CORPORATE SAFETY PROGRAM

2019

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A. SAFETY POLICIES AND PROCEDURES INTRODUCTION

All work shall be conducted in a safe and practical manner is conformance with the Occupational Safety and Health Act of 1970, OSHA Safety and Health Regulations, and the contents of this Safety Program.

The Safety Program of Burkholder's shall be made available at the jobsite to all employees, subcontractor employees and other affected parties.

The Project Superintendent for Burkholder's is designated as the Company Safety Representative for safety matters related to the on-site construction operations over which the company has control.

All safety programs in this manual are established to promote employee safety and to respect owner related requirements. All Trades and Visitors must wear hardhats and safety glasses with no exceptions. All subcontractors are responsible for safety in their respective work areas, especially in areas confirmed as "Lead", "Radiation", "Magnetic", etc. Signs and programs are implemented for a reason and must be respected.

All subcontractors must submit a copy of their respective OSHA Log, Safety Program, SDS's and verification of Workers' Compensation Insurance coverage to the Project Superintendent prior to mobilization. At a minimum, weekly safety meetings shall be held on a standard day and time. All subcontractors on site must have their Foremen attend the safety meetings.

For construction contract work under the provisions of FAR Clause 52.236-13, contractors shall comply with the latest version of EM 385-1-1 (including interim changes) that is in effect on the date of construction. A copy of the most current Accident Prevention Plan (APP) or Project Safety and Occupational Health (SOH) Plan, mounted on/adjacent to the bulletin board, or a notice on the bulletin board stating the location of the Plan. The location of the Plan shall be accessible on the site by all workers in both electronic and printed form.

A.1 SAFETY POLICY STATEMENT

Our Commitment to You

Safety, Health and Environmental Affairs
Policy Statement

Burkholder's incorporates safety, health and environmental responsibilities and practices into its business every day. Burkholder's places a high value on its corporate responsibility and is committed to protecting the environment in which we operate and providing a safe and healthy work environment for all employees, contractors and suppliers. We define our safety, health and environmental commitment through management leadership, employee involvement and by the following principles:

- We strive to improve environmental, safety and health performance by implementing programs in the field with corporate support provided through Management.
- We hold each employee accountable for integrating environmental, safety and health into their work activities. We encourage our contractors, suppliers, and business partners to adopt this same accountability.
- We strive for continuous improvement in our environmental, safety and health systems by setting challenging goals, systematically measuring and evaluating performance, and learning from our experiences.
- We manage the business with an active commitment to environmental, safety and health excellence and integrate this commitment into strategies, which enhance our business advantage.
- We strive to achieve full compliance with applicable environmental, safety and health rules and regulations and implement prudent work practices where no standard exists.

We maintain an open line of communication with our employees, contractors, and suppliers. All employees, contractors and suppliers are encouraged to discuss any issues, concerns or ideas that may result in opportunities to reduce risk and improve performance.

Robert Burkholder Date

A.2 ACCIDENT COSTS

Every employee must understand that accidents cost our company money and time in addition to the pain and suffering endured by the injured employee. Accidents result in both direct and indirect costs. Direct costs include workers' compensation premiums, medical bills, etc. Indirect costs include lost time, reduced productivity, retraining, and lower employee morale.

Let's focus on workers' compensation for a few minutes. **YOU must understand that workers' compensation is paid directly by our company and not money from the state.** Premiums are paid by Burkholder's and increases or decreases based on the number of accidents that we have each year.

For example, if you get three (3) speeding tickets your car insurance premium increases. It's the same for workers' compensation insurance -- no difference. The money comes directly from our bottom line. Raises, new equipment and medical benefits are dictated by the amount of money that we have. One of our biggest operating costs is workers' compensation premiums. **If we hold down these costs then we have lower overhead and a greater chance for winning new contracts and keeping jobs!**

A.3 REGULATORY COMPLIANCE

Burkholder's is a construction contractor that works on a great variety of jobsites. Doing so causes us to fall under the jurisdiction of the Department of Labor,
The following regulations were the guiding force behind the creation of this manual and are to serve as a guide whenever safety related issues cannot be answered by this document:

- 29 CFR 1926 (OSHA)

B. MANAGEMENT SAFETY RESPONSIBILITIES

B.1 SENIOR MANAGEMENT

A. Is responsible for application of the Corporate Safety Program to emphasize loss prevention activities at all levels.

B. Will emphasize accident prevention management during safety meetings, staff meetings, supervisor meetings, employee contacts, etc.

C. Will delegate the responsibility for accident prevention to supervisors and employees, holding them accountable for positive action within their areas of control.

D. Will establish with each management level safety management goals and objectives and will evaluate completion of assigned objectives on an annual basis.

E. To make management's position clear in regard to accident prevention, the following points will be emphasized:

   i. The importance management attaches to accident prevention.

   ii. The integral part of accident prevention in daily operations.

   iii. The need for cooperation between management, supervisors, and employees.

F. To keep abreast of predominant accident trends, management will:

   i. Review accident records and safety performance regularly.

   ii. Review investigations of all accidents and near- miss incidents.

   iii. Discuss safety related matters with department heads, supervisors, and safety personnel on a regular basis.

B.2 CORPORATE SAFETY MANAGER (SAFETY REPRESENTATIVE)

A. Is responsible for developing, updating, and administering the company's Safety Program. This includes providing assistance in the development of safe work rules, safe work practices, and other measures to improve accident prevention performance.

B. Advises and assists all managers and supervisors on matters pertaining to safety and accident prevention.

C. Will submit regular reports to management on the status of loss control programs and accident trends.

D. Reviews accident investigation reports. Personally conducts accident investigation of serious accidents or those with potential for serious harm.

E. Evaluates need for and provides safety training programs, either conducted by coordinator or by obtaining outside resources for these purposes.

F. Actively participates in all pre-job planning safety activities.

G. Conducts safety inspections and performs audits to monitor the effectiveness of the program.

H. Oversees compliance with applicable federal, state, and local regulations.

I. Reviews minutes of all safety committee meetings and distributes copies of minutes to senior management and to others overseeing the company's accident prevention activities.

J. Conduct a site safety inspection whenever office personnel visit a site.

B.3 PROJECT MANAGERS

A. Are responsible for delegation of specific safety responsibilities to all members of the project and conducts active measurement of performance of these responsibilities (i.e., accountability, budgeting, cost control, supervision of Subcontractors).

B. Establishes loss control objectives and monitors progress in meeting them.

C. Reviews and follows up on accident reports, accident cause analysis, and accident costs.

D. Will incorporate loss control into pre-job planning meetings.

E. Will give positive recognition of loss control accomplishments.

F. Demonstrates a consistent interest and leadership role in loss control.

G. Impresses supervisors with the importance they attach to accident prevention.

H. Establishes, in conjunction with the company's safety manager, a program to periodically audit the effectiveness of safety efforts.

I. Provide safety goals and rewards at their discretion, this can include but is not limited to: lunches, apparel, hats, etc.

B.4 SUPERINTENDENTS AND FOREMEN

A. Since the supervisor is a direct representative of management, the employees will interpret the supervisor's attitude toward safety as that of management. Therefore, it is essential the supervisor operate on the basis that accident prevention is necessary for efficient operation.

B. Accepts responsibility for accidents occurring in the area under their supervision.

C. Is responsible for having a thorough knowledge of the hazards involved in every operation within his/her project and how the hazards can be controlled.

D. Be active in site logistics, weekly tool box talks, daily JHA's by all subcontractors, be accountable for documentation and collection of daily safety and monthly requirements of this program.

E. Instructs all employees under their supervision in the safe and correct method of performing the work. Particular emphasis should be placed on instruction to new employees and those transferred from other jobs.

F. Follows up on training to make sure employees work in accordance with instructions. Improper work habits should be corrected as soon as detected.

G. Maintains good housekeeping within their area of supervision.

H. Implements corrective actions for all noted site deficiencies utilizing photos, email notices, etc. as required.

I. To avoid accidents, the supervisor must insist on proper use of machinery, equipment, and tools. Operator training must be on file and current at all times.

J. Insures that physical and mechanical hazards are promptly corrected. If corrective action is beyond his/her scope of authority, the condition should be reported to their supervisor.

K. Thoroughly and immediately investigates all accidents and near-misses. Determines causes and corrective actions to reduce the occurrence of similar events.

L. Sets a good example by following good safety practices in all activities, particularly in the use of guards and personal protective equipment.

M. Sees that all injuries, no matter how slight, are reported promptly.

N. Requires personal protective equipment be used in accordance with needs and established procedures.

O. Inspects their area of responsibility daily to make sure physical and mechanical hazards, as well as work habits and procedures, are properly controlled.

P. Collects daily inspection reports from all contractors no later than one hour after starting time, or halt work.

Q. In assuming the above responsibilities, the supervisor must remember that when they do not correct unsafe conditions or practices, they are, in the eyes of the employees, approving them, thereby undermining their own effectiveness and authority.

