remain below the top step.

37.6.2.2. Both feet firmly on the same step and legs / midline (belt buckle) leaning against the steps of the ladder. Employee's body must stay between the upright rails of the ladder and midline / belt buckle must remain below the top step.

37.6.3. Stepladders shall be secured as outlined in this policy.

SECTION – 38 - General Waste Management - Revised 05-17-2016

38.1. Each project must estimate the waste that will be generated prior to work being performed so that the need for containers and waste removal, if necessary, can be determined. If the same wastes or scrap materials are generated for every project,

38.2. Waste materials should be properly stored and handled to minimize the potential for a spill or impact to the environment. During outdoor activities, receptacles must be covered to prevent dispersion of waste materials and to control the potential for run-off.

38.3. Construction and demolition wastes include solid wastes such as building materials, packaging, and rubble resulting from construction, remodeling, demolition and repair of buildings and facilities, paving, and infrastructure. This non-hazardous, solid waste is the primary waste stream generated by construction activities.

38.3.1. Non-hazardous, solid waste shall be collected in designated containers established at or near the point of generation.

38.3.2. Debris in work areas shall be cleaned up as frequently as necessary.

38.3.3. All solid waste is removed from the construction site as needed to keep the Work Site orderly and to prevent the dispersion of debris in high winds.

38.3.4. Burning of any trash or debris is prohibited.

38.3.5. All construction and demolition debris shall be disposed of in accordance with regulatory requirements.

38.3.6. Proper segregation of waste materials to ensure opportunities for reuse or recycling will be encouraged per project

38.4. Employees must be instructed on the proper disposal method for wastes. This may include general instruction on disposal of non-hazardous wastes, trash, or scrap materials. If wastes generated are classified as hazardous, employees must be trained to ensure proper disposal.

SECTION 39 - Hexavalent Chromium Program- Revised- 05-17-2016

39.1. Purpose

39.1.1. The purpose of this program is to establish criteria for the assessment and control of Hexavalent Chromium (Cr VI) fumes produced during welding of stainless steel and to protect all employees from accidental exposure to Cr VI during construction operations.

39.2. Definitions

39.2.1. ***Chromium VI*** - pigments containing dry chromate, spray paints and coatings containing chromate, operate chrome plating baths, and weld or cut metals containing chromium, such as stainless steel.

39.2.2. ***Employee Exposure*** - Workers who breathe Hexavalent Chromium compounds at their jobs for many years may be at increased risk of developing lung cancer. Breathing high levels of Hexavalent Chromium can irritate or damage the nose, throat, and lungs. Irritation or damage to the eyes and skin can occur if Hexavalent Chromium contacts these organs in high concentrations or for a prolonged period of time

39.2.3. ***Regulated Area*** - Means an area established by the employer to demarcate areas where airborne concentrations may exceed or can reasonably be expected to exceed the permissible exposure limit.

39.2.4. ***Demolition*** - Means the wrecking or taking out of any load-supporting structural member, or any related razing, removing, or shipping of asbestos products.

39.2.5. ***Renovation*** - Means the modifying of any existing process piping, or portion thereof where exposure to Hexavalent Chromium may result.

39.2.6. ***Repair*** - Means any reconstructing, or reconditioning of systems or substrates where Hexavalent Chromium may be present.

39.3. Scope

39.3.1. This program describes procedures for compliance with 29 CFR 1910.1026 as this applies to our shop and 29 CFR 1926.1126 as it applies to job sites. This program pertains to HBL work activities associated with stainless steel such as welding and grinding. All other regulations and policies such as confined space entry, hot work, respiratory protection, welding and brazing are to be used in conjunction with this policy.

39.4. Regulations

39.4.1. 29 CFR 1910.134 Respiratory Protection

39.4.2. 29 CFR 1910.1020 Access to employee exposure and Medical records

39.4.3. 29 CFR 1910.1026 Chromium (VI)

39.4.4. 29 CFR 1926.1126 Chromium (VI)

39.4.5. MWE Chromium policy

39.5. Program

39.5.1. This program is to maintain compliance with the MWE Policy to control exposure to personnel performing welding or grinding operations on stainless steel piping or plate.

39.5.2. Occupational exposure to Hexavalent Chromium will be kept at a minimum. Initial monitoring will be performed on a representative group to establish a baseline exposure level. Initial monitoring will be confirmed by monitoring periodically.

39.5.3. If exposure levels are determined to be at or below the action level, further monitoring will be voluntary and not necessary per the regulation. If any exposure levels are determined to be above the Action Limit but below the PEL, control measures will be instituted and monitoring performed again every six months. If the exposure levels are above the PEL for 30 days or more, control measures will be instituted and medical monitoring will be performed every three months at no cost to the employee.

39.5.4. The Action Level as established by OSHA is 2.5µg/M³ and the PEL (permissible exposure limit is 5 µg/M³. No employee shall be exposed in excess of the PEL of 5 micrograms per cubic meter of air as an 8-hour TWA

39.6. Operations Procedures

39.6.1. ***General*** - Where protective clothing and equipment is required, the employer shall provide change rooms in conformance with 29 CFR 1910.141. Where skin contact with chromium (VI) occurs, the employer shall provide washing facilities in conformance with 29 CFR 1910.141. Eating and drinking areas provided by the employer shall also be in conformance with § 1910.141.

39.6.2. Engineering and safe work practices include exhaust hoods and point source vacuum system as a primary engineer control. Ventilation will be provided for work activities that may generate Hexavalent Chromium fumes. Ventilation

systems will draw the air through a HEPA (high efficiency particulate air) filter. The ventilation system will be designed to minimize airflow around the shield gas during the welding process. Ventilation systems and methods will draw the air into a filtration system designed to capture fumes and other Hexavalent Chromium airborne particles.

39.6.3. Workers will strive to utilize low fume generating methods of welding, as much as possible:

39.6.3.1. Gas Tungsten Arc Welding (GTAW) (TIG) - lowest FGR

39.6.3.2. Gas Metal Arc Welding (GMAW) (MIG) - medium FGR

39.6.3.3. Submerged Metal Arc Welding (SMAW) (STICK) - highest FGR

39.6.4. Due to the construction nature of the work, work areas will not be able to utilize fixed engineering controls; therefore work practices will be established to minimize exposure levels. Workers will be trained on acceptable work practices and setting the work to minimize the exposure.

39.7. Respiratory Protection

39.7.1. Respiratory protection will be utilized to control exposure levels to work areas or activities for which engineering or work practice controls are not feasible. Refer to Monarch Welding's Respiratory Protection Program.

39.8. PPE

39.8.1. PPE including gloves, coveralls, goggles, foot covers, etc. will be provided at no cost to the employee when there is a hazard from skin or eye contact.

39.9. Prohibited Activities

39.9.1. Actions and activities in work may be restricted to minimize intake of Hexavalent Chromium. Restricted activities include eating, drinking, smoking, chewing tobacco or gum, or applying cosmetics in areas where skin or eye contact with hexavalent Chromium occurs.

39.10. Housekeeping

39.10.1. Housekeeping methods will be part of the process of minimizing exposure to airborne Hexavalent Chromium. Only vacuum systems with HEPA filters will be used during housekeeping operations. Dry sweeping and shoveling will only be used when vacuum systems are not feasible. Compressed air will not be used to clean the work area or to clean off workers clothing.

39.11. Multi-Employer Site

39.11.1. When a supervisor determines that another employer onsite is working in the area of welding and grinding, measures should be taken to protect employees from entering regulated areas. This may be accomplished by using barricades, “danger" tape, and warning signs.

39.12. Training

39.12.1. Personnel will be trained in accordance with 29 CFR 1910.1200 Hazard Communication to specifically address hazards associated with fumes containing Hexavalent Chromium. Training will include signs and symptoms of exposure to airborne chromium, identification of materials containing chromium, activities that may produce Hexavalent Chromium, and control measures during these activities. Other topics will include housekeeping methods, prohibited activities, medical surveillance (if necessary), and air monitoring results. Training will be documented and training records will be maintained by the Health and Safety Coordinator.

39.13. Recordkeeping

39.13.1. Air monitoring data will be maintained and available for review by workers and authorized regulatory agencies. Data from air monitoring will be maintained in the Health and Safety Department in compliance with the regulations

SECTION 40 - Heat Stress and Cold Exposure Program - Revised- 05-17-2016

40.1. Scope

40.1.1. Operations involving high air temperatures, radiant heat sources, high humidity, direct physical contact with hot objects, or strenuous physical activities have a high potential for inducing heat stress. Outdoor operations conducted in hot weather especially those that require semi-permeable or impermeable protective clothing be worn are also likely to cause heat stress among exposed workers.

40.2. Casual Factors for Supervisor to Review

40.2.1. Supervisors must ensure personal factors that contribute to heat related illness are taken into consideration before assigning a task where there is the possibility of a heat-related illness occurring. Age, weight, degree of physical fitness, degree of acclimatization, metabolism, use of alcohol or drugs, and a variety of medical conditions all affect a person's sensitivity to heat. Prior heat injury predisposes an individual to additional injury. Environmental factors including more than the ambient air temperature, radiant heat, air movement, conduction, and relative humidity are all factors.

40.3. Heat Stroke

40.3.1. Heat stroke occurs when the body's system of temperature regulation fails and body temperature rises to critical levels. This condition is caused by a combination of highly variable factors, and its occurrence is difficult to predict.

40.3.2. Heat stroke is a medical emergency. The primary signs and symptoms of heat stroke are confusion, irrational behavior, loss of consciousness, convulsions, a lack of sweating, hot, dry skin, and an abnormally high body temperature, e.g., a rectal temperature of 41°C (105.8°F). If body temperature is too high, it causes death. The elevated metabolic temperatures caused by a combination of workload and environmental heat load, both of which contribute to heat stroke, are also highly variable and difficult to predict.

40.3.3. If a worker shows signs of possible heat stroke, professional medical treatment should be requested and the victim placed in a shady area. The outer clothing should be removed. The worker's skin should be wetted and air movement around the worker should be increased to improve evaporative cooling until professional methods of cooling are initiated and the seriousness of the condition can be assessed. Fluids should be replaced as soon as possible. The medical outcome of an episode of heat stroke depends on the victim's physical fitness and the timing and effectiveness of first aid treatment.

40.3.4. Regardless of the worker's protests, no employee suspected of being ill from heat stroke should be sent home or left unattended unless a physician has specifically approved such an order.

40.4. Heat Exhaustion

40.4.1. The signs and symptoms of heat exhaustion are headache, nausea, vertigo, weakness, thirst, and giddiness. Fortunately, this condition responds readily to prompt treatment.

40.4.2. Heat exhaustion should not be taken lightly. The fainting associated with heat exhaustion can be dangerous because the victim may be operating machinery or controlling an operation that should not be left unattended; moreover, the victim may be injured when he or she faints. Also, the signs and symptoms seen in heat exhaustion are similar to those of heat stroke, a medical emergency.

40.4.3. Workers suffering from heat exhaustion should be removed from the hot environment and given fluid replacement. They should also be encouraged to get adequate rest.

40.5. Heat Cramps

40.5.1. Performing hard physical labor in a hot environment usually causes heat cramps. These cramps have been attributed to an electrolyte imbalance caused by sweating. It is important to understand that cramps can be caused by both too much and too little salt.

40.5.2. Cramps appear to be caused by the lack of water replenishment. Because sweat is a hypotonic solution, excess salt can build up in the body if the water lost through sweating is not replaced. Thirst cannot be relied on as a guide to the need for water. Instead, water must be taken every fifteen to twenty minutes in hot environments.