R. Participates in safety related meetings as the project/scope of work dictates.

S. Conducts weekly Safety Meetings with all project foremen, in conjunction with but not limited to, weekly Tool Box Talks with field crews.

T. Subcontractors and other workers on site are required to comply with all applicable OSHA Standards. When hazards are noted, Superintendents/Foremen shall:

   i. Advise the appropriate subcontractor in writing;

   ii. Require that the hazard is corrected or eliminated; and,

   iii. Instruct our employees on the avoidance of the hazard.

C. EMPLOYEE RESPONSIBILITIES

Each employee (to include but not limited to: Superintendents, Foremen, Shop Personnel, etc.) has a personal responsibility in accident prevention. He/she has a responsibility to their family, to them self, to their fellow workers and to their employer. In the performance work duties, they shall be expected to observe safe practice rules, as well as instructions relating to the efficient handling of their work. Violations of safety instructions and policies could result in disciplinary action up to and including dismissal.

This manual is not meant to cover all of the rules and regulations of safety, or to provide all of the pertinent data concerning safety equipment. It is each employee's responsibility to ask questions when in doubt.

Some of the employee's responsibilities are:

- **a.** Incorporate safety in every job procedure. No job is done efficiently unless it has been done safely.
- **b.** Knows and obeys safe practice rules and general rules.
- **c.** Reports unsafe job conditions to a supervisor.
- **d.** Reports all injuries to a supervisor immediately.
- **e.** Follows instructions given by a supervisor.
- **f.** Cautions fellow workers when they perform unsafe acts.
- **g.** Refrains from TAKING CHANCES.
- **h.** Ask questions of a supervisor when there is any doubt concerning job site safety instructions.
- **i.** Refrains from tampering with anything which they do not understand.
- **j.** Refrains from horseplay or other acts of carelessness.
- **k.** Will not be under the influence of, consume, or dispense during working hours, or at any time while on or near the job site any alcoholic beverages, illegal drugs, or controlled drugs (prescription medicine) taken in excess of the dosage prescribed by a physician.
- **l.** Will attend and participate in scheduled safety meetings.
- **m.** Request additional training for tasks you are not familiar with.

ASK YOUR SUPERVISOR FOR HELP WHENEVER NEEDED!

C.1 SAFE DRIVING

a. Understand that the safe operation of a company vehicle your responsibility. If the vehicle becomes unsafe, it is your responsibility to notify a supervisor immediately. Additionally:

- **i.** All company vehicles shall be used only for business purposes by company employees.
- **ii.** Vehicles shall be operated in a safe manner at all times.
- **iii.** Seat belts must be worn at all times by both occupant and passengers.
- **iv.** Cell phone use/texting or other distracting activities are not permitted while driving.
- **v.** Report all accidents or incidents resulting in injury or damage to the vehicle or other property, no matter how slight.
- **vi.** Maintain a valid driver's license. If driving privileges are suspended or revoked for any reason, contact your supervisor before the end of the NEXT business day.
- **vii.** Legal impairment due to alcohol, illegal drugs, prescription medication, etc. is prohibited during use or operation of company vehicles.
- **viii.** One person per seatbelt at all times, no riders in the bed of any pickup truck or other piece of mobile equipment

C.2 TRADESPERSON RESPONSIBILITIES

a. Tradespersons are to read and follow the Project Safety Rules listed within this Program. If a tradesperson does not understand the rules, he/she should ask their foreman/supervisor for help. Each tradesperson is responsible for following these safety rules without exception.

b. Tradespersons are to report any unsafe acts or condition immediately to their foreman/supervisor. If the action or condition can be easily corrected, the tradesperson should make this correction.

c. Tradespersons are required to attend the weekly Tool Box Safety Meetings.

d. Tradespersons should report all work related injuries and illnesses to their foreman/supervisor immediately and should report any accidents witnessed which occur on the jobsite or offsite if caused by the construction operations.

C.3 SUBCONTRACTOR RESPONSIBILITIES

Each subcontractor will be responsible for the safety and security of employees and work area under their control. In addition, you must comply with all applicable local, state, and federal safety requirements, as well as with any safety rules and regulations set forth by Burkholder's, and the company at which it is performing the contracted work.

In addition:

a. Designate a representative to coordinate and communicate all safety and health issues. Ensure that the designated representative has a copy of the contract, is thoroughly familiar with its contents, and with the safety and health aspects of the work, or knows who to call to obtain this information. The designated representative is responsible for ensuring that all company responsibilities are carried out and has the authority to immediately correct unsafe practices or hazardous conditions.

b. Assure that employees are trained in the work practices necessary to perform the job safely. Subcontractors must provide proof of training to Burkholder's.

c. Uses only the plant or building entrance designated, and follow the facility access control practice. The subcontractor also will ensure that each subcontractor employee is issued and wears some form of easily seen identification.

d. Provide supervisors and employees who are competent and adequately trained, including training in all health and safety aspects of the work involved in the contract; provide all tools and equipment for the work, including personal protective equipment (PPE), and ensure the equipment is in proper working order, and that employees are instructed in its proper use.

e. Maintain good housekeeping. Be responsible for cleaning all work areas, and disposing of any discarded materials in a proper and legal manner. Enforce daily cleanup procedures.

f. Immediately notify Burkholder's of any OSHA recordable injury or illness to contractor employees or subcontractor employees occurring on your site.

g. Each Subcontractor will be responsible for conducting weekly "Tool Box" Talks and attend weekly Safety Meetings with Project Foremen/ Superintendents of Burkholder's.

h. Subcontractors must submit a copy of their respective OSHA Log, Safety Program, Safety Data Sheets, a chemical list and all Workers' Compensation information to the Project Superintendent prior to mobilization.

Failure to comply with the contract safety requirements will be considered as noncompliance with the contract and may result in remedial action being taken. This may include:

a. Requiring replacement of an employee or employees on the jobsite.
b. Shutting down the operation of the subcontractor on site until the subcontractor agrees to take the required corrective action.
c. Replacement of the subcontractor altogether.

*Note: Any focus four violation will result in immediate termination from the project, and may be grounds for exclusion from future projects.

D. SAFETY COMMITTEE RESPONSIBILITIES

1. A safety committee will be established to facilitate the uniform implementation of company safety policies and objectives and to ensure that employees have a safe environment in which to work.
2. The committee may consist of both labor and management representatives.
3. The chairperson will be the company's Safety Manager (or designated representative).
4. A monthly meeting shall be held and should include:
   - **a.** Discussion of accidents and near misses since the prior meeting.
   - **b.** Job inspections shall be conducted each month and the results reviewed during the committee meeting. Recommendations shall be identified along with associated responsibilities for corrective actions.
   - **c.** Minutes shall be kept and maintained by the safety manager for review and further distribution to upper management.
   - **d.** Efforts shall be made to rotate committee members so that 50% of the members are changed each year.

E. TRAINING OF EMPLOYEES

Placement of Employees:

1. Prior to work assignment, the employee will be familiarized with:
    - **a.** The policy toward safety and the purpose of the Safety Program.
    - **b.** The responsibility of the employee in regard to the Safety Program.
    - **c.** An explanation of safety rules.
    - **d.** An explanation of rules regarding personal protective equipment.
    - **e.** A review of any physical restrictions in light of the potential assignment.
    - **f.** An emphasis on the necessity of prompt, complete reporting of any accidents as well as hazards and the location of the first-aid station.
    - **g.** Employees must have OSHA 10 Hour Construction Training; this training can be no more than 5 years old.
2. The supervisor will be responsible for the indoctrination of new employees in the following areas:
    - **a.** General work rules of the job/project.
    - **b.** Potential job hazards and the consequences of disregarding established safe work practices.
    - **c.** Safe work practices.
    - **d.** The supervisor will frequently recheck the employee's performance and immediately correct any unsafe behaviors.
    - **e.** Frequent observations will be performed of the employees to ensure that proper work procedures and safety requirements are being followed.
    - **f.** It is imperative that the supervisor set a good example and clearly demonstrate the importance of job safety.
    - **g.** Employees must have OSHA 30 Hour Construction Training; this training can be no more than 5 years old.
3. Formal employee training programs will be in place for the Required Training such as:
    - **a.** CPR/First aid
    - **b.** 10 & 30 Hour OSHA (5 Year Expiration)

c. ICRA 8 & 24

E.1 TOOL BOX MEETINGS

Burkholder's and each subcontractor shall hold weekly Tool Box Safety Meetings for their employees on site. All Tradesmen are required to attend these weekly meetings. A written record of the items discussed and a list of those attending each meeting must be kept available at any time for inspection by Burkholder's.

Topics for Tool Box Meetings should cover items which are applicable to the particular work in progress. All employees should be encouraged to cite what they feel are unsafe conditions. The Project Safety Representative or superintendent should be made aware of these issues and direct remedial action as necessary.