40.5.3. Under extreme conditions, such as working for six to eight hours in heavy protective gear, a loss of sodium may occur. Recent studies have shown that drinking commercially available carbohydrate-electrolyte replacement liquids is effective in minimizing physiological disturbances during recovery.

40.6. Heat Collapse (Fainting)

40.6.1. In heat collapse, the brain does not receive enough oxygen because blood pools in the extremities. As a result, the exposed individual may lose consciousness.

40.6.2. This reaction is similar to that of heat exhaustion and does not affect the body's heat balance. However, the onset of heat collapse is rapid and unpredictable. To

prevent heat collapse, the worker should gradually become acclimatized to the hot environment.

40.7. Heat Rashes

40.7.1. Heat rashes are the most common problem in hot work environments. Prickly heat is manifested as red papules and usually appears in areas where the clothing is restrictive. As sweating increases, these papules give rise to a prickling sensation. Prickly heat occurs in skin that is persistently wetted by un-evaporated sweat, and heat rash papules may become infected if they are not treated.

40.7.2. In most cases, heat rashes will disappear when the affected individual returns to a cool environment.

40.8. Heat Fatigue

40.8.1. A factor that predisposes workers to heat fatigue is lack of acclimatization. The use of a program of acclimatization and training for work in hot environments is advisable.

40.8.2. The signs and symptoms of heat fatigue include impaired performance of skilled sensorimotor, mental, or vigilance jobs. There is no treatment for heat fatigue except to remove the heat stress before a more serous heat-related condition develops.

40.9. Preventing Heat Stress

40.9.1. Most heat-related health problems can be prevented or the risk of developing them reduced. Following a few basic precautions should lessen heat stress. Ventilation, air cooling, fans, shielding and insulation are the five major types of engineering controls used to reduce heat stressing hot-work environments.

40.9.2. Heat reduction can also be achieved by using power assists and tools that reduce the physical demands placed on a worker. However, for this approach to be successful, the metabolic effort required for the worker to use or operate these devices must be less than the effort required without them. Another method is to reduce the effort necessary to operate power assists. The worker should be allowed to take frequent rest breaks in a cooler environment.

40.10. Acclimatization

40.10.1. The human body can adapt to heat exposure to some extent. This physiological adaptation is called acclimatization. After a period of acclimatization, the same

activity will produce fewer cardiovascular demands. The worker will sweat more efficiently (causing better evaporative cooling), and thus will more easily be able to maintain normal body temperatures.

40.10.2. A properly designed and applied acclimatization program decreases the risk of heat-related illnesses. Such a program basically involves exposing employees to work in hot environment for progressively longer periods.

40.11. Fluid Replacement

40.11.1. Cool water or any cool liquid (except alcoholic beverages) should be made available to workers to encourage them to drink small amounts frequently, e.g., one cup every twenty minutes. Ample supplies of liquids should be placed close to the work area. Although some commercial replacement drinks contain salt, this is not necessary for acclimatized individuals because most people add enough salt to their summer diets.

40.12. Engineering Controls

40.12.1. General ventilation is used to dilute hot air with cooler air (generally cooler air that is brought in from the outside). This technique clearly works better in cooler climates than in hot ones. A permanently installed ventilation system usually handles large areas or entire buildings. Portable or local exhaust systems may be more effective or practical in smaller areas.

40.12.2. Air treatment/air cooling differs from ventilation because it reduces the temperature of the air by removing heat (and sometimes humidity) from the air. Air conditioning is a method of air-cooling, but it is expensive to install and operate. An alternative to air conditioning is the use of chillers to circulate cool water through heat exchangers over which air from the ventilation system is then passed; chillers are more efficient in cooler climates or in dry climates where evaporative cooling can be used.

40.12.3. Local air-cooling can be effective in reducing air temperature in specific areas. Two methods have been used successfully in industrial settings. One type, cool rooms, can be used to enclose a specific workplace or to offer a recovery area near hot jobs. The second type is a portable blower with built-in air chiller. The main advantage of a blower, aside from portability, is minimal set-up time.

40.13. Convection

40.13.1. Another way to reduce heat stress is to increase the airflow or convection using fans, etc. in the work area (as long as the air temperature is less than the worker's skin temperature).

40.13.2. Changes in air speed can help workers stay cooler by increasing both the convective heat exchange (the exchange between the skin surface and the surrounding air) and the rate of evaporation. Because this method does not actually cool the air, any increases in air speed must impact the worker directly to be effective.

40.13.3. If the dry bulb temperature is higher than 35°C (95°F), the hot air passing over the skin can actually make the worker hotter. When the temperature is more than 35°C and the air is dry, evaporative cooling may be improved by air movement, although the convective heat will offset this improvement. When the temperature exceeds 35°C and the relative humidity is 100 percent air movement will make the worker hotter. Increases in air speed have no effect on the body temperature of workers wearing vapor-barrier clothing.

40.14. Training

40.14.1. Training is the key to good work practices. Unless all employees understand the reasons for using new, or changing old, work practices, the chances of such a program succeeding are greatly reduced.

40.14.2. A good heat stress-training program for supervisors and employees will include the following components:

40.14.2.1. Training will be conducted prior to employees starting work and prior to a supervisor being allowed to supervise employees

40.14.2.2. Knowledge of the hazards of heat stress.

40.14.2.3. Recognition of predisposing factors, danger signs, and symptoms.

40.14.2.4. Awareness of first-aid procedures for, and the potential health effects of, heat stroke.

40.14.2.5. Employee responsibilities in avoiding heat stress.

40.14.2.6. Dangers of using drugs, including therapeutic ones, and alcohol in hot work environments.

40.14.2.7. Use of protective clothing and equipment.

40.14.2.8. Purpose and coverage of environmental and medical surveillance programs and the advantages of worker participation in such programs.