At the Tool Box Meetings, new employees on site shall be made aware of the Project Safety Program and parameters. They should read and become familiar with the program.

Sign in sheets must be retained and distributed by the Superintendent. All violations or problems shall be resolved within 24 hours and notice of resolution must be provided to Burkholder's.

1. **Policy Statement**
   - **a.** It is the policy of Burkholder's to provide all employees with a safe and healthful work environment free from recognized hazards. It is also policy to maintain and actively support a comprehensive employee safety and health program.
   - **b.** Sub-contractors shall also comply with requirements of this written program OR have their own company program meeting at least the minimum requirements of this program.
2. **Purpose**
   - **a.** To prevent the recurrence of incidents by establishing a procedure for identifying unsafe actions and/or conditions that contributed to an incident event and eliminate or control those unsafe acts and/or conditions.
   - **b.** To establish a protocol for identifying systematic deficiencies (root causes), control and correct them.
3. **References**
   - **a.** OSHA 29 CFR 1901 through 1904
   - **b.** Root Cause Analysis (RCA) Handbook *Why Tree and Five Why Techniques 2nd Edition 2010*
4. **General Requirements**
   - **a.** OSHA Reporting/Recording Requirements
     - **i.** OSHA Recordable Incident. Burkholder's will keep records of fatalities, injuries, and illnesses and must record each fatality, injury and illness that:
       1. Is work-related; and
       2. Is a new case; and
       3. Meets one or more of the general recording criteria (i.e. medical treatment beyond first aid).
     - **ii.** The OSHA recordable incident shall be recorded on the 300 log within 6 calendar days of the day that the incident was reported.
     - **iii.** Upon completion of the calendar year the OSHA 300A Summary shall be completed and posted in a conspicuous location during the months of February, March, and April.
     - **iv.** The OSHA 300A Summary shall be reviewed and signed by a company official.

v. OSHA recordkeeping documents shall be maintained for 5 years following the end of the calendar year that the records cover.

b. Incident Reporting Procedures

i. Incident occurs.

ii. Ensure treatment for the injured and implement Emergency Action Procedures (i.e. call 9-1-1, CPR, basic first aid, injured receiving treatment, etc.)

iii. Secure the incident scene for all Level 2 and Level 3 incidents.

iv. Conditions that may injure additional employees or other persons must be controlled. (i.e. equipment shut down).

v. Person or barricade is in place to keep people away from identified hazards.

vi. If the incident involves a company vehicle, call the police department to provide a record of incident.

vii. The person in charge of the job site shall report the incident. If the person in charge of the job site is not able to report the incident the next most senior person will report the incident.

viii. The Supervisor and General Foreman shall be notified.

ix. The Corporate Safety Manager shall be notified.

c. Incident Classification

i. An Incident Investigation Summary including a root cause analysis using the "Why Tree" Method will be completed by the supervisor including the details of the investigation and corrective action for all level 2 and level 3 incidents or near-misses. Level 2 and level 3 incidents are defined on the Incident Classification Form.

d. Root Cause Analysis

i. Root cause analysis is a problem solving method aimed at identifying the initiating cause or "root cause" of problems or events. The practice of Root Cause Analysis is predicated on the belief that problems are best solved by attempting to correct or eliminate root causes, as opposed to merely addressing the immediately obvious symptoms. By directing corrective measures at root causes, it is hoped that the likelihood of problem recurrence will be minimized.

ii. Identifying the "root cause" is the most critical part of successful corrective action, because it directs the corrective action at the root of the problem.

iii. Basic sequence of Root Cause Analysis:

1. Define the problem.

2. Gather data/evidence.

3. Ask why and identify the causal relationships associated with the defined problem.

4. Identify which causes if removed or changed will prevent recurrence.

5. Identify effective solutions that prevent recurrence, are within your control, meet your goals and objectives and do not cause additional or unforeseen problems.

6. Implement the recommendations or corrective actions.

7. Observe the recommended solutions to ensure effectiveness.

e. Catastrophic and Critical Incidents (Level 2 and Level 3 Incidents)

i. Any injury or illness resulting in the hospitalization of one (1) or more employees or results in death shall be reported **(within 24 hours)** to the nearest OSHA area office.

ii. Immediately contact the Corporate Office and formulate an investigative response plan. Typically, the investigation will include the following:

1. Site visit by the Corporate Safety Managers

2. Site investigation – conducted by Field Supervisor, Corporate Safety Manager, and affected Employees using the "Why Tree" Method. These named personnel will form the basis for the Incident Investigation Team.

3. Completion of the Incident Investigation Summary (Attachment 1) including a root cause analysis using the "Why Tree" Method. (Attachment 2).

4. Implementation schedule of corrective action will be included following the investigation.

5. Verification that corrective actions are implemented and effective as determined by the incident investigation team.

6. Communication of corrected actions to affected site employees and subcontractors.

f. Protecting the Incident Scene

i. Secure the area where the incident took place. **Safety of life and health for the people and the environment is more important than incident investigations.** Do not begin the incident investigation until medical care has been given to anyone who has been injured, and the abnormal situation has been brought under control. In most cases, this will be the responsibility of the person in charge of the job site at the time of the incident namely the job supervisor. If the person in charge of the job site is not able to secure the scene, the next most senior person will secure the scene.

ii. Preserve all the conditions which existed at the time of the incident – leave PPE, tools, and equipment in their exact location until the investigation is concluded. Rope or tape off the area to keep additional people out of the area.

iii. Ensure conditions that pose a hazard to responders are identified and made safe or barricaded to prevent further incident.

iv. During the field investigation photographs should be taken of the scene, including pictures from multiple vantage points (i.e. take a picture from all angles, close and far, take close ups of equipment, point of failure, etc.). Place a tape measure or other object of reference for distance of measurement sensitive pictures.

1. Pictures and other fact gathering will be completed by an employee trained in incident investigation protocol.
2. Include specific measurements and indicate locations of people, places and things at the time of the incident in a sketch.
3. Gather and save physical parts, pieces and other small objects, recording the location where they are found. Especially gather things that might be removed, cleaned up, or damaged if they are left where they are found. If the physical data is too large to move

or would need disassembly, make notes to investigate those things later once the team has been formed.

4. Remove tools and equipment from service. Ensure that all tools and personal protective equipment of the injured are collected and available for inspection. Remove equipment and place in a secure location for inspection.
5. Take necessary samples; Using the Sample Log Form (Attachment 4).
6. Capture any relative process data before it is lost. See Data Gathering section for more information.

g. Data Gathering

i. Data Gathering is collecting all the facts that are associated with the incident. The quicker the information is collected, the higher the quality of the data, and the more reliable it will be to the incident investigation process.

ii. This stage may be required before the incident investigation team is formed due to the nature of disintegration of the data; therefore it is critical that the local supervisor act in a timely fashion to ensure the relevant data is retained.

iii. All data recovered must be properly identified and labeled. It needs to be organized and stored in a secure location until the investigation is complete.

iv. It is important to note that data collection is an ongoing part of the incident investigation. Additional data may still be collected in accordance with this procedure after the investigation team is formed and investigation commences.

v. The data should be collected from various sources including but not limited to People, Position, Paper, Parts.

1. People
   - **a.** People act as an important data source for the incident investigation process by relaying information about the incident to the incident investigation team.

b. Interviews in accordance to the Witness Statement Section should be conducted when appropriate during the investigation process. Do not speak to the Press, or any reporters.

2. Position

a. Position refers to what the status was before the incident occurred. This includes the following key pieces of information:

b. Weather Conditions

c. Process and equipment status (normal operations, start-up, shutdown, maintenance, within operating limits/intended function.

d. Job status or work status (examples could be shift change, operating, or maintenance)

e. Human Factor issues (Facility Layout, design considerations, etc.).

3. Paper

a. Paper refers to the document trail, both before and after the incident requiring investigation. The following areas should be thoroughly reviewed as part of the Why Tree Investigation:

b. Logs, charts, notes, turnovers, handbook logs, work orders, JSA's, tags or print outs which could indicate what was going on at the time of the incident, and the state of any equipment in the area.

c. Electronic records and data in control systems, including trends and process variables and listing of alarms if applicable.

d. Any metallurgical reports of broken parts, send off to a lab as part of the investigation process. The Corporate Safety

Manager will assist the Incident investigation team in these type of situations.

e. Copies of standing orders, procedures in use or applicable to the situation when the incident occurred.

4. Parts

a. Parts refer to how the incident sight looks after the incident occurred and what areas of physical evidence are gathered.

b. Example of physical evidence for incident investigation teams to collect include:

i. Parts, pieces and other things that can be picked up and removed from the site after recording their relative location. Emphasis should be placed on documenting parts which might be moved, cleaned up, or damaged if they are left in place. If pieces and parts are too large to be moved, incident investigation team should take notes to investigate those items later after the smaller parts are documented and examined.

ii. Pictures, videos, taken should be time and date logged using the camera if setting is available to ensure accuracy.

iii. Documentation of all parts samples should include:

iv. Name of the person collecting the sample.

v. Date and time the sample is collected.

vi. Exact location and source of the sample.

vii. Record all samples taken on the sample log (Attachment 4).

h. Witness Statements

i. Witnesses to the incident will be identified and interviewed. Every effort shall be made to ensure unbiased testimony.

ii. The following information should be obtained:

1. Name, Address, Phone.
2. Affiliation to the incident.
3. A description of the witness' account of events (who, what, where, when, how).

i. Incident Investigation Team Members

i. The number of members on the team may vary based on the incident complexity.

ii. Each team member should add value to the investigation process.

iii. The minimum required personnel for an incident investigation team include:

1. Corporate Safety Manager
2. Job Site Supervisor
3. 2 members of the sites affected employees

iv. If the incident requires specific expertise or involves a complex situation, additional technical personnel may be included in the incident investigation team. Additional members for these situations include:

1. A design or process engineer, if required.
2. Safety/ Environmental Specialist.
3. Outside Safety Consultant.
4. Equipment inspectors.
5. Reliability specialists.
6. Fire Protection specialists.
7. Maintenance Mechanics.
8. Emergency Response Personnel.
9. Vendor Representatives.
10. Higher members of Management are discouraged from being team members due to the concern for uncovering root causes that might lead to a management deficiency.

j. Corrective Action Implementation

i. When corrective action is determined, the person in charge of the site from which the loss occurred will be notified in the following manner:

1. Catastrophic/Critical Incidents – the person in charge will receive written notification of required corrective actions. An

implementation schedule for corrective action will be provided with the written notification.

2. Other than Critical Incidents – the person in charge will receive written or verbal notification of required corrective actions. An implementation schedule for corrective action will be provided with the written/verbal notification.

ii. Completion of corrective action will be verified during the follow up to the incident (time frame specified during investigation and corrective action implementation).

iii. Corrective actions must be tracked from time of implementation to completion. All implemented corrective actions should be remitted to the Corporate Safety Manager to ensure closure and recording in a database.

iv. Lessons learned from the incident should be communicated to other work crews. Based on the severity of the incident, the communication could be in the form of a safety alert, or verbal tool box talk, up to and including a companywide safety stand down for catastrophic incidents.

v. The Corrective Actions Database

1. Must be regularly updated in a timely fashion by the Corporate Safety Manager.
2. Key information maintained in the database includes:
   - **a.** Incident number.
   - **b.** Date of the incident.
   - **c.** Description of corrective action.
   - **d.** Corrective action Owner or Responsible party for implementation.
   - **e.** Current Status of the corrective action (open, closed, complete).
   - **f.** Date of the last update or closure date.
   - **g.** Actions taken during the corrective action period.

k. Quality Assurance

i. To Ensure Proper and Complete Root Cause Analysis is performed on all Level 2 and Level 3 events using the "Why Tree" Method it may be

necessary for the Corporate Safety Manager, or there designated representative (outside safety consultant) to audit the incident investigation process.

ii. The Quality Assurance Checklist (Attachment 5) will be used during this process to ensure accurate investigations.

iii. The Quality assurance audit can be performed during the incident investigation process, and for previously closed investigations to ensure closure of corrective actions and communication of the corrective actions to affected employees.

5. Training

a. Affected employees are trained on correct incident reporting procedures.

b. Affected employees conducting incident investigations (supervisors) shall be trained on the following:

i. All elements of this written programs

ii. Instruction on how to protect an incident scene.

iii. Investigation techniques.

iv. Taking photographs.

v. Interviewing witnesses.

vi. How to complete an Incident Investigation Summary.

vii. How to complete the "Why Tree" Analysis.

viii. Root Cause and Corrective actions identification, implementation and validation.

ix. Reporting and Recording the completed investigation.

6. Definitions

Incident Investigation - a fact-finding procedure for the review of an incident to identify unsafe actions or conditions that could have contributed to the incident event. Facts identified through investigation are used to identify the root cause to the incident, prevent recurrence of similar incidents, improve safety and health awareness, and to resolve relative injury or property damage claims. All medical related information shall be kept confidential.

Accident - An undesired event that results in personal injury or property damage.

Incident - An incident is an unplanned, undesired event that adversely affects completion of a task.

Near Miss - Near misses describe incidents where no property was damaged and no personal injury sustained, but where, given a slight shift in time or position, damage and/or injury easily could have occurred.

Attachment 1 Incident investigation Form
Attachment 2 Sample "Why Tree" Analysis
Attachment 3 5 Why Form
Attachment 4 Sample Log Form
Attachment 5 Quality Assurance Checklist

Attachment 1

Incident Investigation Form

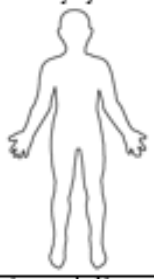
Incident Location Information:

Location, *use full address of location or GPS coordinates*:			
Date:		Time of accident: ☐ AM ☐ PM	
Shift start: ☐AM ☐PM	Size of work crew:	Total time on project:	
Briefly describe the weather conditions/ temperature:			
Supervisor/ Forman:		Phone number:	

Employee Information:

Last Name:	First Name:	Gender: ☐ Male ☐ Female	SS Number:
Address:		Phone Number:	
Date of Birth: / Age:	Check all that apply: ☐ Full Time ☐ Part Time ☐ Salary ☐ Hourly	Did the employee report the accident immediately? ☐ Yes ☐ No	
Date of Employment:	Job Title:	Length of Experience, *at the task being performed*:	

Nature of Injury/ Illness:

Please mark body to indicate injury: 		Type of Injury: *Please check all that apply* ☐ Strain/ Sprain ☐ Broken bone ☐ Poisoning ☐ Eye Injury ☐ Skin Disorder ☐ Hearing Loss ☐ Cut/ Laceration ☐ Respiratory Conditions ☐ Teeth/ Mouth Injury ☐ Amputation ☐ Environmental- *Beestings, poison Ivy, snake bits, etc.* ☐ All other Injuries/ Illnesses	
Was there equipment/ tools involved: ☐ Yes ☐ No	*Note: If yes was selected in the previous questions, fill out equipment/ tool section.*	Type:	Manufacturer: / Model Number:
Medical Treatment Utilized: *Please check all that apply* ☐ ER/ Hosiptal ☐ Basic field first aid ☐ Walk-in Clinic ☐ No medical attention needed ☐ Specialized Care- *Dentist, Chropractor, Eye Doctor, etc.*		Location of Medical Facility, *name with full address*:	

BURKHOLDER'S Heating and Air Conditioning, Inc.	Burkholder's Heating and Air Conditioning, Inc.	Issue Date:	02/01/19
		Revision Date:	
		Next Review Date:	02/01/20
1.0 Incident Investigation		EAST COAST RISK MANAGEMENT	

Pre- Accident:

Description of Job Scope:	Was the JSA or Tool Box completed prior to work start? ☐ Yes ☐ No, *explain-*
Was the job site inspected prior to work being performed? ☐ Yes ☐ No, *explain-*	Was Personal Protective Equipment (PPE) identified and utilized? ☐ Yes ☐ No, *explain-*

Accident:

Describe what happened, including the sequence of events preceding the incident. Draw pictures on back if needed.

Please indicate any of the following that contributed to the accident/ illness:

☐ Failure to lockout/ tagout	☐ Improper maintenance	☐ Poor housekeeping
☐ Failure to secure	☐ Improper PPE	☐ Safety devices not utilized
☐ Horseplay	☐ Inoperative safety device(s)	☐ Unsafe arrangement or process
☐ Improper dress	☐ Lack of training or skill	☐ Unsafe equipment
☐ Improper guarding	☐ Operating without authority	☐ Unsafe position
☐ Improper instruction	☐ Physical or mental impairment	☐ Other_____