40.14.2.9. Supervisors should be trained in the employer's heat illness procedures to prevent heat illness and procedures to follow when an employee exhibits

symptoms consistent with possible heat illness, including emergency response procedures

40.15. Administrative Controls

40.15.1. Circulating air is the most highly effective, as well as the most complicated, personal cooling system. By directing compressed air around the body from a supplied air system, both evaporative and convective cooling is improved. The greatest advantage occurs when circulating air is used with impermeable garments or double cotton overalls.

40.15.2. Circulating air, however, is noisy and requires a constant source of compressed air supplied through an attached air hose. One problem with this system is the limited mobility of workers whose suits are attached to an air hose. Another is that of getting air to the work area itself. These systems should therefore be used in work areas where workers are not required to move around much or to climb.

40.15.3. Another concern with these systems is that they can lead to dehydration. The cool, dry air feels comfortable and the worker may not realize that it is important to drink liquids frequently.

40.15.4. The following administrative controls can be used to reduce heat stress:

40.15.4.1. Reduce the physical demands of work, e.g., excessive lifting or digging with heavy objects.

40.15.4.2. Provide recovery areas, e.g., air-conditioned enclosures and rooms.

40.15.4.3. Use shifts, e.g., early morning, cool part of the day, or night work.

40.15.4.4. Use intermittent rest periods with water breaks.

40.15.4.5. Use relief workers.

40.15.4.6. Use worker pacing.

40.15.4.7. Assign extra workers and limit worker occupancy, or the number of workers present, especially in confined or enclosed spaces.

40.15.4.8. Schedule hot jobs for the cooler times of day and schedule routine maintenance and repair work in hot areas for the cooler seasons of the year.

40.16. Personal Protective Equipment

40.16.1. Reflective Clothing

40.16.1.1. Reflective clothing, which can vary from aprons and jackets to suits that completely enclose the worker from neck to feet, can stop the skin from absorbing radiant heat. However, since most reflective clothing does not allow air exchange through the garment, the reduction of radiant heat exposure must more than offset the corresponding loss in evaporative cooling. For this reason, reflective clothing should be worn as loosely as possible and only when authorized by a safety professional.

40.16.1.2. In extreme situations where radiant heat is high, auxiliary-cooling systems can be used under the reflective clothing.

40.16.2. Auxiliary Body Cooling

40.16.2.1. Ice Vests

40.16.2.1.1. Commercially available ice vests, though heavy, may accommodate as many as 72 ice packets, which are usually filled with water. Carbon dioxide, dry ice, can also be used as a coolant.

40.16.2.1.2. The cooling offered by ice packets lasts only two-four (or less) hours at moderate to heavy heat loads, making frequent replacement necessary. However, ice vests do not encumber the worker with air supply or power cords, permitting maximum mobility. Cooling with ice is also relatively inexpensive.

40.16.2.2. Wetted Clothing

40.16.2.2.1. Another simple and inexpensive personal cooling technique that is effective when reflective or other impermeable protective clothing is worn is the use of wetted terry cloth coveralls or wetted two- piece, whole-body cotton suits.

40.16.2.2.2. This approach to auxiliary cooling can be quite effective under conditions of high temperatures and low humidity where evaporation from the wetted garment is not restricted.

40.16.2.3. Water – Cooled Garments

40.16.2.3.1. These garments range from a hood, which cools only the head, to vests and "long-johns", which offer partial or complete body cooling. This equipment requires a battery-driven circulating pump, liquid-ice coolant and a container.

40.16.3. Respirator Usage

40.16.3.1. The use of the self- contained breathing apparatus (SCBA) itself and its additional weight adds stress to the worker, and this stress will contribute to the overall heat stress of the worker.

40.16.3.2. Chemical protective clothing such as the totally encapsulated chemical protection suits will also add to the heat stress problem.

40.16.3.3. Frequent shifts of workers may be necessary.

40.17. Heat Stress Questionaire

40.17.1. Listed below are sample questions that you may wish to consider when investigating heat stress in the workplace:

1. Are heat-producing equipment or processes used?
2. Are there any employees with previous history of heat-related problems?
3. Is the heat steady or intermittent?
4. How many employees are exposed?
5. Is potable water available?
6. Are supervisors trained to detect/evaluate heat stress symptoms?
7. Is ventilation in place?
8. Is ventilation operating?
9. Is air-conditioning in place?
10. Is air-conditioning operating?
11. Are fans operating?
12. Are fans being used in the right place?
13. Is there a training program in place?
14. Is there a liquid replacement program?

40.18. Protecting Workers in Cold Environments

40.18.1. With temperatures across the country at or near record lows, OSHA is reminding workers and employers to take necessary precautions. Workers in construction, commercial fishing, maritime and agriculture are among those who need to take precautions.

40.18.2. Prolonged exposure to freezing or cold temperatures can result in serious health problems such as trench foot, frostbite and hypothermia. In extreme cases, including cold water immersion, exposure can result in death. Danger signs include uncontrolled shivering, slurred speech, clumsy movements, fatigue and confused behavior. If these signs are observed, call for emergency help.

40.18.3. OSHA's Cold Stress Card provides a quick reference guide and recommendations. Available in English and Spanish, this laminated fold-up card is free to employers, workers and the public. Among the tips:

40.18.3.1. How to Protect Workers

40.18.3.1.1. Recognize environmental and workplace conditions that can be dangerous.
40.18.3.1.2. Learn the signs and symptoms of cold-induced illnesses/injuries and what to do to help workers.
40.18.3.1.3. Train workers about cold-induced illnesses and injuries.
40.18.3.1.4. Encourage workers to wear proper clothing for cold, wet and windy conditions including layers so they can adjust to changing conditions.
40.18.3.1.5. Be sure that workers take frequent short breaks in warm dry shelters to allow the body to warm up.
40.18.3.1.6. Try to schedule work for the warmest part of the day.
40.18.3.1.7. Avoid exhaustion or fatigue because energy is needed to keep muscles warm.
40.18.3.1.8. Use the buddy system -- work in pairs so that one worker can recognize danger signs.
40.18.3.1.9. Drink warm, sweet beverages (sugar water, sports-type drinks) and avoid drinks with caffeine (coffee, tea, sodas or hot chocolate) or alcohol.
40.18.3.1.10. Eat warm, high-calorie foods such as hot pasta dishes.