Supervisor's corrective actions to prevent reoccurrence: _____

_____

_____

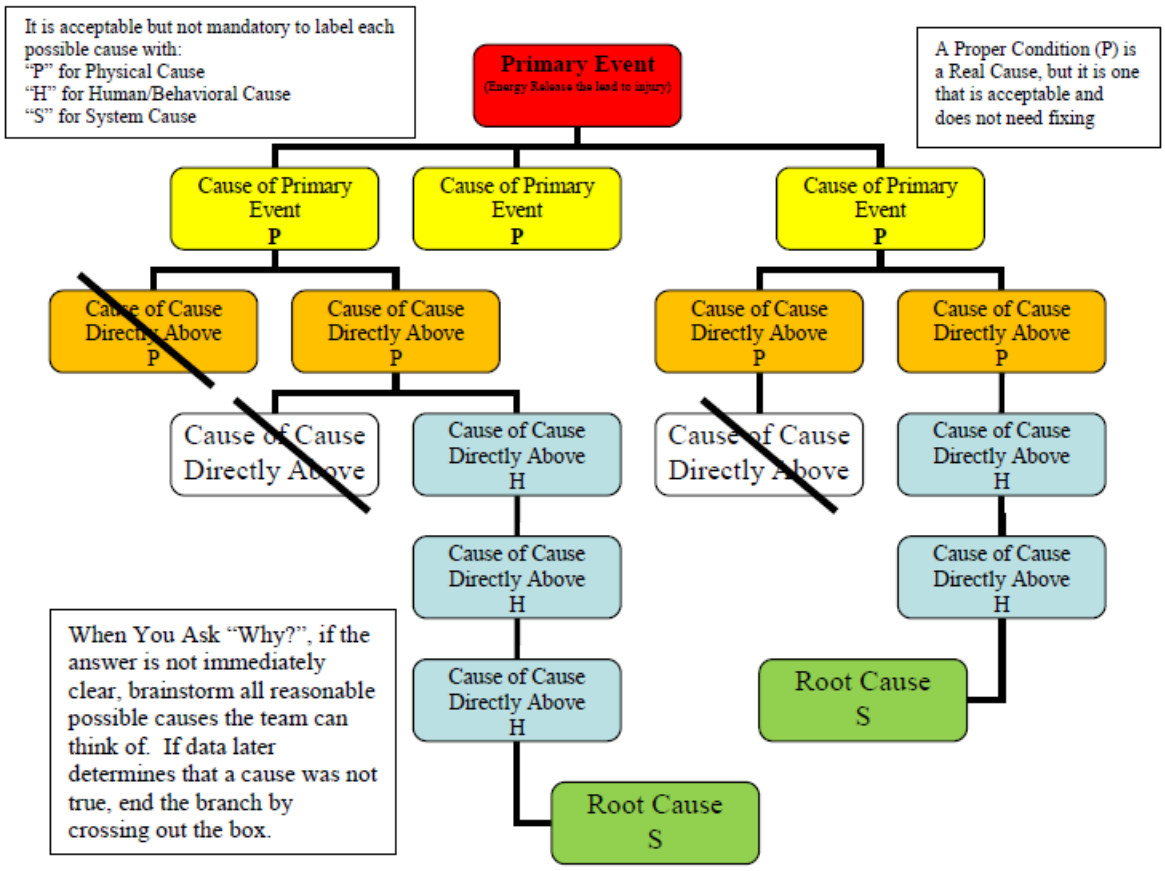
I have completely filled out this form to the best of my knowledge:

Supervisor/ Forman Name: _____

Signature: _____ Date: _____

Attachment 2

BURKHOLDER'S Heating and Air Conditioning, Inc.	Burkholder's HVAC



After the first level cause are determined moved down the tree one branch at a time to the end of the branch
Usually one or more Physical Causes come first, followed by one or more human/behavioral causes followed by a single system level root cause
As each box is added, ask "Is this the direct cause of the event or cause in the box immediately above?
There are three ways a branch can end:
1. A Root Cause(system level cause) is discovered
2. A Proper Condition is discovered
3. The potential cause is found not to be a factor in this incident and is lined out, but is left on the tree to add clarity

Attachment 3

BURKHOLDER'S Heating and Air Conditioning, Inc.	Burkholder's HVAC

All Information is required.

Incident Date:	Business Unit:	Location:	Facility/Project Name:
Type of Process:	Type of Equipment:		
Affected Team Members:			
Incident Description:			

Five Why's	Verification
1. Why did the Above Incident Happen?	
2. Why did "1" Happen?	
3. Why did "2" Happen?	
4. Why did "3" Happen?	
5. Why did "4" Happen?	
6. Why did "5" Happen?	
7. Why did "6" Happen?	
8. Why did "7" Happen?	

Root Cause(s): What were the Root Causes of your incident?			
1.	Root Cause Category:		
2.	Root Cause Category:		
Corrective Action(s): (List actions that will be taken to eliminate the Root Cause of the incident)			
1.		Due Date:	Owner:
2.		Due Date:	Owner:

EHS Departmental use Only:	
Notes/Comments	Closure Date:

A

BURKHOLDER'S Heating and Air Conditioning, Inc.	Burkholder's HVAC
Date:	**Name of the Person Collecting Samples:**

Time Sample Collected	Number	Sample Description and Location
	1	
	2	
	3	
	4	
	5	
	6	
	7	
	8	
	9	
	10	

When recording samples, the exact location of the sample needs to be recorded on the log. Additionally the source of the sample needs to be logged. A camera should be used when available to visually document each sample location in addition to the written location description provided above. Accuracy is imperative to ensure accuracy of the incident investigation. Please refer to the Albatross Ventures Safety and Health Program Manual section 1.4.6-1.4.8 for additional guidance with this process.

Attachment 5

	Burkholder's HVAC	Location:

Facilitator:	**Date of Report:**

Best Practice Element	Y	N	Findings/Comments
1. Investigation initiated within 48 hours?[1]			
2. Trained Investigation Leader with the appropriate level of investigation experience?[2]			
3. Appropriate team make-up?[3]			
4. Adequate collection of high quality data?[4]			
5. High quality interviews conducted?[5]			
6. Sequence of events completed?			
7. Why Tree checked for failure of protective systems?			
8. Why Tree or Five Why used to identify root causes and appropriate cause are included in the analysis?[6]			
9. System level root cause identified and validated?[7]			
10. Root causes are addressed with definable, actionable corrective actions? (SMART)			
11. Corrective actions assigned owners/due dates?			
12. High quality incident investigation report?[8]			
13. Report issued within the time frame established by the company/customer?			
14. Report is communicated to all affected employees?[9]			
15. Lessons learned developed and communicated appropriately?[9]			

Notes:

1. Initiation is defined as beginning the data gathering process as required by OSHA

2. The level of experience depends on the investigation requirements, with serious incidents generally requiring facilitators with investigation experience

3. Team includes: Representation from involved company and contractor groups and appropriate outside expertise

4. Data includes facility status at the time of the incident, interview notes, witness statements, inspection reports, sample results, equipment and process history reports, process variable trends, flow diagrams, and/or still pictures, video tapes, and ect.

5. High quality interviews include: Timeliness of interview, written statements from the involved people, adequate level of detail including timeline, correct personnel interviewed complete written record of the interview.

6. Appropriate causes/factors include factors addressing root cause as well as, factors affecting size of the incident, factors addressing effectiveness of PPE or barriers in place, factors affecting the response to the incident

7. Appropriate root causes are the lowest (system) level root causes which we can identify and which we have control to fix.

8. High quality report includes: date of the incident, description of the incident, date investigation started, team members, timeline, investigation technique, root causes, corrective actions, closure dates to the corrective actions

9. Communicating report includes a means to determine that all affected employees have reviewed and have access to the report.

1. Policy Statement

a. It is the policy of Burkholder's to provide all employees with a safe and healthful work environment free from recognized hazards. It is also policy to maintain and actively support a comprehensive employee safety and health program.

2. Purpose

a. The purpose of this policy is to provide a procedure for the initiation and implementation of a Job Safety Analysis (JSA).

b. It should also be noted, that Area Hazard Analysis or (AHA) are required under EM385, along with the daily JHA form.

c. To provide a systematic identification and mitigation of site-specific hazards before work begins.

d. This policy applies to all jobs or tasks where it has been determined that a JSA is necessary due to the job or task frequency and severity of injuries, illness, near incidents, the potential for frequency and severity, any jobs not previously classified as low-risk.

e. All daily tasks must use a daily signed and reviewed JHA, AHA supersedes the daily version.

f. This policy applies to all jobs or tasks including non-routine work that has not be previously performed and analyzed or designated as low-risk.