40.18.4. Remember, workers face increased risks when they take certain medications, are in poor physical condition or suffer from illnesses such as diabetes, hypertension or cardiovascular disease.

APPENDIX "A"
SUMMARY OF HEAT RELATED DISORDERS, SYMPTOMS, AND TREATMENTS

DISORDER	SYMPTOMS	TREATMENT
HEAT STROKE (Least common, but most dangerous) - Occurs when body's system of temperature regulation fails and the body's temperature rises to critical levels. - This disorder is associated with high fatality rates, so early recognition and treatment is critical.	- Red or flushed skin. - Confusion, irrational behavior. - Lack of sweating, - Hot dry skin (although person may have been sweating earlier) - High body temperature - Dizziness, convulsions, nausea, vomiting, and headache can result - Loss of consciousness.	**Emergencies Call _____** - If heat stroke suspected, call ambulance immediately. - Do not delay transportation to medical facility. - Move to cool environment and remove unnecessary clothing. - Sponge body with cool water and fan individual. - If patient is alert, give sips of cool water. - No one suspected of being ill from heat stroke should be sent home without medical evaluation.
HEAT EXHAUSTION - May occur after working in hot environments without adequate fluid replacement. - Heat exhaustion may be confused with heat stroke, which is a medical emergency.	- Weakness, fatigue, headache, nausea, vomiting, and/or loss of appetite, thirst. - Pale, clammy skin with large amount of sweating. - Lightheadedness, fainting. - Impaired performance.	**Emergencies Call_____** - Call ambulance and move employee to cool environment. - Do not delay transportation to a medical facility. - Remove necessary clothing. - Person should lie flat. - If person is alert, offer small amounts of cool water.
HEAT CRAMPS - May occur after working in moderate to hot environments. - This disorder usually occurs after hard physical work. - Heat cramps may occur during or after work.	- Cramps in skeletal muscles or abdominal muscles. - Cramps may be recurrent. - Muscle pain may continue after cramps subside.	- Move person to cool environment. - Remove unnecessary clothing. - Provide water or electrolyte solution. - Transport to medical facility.
HEAT RASH - Is the most common heat related disorder. - Aggravated by restrictive or impermeable clothing,	- Skin rash commonly occurs on the arms, shoulders, chest, and behind the knees. - May be accompanied by a tingling or prickly feeling.	- Move to cool environment. - Remove restrictive or impermeable clothing, if present. - Avoid scratching. - Seek medical attention. - Shower and dry skin thoroughly after working in hot environments.

SECTION 41- Drug and Alcohol Policy – Revised 11-27-2016

41.1 All Monarch Welding and Engineering employees are subject drug and alcohol testing. This Program applies to all employees and subcontractors at all tiers, including bargaining unit and non-bargaining unit employees. Each bargaining unit shall comply with their respective drug and alcohol policy. When bargaining unit or non-bargaining unit employees do not have an applicable drug and alcohol screening program, they shall default to the MUST Drug and Alcohol Screening Program.

SECTION 42 – Silica Dust Procedure- Revised- 06-08-2018

42.1 Purpose

43.1.1 39.1.1. The purpose of this program is to establish criteria for the assessment and control of respirable crystalline silica in construction work.

42.2.Definitions

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

43.2.2. ***Competent person*** – an individual who is capable of identifying existing and foreseeable respirable crystalline silica hazards in the workplace and who has authorization to take prompt corrective measures to eliminate or minimize them.

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

43.2.4. ***High-efficiency particulate air (HEPA) filter*** – a filter that is at least 99.97 percent efficient in removing mono-dispersed particles of 0.3 micrometers in diameter.

43.2.5. ***Objective data*** – information, such as air monitoring data from industry-wide surveys or calculations based on the composition of a substance, demonstrating employee exposure to respirable crystalline silica associated with a particular product or material or a specific process, task, or activity.

43.2.6. ***PLHC-*** Physician or other licensed health care professional

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

42.3 Scope

43.3.1. This program describes procedures for compliance with 29 CFR 19126.1153 and will be followed during all operations when there is a chance of exposure to respirable crystalline silica above 25 micrograms per cubic meter of air (25µg/m3) as an 8-hour time-weighted average (TWA).

42.4 Regulations

43.4.1. 29 CFR 1910.134 Respiratory Protection
43.4.2. 29 CFR 1910.1020 Access to employee exposure and Medical records
43.4.3. 29 CFR 1926.1153 Silica in Construction
43.4.4. MWE Silica Procedure

42.5 Specific exposure control methods

43.5.1. This program is to maintain compliance with the MWE Policy to control exposure to respirable crystalline silica dust.
43.5.2. If exposure levels are determined to be at or below the action level, further monitoring will be voluntary and not necessary per the regulation. If any exposure levels are determined to be above the Action Limit but below the PEL, control measures will be instituted and monitoring performed again every six months. If the exposure levels are above the PEL for 30 days or more, control measures will be instituted and medical monitoring will be performed in accordance to 1926.1153.
43.5.3. The Action Level as established by OSHA is 25µg/M³ and the PEL (permissible exposure limit) is 50 µg/M³. No employee shall be exposed in excess of the PEL of 50 micrograms per cubic meter of air as an 8-hour TWA
43.5.4. Occupational exposure to respirable crystalline silica will be kept at a minimum. The employer shall fully and properly implement the engineering controls, work practices, and respiratory protection specified for the task on Table 1, unless the employer assesses and limits the exposure of the employee to respirable crystalline silica in accordance with the section, "Alternative exposure control methods," outlined in the MWE Silica Dust Procedure.
43.5.5. Refer to Table 1 on the next page to assess potential exposure to respirable

Table 1: Respirable Silica Dust Control Program

Table 1: Respirable Silica Dust Control Program

Written Exposure Control Plan

Respirable Crystalline Silica

Company Name: Monarch Welding and Engineering Inc.

Person Completing the Plan, Title: Frank Wimmer

Designated Competent Person: Frank Wimmer

Competent Person Phone # 586-754-5400

Type of Exposure Control Plan: ☑ Project Specific

Date Review Due:

Project Name (if applicable): Outage Work, Maintance Work

Description of Task(s): Routinely performed tasks.

Task	Source of Control Measures [1,2]	Air Monitoring Results AL = 25µm/m3 PEL = 50um/m3	Engineering Controls [3,4,5]	Work Practices Controls	Environment (if specified)	Respiratory Protection [6] < 4 hours	Respiratory Protection [6] > 4 hours	Housekeeping Measures [7,8]	Access Restriction Methods [9]
Handheld drills (including impact and rotary hammer drills)	☒ Table 1 ☐ Air Monitoring	Not Necessary if Table 1 Controls are being followed.	Use drill equipped with commercially available shroud or cowling with dust collection system.	Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions.		☒ None ☐ APF 10 ☐ APF 25 ☐ APF 50 ☐ APF >50	☒ None ☐ APF 10 ☐ APF 25 ☐ APF 50 ☐ APF >50	Utilize wet sweeping and /or HEPPA-filtered vacuuming. **DO NOT** dry sweep or dry brush. **DO NOT** use compressed air.	The area will be barricaded with warning signs visible from all accesses to the work area. Access will be limited to individuals that are: Required to be in the area Familiar with the requirements. Following the requirements. Wearing respiratory protection (if applicable) to enter.
			Dust collector must provide the air flow recommended by the tool manufacturer, or greater, and have a filter with 99% or greater efficiency and a filter-cleaning mechanism.	Use a HEPA-filtered vacuum when cleaning holes.					

Task	Source of Control Measures [1,2]	Air Monitoring Results AL = 25µm/m3 PEL = 50um/m3	Engineering Controls [3,4,5]	Work Practices Controls	Environment (if specified)	Respiratory Protection [6] < 4 hours	Respiratory Protection [6] > 4 hours	Housekeeping Measures [7,8]	Access Restriction Methods [9]
Handheld powered chipping tools	☒ Table 1 ☐ Air Monitoring	Not Necessary if Table 1 Controls are being followed.	Use tool with water delivery system that supplies a continuous stream or spray of water at the point of impact.		Outdoors	☒ None ☐ APF 10 ☐ APF 25 ☐ APF 50 ☐ APF >50	☐ None ☒ APF 10 ☐ APF 25 ☐ APF 50 ☐ APF >50	Utilize wet sweeping and /or HEPPA-filtered vacuuming. **DO NOT** dry sweep or dry brush. **DO NOT** use compressed air.	The area will be barricaded with warning signs visible from all accesses to the work area. Access will be limited to individuals that are: Required to be in the area Familiar with the requirements. Following the requirements. Wearing respiratory protection (if applicable) to enter.
				or	Indoors or in an	☐ None	☐ None		
			Use tool equipped with commercially available shroud and dust collection system.	Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions.	Outdoors	☒ None ☐ APF 10 ☐ APF 25 ☐ APF 50 ☐ APF >50	☐ None ☒ APF 10 ☐ APF 25 ☐ APF 50 ☐ APF >50		
			Dust collector must		Indoors or in an	☐ None	☐ None	Utilize wet sweeping	

Table 1: Respirable Silica Dust Control Program

Task	Source of Control Measures[1,2]	Air Monitoring Results AL = 25µm/m3	Engineering Controls 3,4,5	Work Practices Controls	Environment (if specified)	Respiratory Protection[6] < 4 hours	Respiratory Protection[6] > 4 hours	Housekeeping Measures[7,8]	Access Restriction Methods[9]	
Handheld grinders for mortar removal (i.e., tuckpointing)	☒ Table 1 ☐ Air Monitoring	Not Necessary if Table 1 Controls are being followed.	Use grinder equipped with commercially available shroud and dust collection system. Dust collector must provide 25 cubic feet per minute (cfm) or greater of airflow per inch of wheel diameter and have a filter with 99% or greater efficiency and a cyclonic pre-separator or filter-cleaning mechanism	Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions.		☐ None ☒ APF 10 ☐ APF 25 ☐ APF 50 ☐ APF >50	☐ None ☐ APF 10 ☒ APF 25 ☐ APF 50 ☐ APF >50	Utilize wet sweeping and /or HEPPA-filtered vacuuming. **DO NOT** dry sweep or dry brush. **DO NOT** use compressed air.		
Handheld power saws (any blade diameter)	☒ Table 1 ☐ Air Monitoring		Use saw equipped with itegrated water delivery system that continuously feeds water to the blade.		Outdoors	☒ None ☐ APF 10 ☐ APF 25 ☐ APF 50 ☐ APF >50	☐ None ☒ APF 10 ☐ APF 25 ☐ APF 50 ☐ APF >50			
					Indoors or in an enclosed area	☐ None ☒ APF 10 ☐ APF 25 ☐ APF 50 ☐ APF >50	☐ None ☒ APF 10 ☐ APF 25 ☐ APF 50 ☐ APF >50			
Refractory removal / chipping	☐ Table 1 ☒ Air Monitoring	Not listed in Table 1 Air Monitoring is required.	Wet down refractory brick before attempting to remove.			☐ None ☒ APF 10 ☐ APF 25 ☐ APF 50 ☐ APF >50	☐ None ☒ APF 10 ☐ APF 25 ☐ APF 50 ☐ APF >50	Utilize wet sweeping and /or HEPPA-filtered vacuuming. **DO NOT** dry sweep or dry brush. **DO NOT** use compressed air.	The area will be barricaded with warning signs visible from all accesses to the work area. Access will be limited to individuals that are: Required to be in the area Familiar with the requirements. Following the requirements. Wearing respiratory protection (if applicable) to enter.	
Loading / unloading silica containg catalyst	☐ Table 1 ☒ Air Monitoring	Not listed in Table 1 Air Monitoring is required.				☐ None ☒ APF 10 ☐ APF 25 ☐ APF 50 ☐ APF >50	☐ None ☒ APF 10 ☐ APF 25 ☐ APF 50 ☐ APF >50	Utilize wet sweeping and /or HEPPA-filtered vacuuming. **DO NOT** dry sweep or dry brush. **DO NOT** use compressed air.		