3. References

a. OSHA Booklet 3071 – Job Hazard Analysis

4. General Requirements

a. A job safety analysis is a technique that focuses on job tasks as a way to identify hazards before they occur. It focuses on the relationship between the worker, the task, the tools, and the work environment. Ideally, after identifying hazards, controls (engineering, work practice, and/or PPE) will be implemented to eliminate or control the hazard to an acceptable risk level.

b. Responsibilities

i. Supervisors-

1. Supervisors must recognize the need for a JSA and initiate completion of a JSA for all jobs and tasks that have not been previously analyzed or identified as low-risk.
2. JHA's shall be performed daily.
3. The supervisor will coordinate the completion of job safety analyses and ensure a written JSA is completed before work commences.
4. Supervisors will review and approve written JSA's once completed.
5. Supervisors must communicate the approved JSA with all affected site employees, addressing the hazards and control requirements of the job task prior to commencing work. The communication of the JSA will be conducted during daily tailgate meetings before work commences and prior to permitting employees to start high risk work.
6. Supervisors must retain all applicable JSAs on site until the job is completed.

ii. Corporate Safety Manager-

1. Corporate Safety Manager or designee will batch review completed written AHAs and JHAs for accuracy and content.

c. Priorities for establishing JSAs should be based on the following:

- **i.** Potential injury or illness severity of the task or job.
- **ii.** Injury or illness severity rate of the task or job.
- **iii.** Frequency rate of the task or job.
- **iv.** Any new tasks or jobs involving new or modified processes, equipment, or significant changes in manpower.
- **v.** Addition or replacement of tools, fixtures, equipment, and machinery; and changes in processes which can affect the safety of the operation will require that the JSA be developed (or revised to include the necessary changes).

d. The Job Safety Analysis and job-specific safety checklist will be used for initial job training to introduce new employees and SSE's (Short Service Employees) to the hazards of the job and the safe work practices required to avoid injuries.

e. When an incident occurs (injury, illness, or near incident event), the JSA will be reviewed to determine whether it needs to be updated to cover a previously overlooked unsafe practice or whether the JSA was not being properly followed.

f. Employee Involvement.

i. Employees will have a unique understanding of the job, and this knowledge is invaluable for finding hazards. Involving employees will help minimize oversights, ensure a quality analysis, and get workers to "buy in" to the solutions by sharing ownership in their safety and health program.

ii. All employees must sign these daily.

g. Written JSA.

i. Observe the employee(s) perform the job and list each step of work activity. Be sure to record enough information to describe each job action without getting overly detailed. Avoid making the breakdown of steps so detailed that it becomes unnecessarily long or so broad that it does not include basic steps.

ii. Review the job steps with the employee(s) to ensure they are complete and cover the entire task being reviewed.

iii. Identify hazards associated with each job step. See (Attachment 1) for a list of common hazards and descriptions to be considered in the creation of the JSA. The following questions should be addressed when completing the JSA form:

1. What can go wrong?

2. What are the consequences? How could it arise?

3. What are other contributing factors?

4. How likely is it that the hazard will occur?

5. Upon completion of the task, what items went right, what items went wrong. Debrief of the task with communications of the lessons learned.

iv. Written JSA form – (Attachment 2)

1. The written JSA form is required to be completely filled out for all tasks that do not have a written standard operating procedure prior to work commencing.

2. The Written JSA Form is required to be completed/revised by on-site personnel for the following additional situations to ensure systematic identification and mitigation of site-specific hazards before work begins:
   a. Job scope changes significantly.
   b. New personnel are added to the work party.
   c. Site conditions have changed beyond those originally identified.
   d. A near miss, incident, or other work stoppage occurs.
   e. A concern is raised as the result of a personal hazard assessment or stop work condition.
3. When a JSA is completed or revised, it must be reviewed with site employees, and any time a new hire, SSE, or any other employee is going to be performing the job task.
4. These reviews must be completed daily by the site supervisor through daily tool-box talks and prior to high risk work commencing.
5. Debrief should also be conducted post job task to identify any other relative areas of improvement.

v. Supervisors with the consultation of their crews should complete the JSA form **(Attachment 2)** on-site before commencing work. The form should be completely filled out by the work crew ensure the following information is captured:

1. The name of the person leading the work, in most case this is the company supervisor/foreman and their name should be the first name on the signature line of the JSA form.
2. The job description or the name of the task the crew will be performing for the day. This is considered the JSA scope.
3. The work location should be documented. This can be accomplished several ways:
   a. By listing the company assigned job number.
   b. By listing the common site name as assigned by the crew.
   c. By listing the assigned name of the location as designated by the customer.

d. By listing GPS coordinates for sites that currently have not received a designated or assigned name/location.

vi. Job Description

1. The steps required to accomplish the task from set up to completion shall be adequately described in the JSA form (Attachment 2). Employees shall describe each step with as much detail to ensure persons not familiar with the job steps can be orientated to the site hazards without being familiar with the overall operation.

2. Once the job steps are established all hazards should be fully accounted for. All hazards should be considered, including actual and potential hazards.

3. The final step to fully completing a JSA is to ensure that each member of the work team has a though understanding of the hazards of the job task and the controls used to mitigate those hazards.

4. Acknowledgement of each member of the work crew is obtained through finalizing the JSA by signature on the reverse side of the JSA form (Attachment 2).

5. Signatures should include each member of the work team, with the JSA lead listed first.

6. Signatures do not finalize the JSA, as every employee under Burkholder's still retains the authority and responsibility to Stop Work if any unsafe condition arises or the job task deviates from the documented JSA. If work deviation occurs, employees shall revise the JSA to ensure mitigation of any new hazards.

vii. Revising & Reviewing the JSA

1. A JSA is only effective if it is reviewed and updated periodically, therefore even if no changes have been made to the job, the written JSA must be updated at least annually.

2. A JSA must be immediately reviewed if an injury or illness occurs on a specific job to determine whether changes are needed in the job procedure or the applicable JSA. This must then be attached to the investigation form upon completion of an accident investigation.

3. A JSA must be reviewed and revised as needed if a close call or near-miss has resulted from the job procedure. Attach this to the near miss form, retrain if necessary.
4. Any time a JSA has been revised, training on the new job methods, procedures, or protective measures should be reviewed with all affected site employees performing under the applicable JSA by their immediate supervisor prior to commencing work.

h. Job Safety Analysis Team

i. The below listed personnel may be assembled to develop a job safety analysis; team members will be chosen as appropriate for the specific job to be analyzed:

1. Safety representative.
2. Operations Manager.
3. Field Supervisor.
4. Foreman.
5. Employees.
6. Subcontractors - when applicable.
7. Owner representative – when applicable.

i. The Job Safety Analysis shall include a verification action to ensure controls do not introduce or create additional hazards to employees or other personnel on the job site. Verification must be completed prior to a JSA being modified, revised, or before re-issue.

5. Record Retention

a. All JSA's should be periodically reviewed by the Corporate Safety Manager for completeness and accuracy.

b. JSA's should be retained for at least one year.

c. JSA's that require additional permits as controls; such as Hot Work, CSE, Excavation, or Customer General Work permits shall also be retained for at least one year.

d. Revisions or corrections to existing JSA's post safety department review should be returned to the respective supervisor/foreman for review. The supervisor/foreman

affected by the revised JSA shall use the reviewed JSA as a toolbox talk for crews to ensure continual improvement.

6. Training

a. Supervisors shall be trained on the purpose of a JSA, his/her responsibilities regarding JSAs, how to complete a JSA, and all the elements of this written program including hazard identification. All supervisors on the project must attend at least one of the subcontractors JHA per week.

b. Employees shall be trained on the purpose of a JSA, his/her roles and responsibilities regarding JSAs, and all the elements of this written program. Employees shall also receive job specific hazard identification training to coincide with completing a JSA.

c. Employee shall be trained on the safe use of any additional protective measures required by the applicable JSA.

7. Definitions

Job Safety Analysis- The JSA is a tool for analyzing a task, specifically in the area of health, environment, and safety. This analysis occurs at the work site before work begins and involves those individuals that may be affected by the task. The JSA should identify the hazards present at the time the work starts as well as identify specific mitigation actions necessary to prevent incidents. After the analysis is done, it may be kept as a reference for future similar operations. Since the JSA is a tool intended for individuals and teams performing the work, it should be developed in the language appropriate for the entire work crew (sometimes multiple languages and/or verbal translation may be needed).

It includes a breakdown of each step of the work, hazards associated with each step, and the final safe plan to deal with those hazards. Refers to both:

(1) The analytical process of developing safer job procedures, and

(2) A written document that captures the results of the analysis.

Attachment 1 List of Common Hazards
Attachment 2 JSA Form (2 Pages)

OSHA list of Common Hazards and Descriptions

HAZARDS	HAZARD DESCRIPTIONS
Chemical (Toxic)	A chemical that exposes a person by absorption through the skin, inhalation, or through the bloodstream that causes illness, disease, or death. The amount of chemical exposure is critical in determining hazardous effects. Check Material Safety Data Sheets (MSDS), and/or OSHA 1910.1000 for chemical hazard information.
Chemical (Flammable)	A chemical that, when exposed to a heat ignition source, results in combustion. Typically, the lower a chemical's flash point and boiling point, the more flammable the chemical. Check MSDS for flammability information.
Chemical (Corrosive)	A chemical that, when it comes into contact with skin, metal, or other materials, damages the materials. Acids and bases are examples of corrosives.
Explosion (Chemical Reaction)	Self-explanatory.
Explosion (Over Pressurization)	Sudden and violent release of a large amount of gas/energy due to a significant pressure difference such as rupture in a boiler or compressed gas cylinder.
Electrical (Shock/Short Circuit)	Contact with exposed conductors or a device that is incorrectly or inadvertently grounded, such as when a metal ladder comes into contact with power lines. 60Hz alternating current (common house current) is very dangerous because it can stop the heart.
Electrical (Fire)	Use of electrical power that results in electrical overheating or arcing to the point of combustion or ignition of flammables, or electrical component damage.
Electrical (Static/ESD)	The moving or rubbing of wool, nylon, other synthetic fibers, and even flowing liquids can generate static electricity. This creates an excess or deficiency of electrons on the surface of material that discharges (spark) to the ground resulting in the ignition of flammables or damage to electronics or the body's nervous system.
Electrical (Loss of Power)	Safety-critical equipment failure as a result of loss of power.
Ergonomics (Strain)	Damage of tissue due to over exertion (strains and sprains) or repetitive motion.
Ergonomics (Human Error)	A system design, procedure, or equipment that is error-provocative. A switch goes up to turn something off.
Excavation (Collapse)	Soil collapse in a trench or excavation as a result of improper or inadequate shoring. Soil type is critical in determining the hazard likelihood.