NOTES:

1.) **Any deviation from Table 1** Tasks require air monitoring to determine control measures and respiratory protection requirements.

2.) Where an employee performs **more than one task on Table 1** during the course of a shift, and the total duration of all tasks combined is more than four hours, the required respiratory protection for each task is the respiratory protection specified for more than four hours per shift. If the total duration of all tasks on Table 1 combined is less than four hours, the required respiratory protection for each task is the respiratory protection specified for less than four hours per shift.

3.) Engineering and Work Practice Controls are required to be **used at all times** unless the employer can demonstrate that such controls are not feasible.

4.) If engineering and work practice controls are inadequate to reduce exposures to below the PEL, they still need to be used to reduce employee exposure to the **lowest feasible level** and must be supplemented with the appropriate respiratory protection.

5.) When implementing the control measures specified in Table 1, each employer shall:

(i) For tasks performed indoors or in enclosed areas, provide a means of exhaust as needed to **minimize the accumulation of visible airborne dust;**

(ii) For tasks performed using wet methods, **apply water at flow rates sufficient to minimize release of visible dust;**

(iii) For measures implemented that include an **enclosed cab or booth,** ensure that the enclosed cab or booth:

(A) Is maintained as free as practicable from settled dust;

(B) Has door seals and closing mechanisms that work properly;

(C) Has gaskets and seals that are in good condition and working properly;

(D) Is under positive pressure maintained through continuous delivery of fresh air;

(E) Has intake air that is filtered through a filter that is 95% efficient in the 0.3-10.0 µm range (e.g., MERV-16 or better); and

(F) Has heating and cooling capabilities.

6.) Respiratory Protection **APF Levels:**

APF 10 = Half Mask

APF 25 = Loose Fitting PAPR, Hood PAPR

APF 50 = Full Face

APF 1,000 = Full Face PAPR, Full Face Abrasive Blasting Hood, Full Face Supplied Air

APF 10,000 = Full Face SCBA

6.) Housekeeping **may NOT include dry sweeping or dry brushing** where it could contribute to the employee exposure unless wet sweeping, HEPA-filtered vacuuming or other methods are not feasible.

7.) **Compressed air may NEVER** be used to clean clothing or surfaces.

8.) Regulated areas will be established wherever airborne concentrations of respirable crystalline silica are, or can reasonably be expected to be, in excess of the PEL and **must be barricaded and warning signs** must be clearly visible from all accesses to the work area stating the following:

43.5.6. When implementing the control measures specified in Table 1, each employer shall:

42.5.6.1 For tasks performed indoors or in enclosed areas, provide a means of exhaust as needed to minimize the accumulation of visible airborne dust;

42.5.6.2 For tasks performed using wet methods, apply water at flow rates sufficient to minimize release of visible dust;

42.5.6.3 For measures implemented that include an enclosed cab or booth, ensure that the enclosed cab or booth:

42.5.6.4 Is maintained as free as practicable from settled dust;

42.5.6.5 Has door seals and closing mechanisms that work properly;

42.5.6.6 Has gaskets and seals that are in good conditions and working properly;

42.5.6.7 Is under positive pressure maintained through continuous delivery of fresh air;

42.5.6.8 Has intake air that is filtered through a filter that is 95% efficient in the 0.3-10.0µg/m3 range; and

43.3.1 Has heating and cooling capabilities.

43.5.7. Where an employee performs more than one task on Table 1 during the course of a shift, and the total duration of all tasks combined is more than four hours, the required respiratory protection for each task is the respiratory protection specified for more than four hours per shift. If the total duration of all tasks on Table 1 combined is less than four hours, the required respiratory protection for each task is the respiratory protection specified for less than four hours per shift.

42.6 Alternative exposure control methods

43.6.1. For tasks not listed in Table 1, or where the employer does not fully and properly implement the engineering controls, work practices, and respiratory protection described in Table 1:

43.6.2. Permissible exposure limit (PEL):

43.6.3. The employer shall ensure that no employee is exposed to an airborne concentration of respirable crystalline silica in excess of 50 µg/m3, calculated as an 8-hour TWA.

43.6.4. Exposure assessment:

43.6.5. The employer shall assess the exposure of each employee who is or may reasonably be expected to be exposed to respirable crystalline silica at or above the action level.

43.6.6. The employer shall assess the 8-hour TWA exposure for each employee on the basis of any combination of air monitoring data or objective data sufficient to accurately characterize employee exposures to respirable crystalline silica.

This shall be in accordance to MIOSHA Construction Safety and Health Standard Part 690. Silica in Construction 1926.1153(d)(2)(ii).

43.6.7. Methods of compliance:

43.6.8. Engineering and work practice controls. The employer shall use engineering and work practice controls to reduce and maintain employee exposure to respirable crystalline silica to or below the PEL, unless the employer can demonstrate that such controls are not feasible. Wherever such feasible engineering and work practice controls are not sufficient to reduce employee exposure to or below the PEL, the employer shall nonetheless use them to reduce employee exposure to the lowest feasible level and shall comply with other OSHA standards, when applicable, such as 29 CFR 1926,57 (Ventilation), where abrasive blasting is conducted using crystalline silica-containing blasting agents, or where abrasive blasting is conducted on substrates that contain crystalline silica.

42.7 Respiratory Protection

42.7.1 Respiratory protection will be utilized to control exposure levels to work areas or activities for which engineering or work practice controls are not feasible. Refer to Monarch Welding's Respiratory Protection Program.

42.8 PPE

43.8.1 PPE including gloves, coveralls, goggles, foot covers, etc. will be provided at no cost to the employee when there is a hazard from skin or eye contact.

42.9 Prohibited Activities

42.9.1 Actions and activities in work may be restricted to minimize intake respirable crystalline silica dust. Restricted activities include eating, drinking, smoking, and chewing tobacco or g

42.10 Housekeeping

42.10.1 Personnel shall avoid dry sweeping or dry brushing where such activity could contribute to employee exposure to respirable crystalline silica unless wet sweeping, HEPA-filtered vacuuming or other methods that minimize the likelihood of exposure are not possible.

42.10.2Personnel shall not allow compressed air to be used to clean clothing or surfaces where such activity could contribute to employee exposure to respirable crystalline silica unless:

42.10.2.1 The compressed air is used in conjunction with a ventilation system that effectively captures the dust cloud created by the compressed air; or

42.10.2.2 No alternative methods are possible.

42.11 Multi-Employer Site

42.11.1 When a supervisor determines that another employer onsite is working in the area of cutting and grinding of materials that may possess crystalline silica dust, measures should be taken to protect employees from entering regulated areas. This may be accomplished by using barricades, “danger" tape, and warning signs.

42.12 Written Exposure Control Plan

42.12.1 The employer shall establish and implement a written exposure control plan that contains the following:
42.12.2 Description of the tasks in the workplace that involve exposure to respirable crystalline silica;
42.12.3 Description of the engineering controls, work practices, and respiratory protection used to limit employee exposure to respirable crystalline silica for each task;
42.12.4 A description of the procedures used to restrict access to work areas, when necessary, to minimize the number of employees exposed to respirable crystalline silica and their level of exposure, including exposures generated by other employers or sole proprietors.

42.13 Training

42.13.1 Personnel will be trained in accordance with 29 CFR 1926.1153 and on all possible hazards and potential of exposure to respirable crystalline silica dust.

42.14 Medical Surveillance

42.14.1 The employer shall make medical surveillance available at no cost to the employee, and at a reasonable time and place, for each employee who will be required to use a respirator for 30 or more days per year.

42.14.2Initial examination. The employer shall make available an initial (baseline) medical examination within 30 days after initial assignment, unless the employee has received a medical examination that meets the requirements of this section within the last three years.

42.15Recordkeeping

42.15.142.15.1 Air monitoring data will be maintained and available for review by workers and authorized regulatory agencies. Data from air monitoring will be maintained in the Health and Safety Department in accordance with 29 CFR 1910.120.

42.15.2Objective data will be maintained and made available in accordance with 29 CFR 1910.1020.

42.15.3Medical surveillance records will be maintained and made available in accordance with 29 CFR 1910.120.

SECTION 43 – Severe Weather Policy- Revised- 10-16-2018

43.1Purpose

This documentation describes the actions to take in the event of severe weather.

43.2Definitions

43.2.1 **Severe Weather -** Severe weather is any unusual weather conditions that have the potential to affect refinery operations, injure people or cause property damage, e.g., tornadoes, high winds, severe thunder storms, heavy rains, snowstorms, etc.

43.2.2 **Severe Weather Warning -** A Severe Weather Warning is when the Weather Bureau has issued a "warning" or when conditions are imminent for severe weather.

43.2.3 **Severe Weather Watch -** A Severe Weather Watch is when conditions are probable for severe weather to affect refinery operation.

43.2.4 **Tornado Warning -** A Tornado Warning is a Severe Weather Warning notification that at least one tornado has been spotted in the area.

43.2.5 **Tornado Watch -** A Tornado Watch is a severe weather watch specific to tornado.

43.3 Scope

43.3.1 This documentation applies to all personnel in working conditions subjected to severe weather, including tornados.

43.4Requirements

43.4.1 Weather is to be monitored through the National Weather Service by project supervisors,

43.4.2 The project supervisors will notify all personnel through Monarch radio channels when existing work conditions are subjected to severe weather.

43.5Lightning

43.5.1 All personnel will be notified when a lightning strike has occurred within 10 miles of worksite by project supervisors.

43.5.2 The following work must stop when a lightning strike is observed by the weather system within 10 miles:

- All confined space entries
- Crane and Broderson
- Aerial lifts, and scissor lift use
- Work above grade, and work on metal equipment
- Work in areas where there is no grounded structure at least 10 feet high within 30 feet of each employee.
- In addition to stopped work listed above, crane booms must be lowered to less than 30 feet.

43.5.2.1Any field work requiring employees to be outside that is essential to maintain safe unit operation must have the Supervisor approval.

43.5.2.2 The supervisor will continue monitoring the National Weather Service and time lightning strikes. An "All Clear" will be announced when the 10 mile radius has been free from lightening for 30 minutes. At this time all employees can go back to work.

43.6 Tornado Watch

43.6.1 When worksite is subjected to tornado watch, project supervision will:

- Notify all personnel that the watch has been issued.
- Prepare to discontinue or not start work at high elevations
- Tie down or remove loose scaffolding and other similar preparations for high winds/tornado.
- Most activities are expected to proceed as scheduled with the possible exception of work at high elevation, work that would be difficult to stop if weather conditions worsen, or any work that would continue for an extended period of time once begun.
- Determine the location of the nearest severe weather shelter and establish communication to plant for site specific emergency procedures.

43.1.2 When worksite is subjected to tornado warning, project supervision will:

- Notify all personnel that the warning has been issued, stop all work, and report to nearest severe weather shelter.

43.1.3 Project supervision will await the "All Clear" call from proper plant personnel or when the tornado watch/warning is expired unless otherwise directed by the plant.

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