Job Safety Analysis

In the case of an incident, the following people will be contacted:
Supervisor
Safety:
Other:

Job/Task: _____ Project #/Location: _____ Date: _____

Work Location: _____ Employee(s): _____

What is the most hazardous part of this job and what are you going to do to control the hazard? _____ SSE ☐ Mentor ☐

- Are you properly trained to complete these tasks?
- What do you need to ensure this job is completed injury and incident free? _____
- What Conditions, distractions, job changes could call for the need to use a Stop Work Authority? _____

Emergency Site Plan:

Site Location Address:	Closest Hospital Name and Location:
Supervisor Number:	Has the Muster Station been Identified? ☐ Yes ☐ No
Contractor Number:	Please Explain Location: _____
Safety Contact Number:	_____
Office Number:	_____

Emergency Number:	
Hospital Number:	
Are employees aware of/ location of:	
Fire Extinguishers?	☐ Yes ☐ No
First Aid Kits?	☐ Yes ☐ No
Spill Response Procedures?	☐ Yes ☐ No
Emergency Action Plan?	☐ Yes ☐ No
All Emergency Numbers?	☐ Yes ☐ No

Examine each step carefully to find and identify hazards or potential dangers that could lead to illness, injury or property damage. Consider all of the following:

Chemical Hazards
Inhalation☐ Skin Contact☐ Absorption ☐ Ingestion☐ Injection☐

Biological Hazards
Mold ☐ Blood Borne Pathogens☐ Plant/Insect/Animal ☐

Physical Hazards
Electrical ☐ Fire/Explosion ☐ Noise☐ Radiation ☐ Thermal Stress ☐ Slips/Falls☐ Struck By/Against☐ Pinch Point/Line of Fire☐

Ergonomic Hazards
Repetition☐ Force ☐ Vibration ☐ Awkward Posture ☐ Contact Stress ☐ Work Area Design☐

Sequence of Job Steps	Potential Hazard(s)	Recommended Action/Procedure

2.0 Job Safety Analysis

Additional PPE Required:	Face Shield ☐ Chemical Gloves ☐ Chemical Suit ☐ Rubber Boots ☐ Chemical Goggles ☐ Leather Gloves ☐ Cut Resistant Gloves ☐ Respiratory Protection ☐ Arm Protection ☐ Hearing Protection ☐ Fall Protection ☐ Steel Toe Boots ☐ Safety Glasses ☐ Other_____
Required Permits/Safe Work Plans:	General ☐ Hot Work☐ Confined Space ☐ Trenching/Excavation☐ Overhead lines☐
Gas Detection Equipment Needed:	H2S☐ LEL ☐ O2 ☐ Co ☐ Other_____
List of Hazardous Substances MSDS Reviewed: YES ☐ NO ☐ N/A ☐	List:
Site Control:	Barricades☐ Signs ☐ Caution Tape ☐ Designated Area for Vehicles☐ Heavy Equipment Spotter☐ Other:_____
Environmental Conditions:	Weather: Terrain: Wildlife:
Hazardous Energy Control:	LO/TO Complete ☐ LO/TO Devises in place ☐ Isolation Verified ☐ Stored Energy☐ Line of Fire ☐ Electrical ☐ Pneumatic ☐ Mechanical ☐ Thermal ☐ Chemical ☐
Tools and Equipment :	Pre-use inspections complete☐ Trained in use of equipment/inspection ☐ List tools/equipment used_____

JSA Review By:

Name:	Signature:

Safety Department Comments: _____

1. **Purpose**
   - **a.** It is the policy of Burkholder's to provide all employees with a safe and healthful work environment free from recognized hazards. It is also policy to maintain and actively support a comprehensive employee safety and health program.
   - **b.** This Short Service Employee (SSE) program applies to employees who have less than 6 months service with the company or craft.
   - **c.** Sub-contractors shall also comply with requirements of this written program OR have their own company program meeting at least the minimum requirements of this program.
2. **Purpose**
   - **a.** To ensure that Short Service Employees are identified, appropriately supervised, trained and managed in order to prevent incidents such as personal injury, injury to others, or damage to property or the environment.
   - **b.** To ensure Short Service Employees have an initial orientation of safety requirements prior to performing work (under direct on-site supervision for a period of at least 6 months).
3. **General Requirements**
   - **a.** Responsibilities
     - **i.** Supervision
       1. Ensure the requirements of this written program are implemented for every project/job.
       2. Submit the Short Service Employee form(s), or the host employer's SSE form, to the designated host employer contact.
     - **ii.** SSE Mentor.
       1. Mentor shall be responsible for overseeing Orientation, Training and Observation of SSE during first six months of employment. The SSE's safety will be of highest priority while learning the new job and unfamiliar tasks.
       2. Mentor will coach and supervise work.
       3. The mentor shall accompany the SSE at all times when on site.
       4. The mentor can only be assigned one SSE at a time.

iii. Short Service Employee (SSE).

1. SSE shall consult with and listen to the Mentor.

2. SSE is responsible for performing work as directed.

3. SSE will always have the responsibility to speak up when s/he believes work or conditions are unsafe.

4. Identification. This can be accomplished by using colored hard hats, reflective hat stickers or bands, vest, or any similar means. Where host employer requirements call for specific identifiers, SSE employers will be identified accordingly.

b. Mentoring Process

i. A mentor will be assigned to each SSE. Only one mentor will be assigned to each SSE; multiple SSEs may not be assigned to one mentor.

ii. Mentors shall be experienced and knowledgeable in the associated work and are required to fulfill their responsibilities as described in this program.

iii. Mentors must meet the following requirements to be considered for the mentoring position under this SSE Program:

1. No recorded Safety, Health or Environmental deficiency.

2. Completed and passed all required Burkholder's trainings.

3. Obtained the OSHA 10-hour.

4. Completed required Defensive Driving Courses.

5. Must have been employed for one calendar year.

6. Willing to accept all responsibilities which are required under the SSE Program.

c. Crew Makeup

i. A SSE may not work alone.

ii. Crew sizes of less than 5 shall have no more than one SSE.

iii. Crews that have more than 20 percent SSE personnel shall only be permitted with written approval from the host employer.

iv. A single person crew cannot be a SSE, unless granted a variance for such work as described below:

1. An exception to the mentor/trainer requirement may be granted for non-gang related activities (e.g., welders, heavy equipment operator, truck drivers, etc.) To be eligible for an exception, the employee must have a high level of previous work experience in the same job family.
2. An exception may also be granted for a supervisor with a high level of previous work experience in the same job family.
3. Exception requests must be submitted in writing and approved by the host employer.

d. SSE Monitoring

i. SSE's will be continuously monitored for compliance with health, safety and environmental requirements for 6 months.

ii. If, at the end of the 6 month period, the SSE has worked safely, adhered to Health Safety and Environmental requirements, and has no recordable incidents, the identifier will be removed and the employee will no longer be considered a SSE.

iii. If the SSE does not complete the 6 month period in compliance with stated requirements, the Supervisor shall get written approval to return the SSE to the host employer's property.

e. Notification

- **i.** The host employer will be notified of the presence of SSE personnel using the Short Service Employee Form – **Attachment 1**.
- **iv.** Where host employer requirements call for a specific notification procedure, the host employer's requirements will be followed.
- **v.** Presence of an SSE will be communicated during morning HSE Meetings.

4. Training

a. SSEs will receive the following training within 6 months of the initial employment date:

- **i.** OSHA 10 hr. Outreach Course
- **ii.** First Aid / CPR / AED – through a recognized agency/association such as the American Red Cross, National Safety Council, etc.
- **iii.** Defensive Driving Course.

iv. Safety Orientation. An initial employee orientation shall be provided to the SSE prior to starting any work activity. The orientation shall include, at a minimum, the following elements:

1. Management Commitment to Safety.
2. Review of new hire orientation.
3. General Safety Rules (and obtain signature). Emphasis that SSE are not permitted to work alone.
4. General requirements for personal protective equipment.
5. Injury reporting and medical follow-up procedures.
6. Review regulatory and job skills training specific to immediate job tasks.
7. Required participation in safety meetings and pre-job and JSA process.
8. Site-specific orientation presented by Host Employer Representative. Minimum site specific orientation shall include: operations overview, emergency action plan, facility sign-in and sign-out, hazard identification and reporting, Hazard Communication information.

5. Definitions

b. Short Service Employee (SSE) – Any employee or personnel with less than 6 months with Burkholder's, or less than 6 months experience in the same job type to be performed.

Attachment 1

Short Service Employee (SSE) Form **PAGE 1**

The project Supervisor must complete and submit form to the Host Employer Contact for approval prior to arrival on location. The Host Employer Contact must approve the individual SSE before he/she arrives on location.

I. SSE Information

Contractor Company Name: _____ Date: _____

SSE Name: _____

Date of Employment: _____ Current Job Title _____

Years Related Exp _____ Experience in Current Pos _____ Yrs _____ Mos

Is this employee in compliance with the Substance Abuse Policy? ☐ Yes ☐ No

Have Ligonier Group and Host Employer policies been reviewed with SSE? ☐ Yes ☐ No

Who has been assigned as the SSE's mentor? _____

Mentor's Experience: _____ Yrs _____ Mos

List training provided to the SSE:

_____ _____

_____ _____

_____ _____

_____ _____

SSE(s) identified by: ☐ Hard Hat – HI Vis Orange ☐ Other:

II. SSE Crew Composition Requirements

Choose one of the crew types below. If any of the stated limitations are exceeded, proceed to Variance Information (Section IV.)

☐ Single person crew – cannot be an SSE (Variance Required)

☐ 2 – 4 person crew – no more than one SSE

☐ 5 or more person crew – no more than 20% SSE(s) per crew

☐ Exceeding 20% SSE per crew (Variance Required)

III. SSE Review and Approval

Supervisor: _____ Date _____

Host Employer Contact: _____ Date _____

Attachment 1 *(continued)*

Short Service Employee (SSE) Form **PAGE 2**

IV. Variance Information

This Section is to be filled out whenever standard conditions or any other element of the Short Service Employee Policy cannot be met.

Variance Justification (What are the current circumstances and what will be done to ensure an acceptable level of risk?)	
Alternatives to Variance (If the variance is denied, what are the alternatives to completing the scope of the work? Briefly detail the cost and operational impact of the alternatives.)	

List the steps to be taken to manage to the SSE risk to an acceptable level:

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9.
10.

V. Variance Review and Approvals

Variance Expiration Date: _____

Host Employer Contact: ☐ Approves ☐ Denies

Signature: _____ Date: _____

Supervisor: ☐ Approves ☐ Denies

Signature: _____ Date: _____

1. Policy Statement

a. It is the policy of Burkholder's to provide all employees with a safe and healthful work environment free from recognized hazards. It is also policy to maintain and actively support a comprehensive employee safety and health program.

b. Specifically, it is the policy of Burkholder's that the use, sale, purchase, transfer, possession or presence in one's system of any controlled substance (except medically prescribed drugs) by any employees while on company premises, engaged in company business, while operating company equipment, or while under the authority of the Company is strictly prohibited. The use, sale, purchase, transfer, possession or presence in one's system of alcohol by any employees is forbidden while on the company's premises.

c. Throughout this document the term "This Company" is synonymous with Burkholder's all Non-DOTs. This Company's alcohol and drug program administrator designated to monitor, facilitate, and answer questions pertaining to these policies and procedures is Russell Heyz, Vice President of Construction Services.

2. Purpose

a. The purpose of this document is to set forth the implementation of a program for the testing of alcohol and controlled substances pursuant to the policies and procedures of This Company and to the laws of any country and Federal, State, and local entity in the United States in which This Company operates.

b. This Company values its employees and recognizes their need for a safe and healthy environment. The health and safety of each employee is a serious company concern. Drug or alcohol use may pose a serious threat to employee's health and safety. It is, therefore, the policy of This Company to prevent substance use or abuse from having an adverse effect on This Company's employees. This Company ensures that the work environment is safer and more productive without the presence of alcohol, illegal or inappropriate drugs. This includes drugs in a person's body whether used on or off company property. Public safety is a consideration. In addition, employees have a right to work in an alcohol and drug-free environment and to work with employees free from the effects of alcohol and drugs. Employees who abuse alcohol or use drugs

are a danger to themselves, their coworkers, the general public and the Company assets.

c. All employees are advised that remaining drug-free is a condition of continued employment with This Company. All employees also understand if they are prescribed a drug that may impair them either physically or mentally, that they need to refrain from safety sensitive work and/or be subject to a fitness for duty evaluation by the Company's designated physician.

d. The execution and enforcement of this program will follow set procedures to screen body fluids (urinalysis), conduct breath, saliva, hair or blood testing, for alcohol and drug use. Disciplinary action will be taken as necessary. These procedures are designed not only to detect violations of this program, but to ensure fairness to each employee.

e. This Company retains the sole right to change, amend or modify any term or provision of this program without notice. This program is effective immediately, and will supersede all prior policies and statements relating to alcohol or drugs.

f. This document describes the current program and practice of This Company and its subsidiaries and will be interpreted, administered and amended by the owners of This Company or their named representatives. This program is not intended to and do not confer legal rights or impose legal obligations. This program applies to all employees. The program applies to all employees including rehires, transfers, temporaries and new applicants.

3. References-

4. General Requirements

a. It is This Company's policy to achieve a drug-free work force and to provide a workplace that is free from the use of alcohol and of illegal drugs and controlled substance abuse.

b. Illegal Substances

i. The manufacture, distribution, dispensation, possession, sale or use of illegal drugs by This Company's employees on or off company property, is prohibited.

ii. The manufacture, distribution, dispensation, possession, sale or use of alcohol by This Company's employees while on-duty for This Company or on company property, is prohibited.

iii. All employees in this company are subject to Pre-Employment and Post-Accident testing for drugs and alcohol.

iv. Cooperating in this matter is a condition of employment with this company.

c. Alcohol use

i. An employee may not possess, manufacture, distribute, consume or be under the influence of alcohol while on company premises.

ii. No employee may report for duty or remain on-duty on company premises with an alcohol concentration of .02 or greater

iii. Any employee on company premises with an alcohol level greater than .02 is suspended from duty without pay for one shift. Documentation of this test is considered a written warning that company policy has been violated. This suspension will be without pay with a termination option at the sole discretion of the employer. If at management discretion employment continues, at his or her own expense, the employee will be required to have a return-to-duty alcohol test with a negative result before returning to duty. Such an incident will serve the same as written notice, and a second offense will result in termination of employment.

iv. Employees on company premises are not permitted to possess alcohol in any consumable form. This prohibition includes medications containing alcohol. In addition, no alcohol is to be consumed during working hours, i.e. lunch.

v. Refusal to take a required test will result in the same consequences as a positive test positive result.

vi. Employees who are advised to enroll in an alcohol treatment or counseling program must enroll in such program and adhere to the requirements of the program.

vii. The use, possession, sale, or distribution of alcohol is forbidden on company premises.

d. Drug Use

i. Employees may not use any drugs which could cause him/her to test positive for drugs.

ii. Employees may not use any drugs which may cause him/her to test positive, except with a doctor's prescription, and then only, if the doctor has advised the employee that the drug will not adversely affect the employee's ability to safely perform his/her job

iii. Employees may not refuse to take a drug test such as is specified by the policies and procedures of this Company.

iv. Employees may not use, possess, manufacture, distribute, dispense, or sell illegal drugs, whether on or off Company premises, whether during working hours or not.

v. Employees may not be under the influence of an illegal drug or engage in controlled substance abuse on Company premises, or while engaged in Company business or in Company-supplied vehicles whether during working hours or not.

vi. Employees may not test positive for illegal drugs or controlled substances.

vii. Employees may not perform safety sensitive functions if they are under the influence of a prescribed medication that may impair them either physically or mentally and may be subject to a fitness for duty evaluation under circumstances of such prescription medications.

viii. Employees may not switch or adulterate any urine sample submitted for testing.

ix. Employees may not submit a false sample for testing.

x. Employees may not refuse to consent to testing or refuse to submit a sample for testing when required by Company representatives.

xi. Employees who are advised to enroll in a drug treatment or counseling program must enroll in such program and adhere to the requirements of the program.

e. All employees specified under the general requirements in this document must comply with the rules and regulations of the testing program as set forth by the policies and procedures of this Company.

f. Any employee who tests positive for drugs and remains in the employment of This Company is responsible for fees for any return-to-duty and follow-up testing required not covered by This Company's insurance.

g. CONSEQUENCES FOR VIOLATION OF THIS POLICY

i. The employee of This Company who violates this policy and/or tests a verified positive for drugs or alcohol will be subject to disciplinary action which may include suspension from duty without pay or termination at the sole discretion of the employer. A Substance Abuse Professional (SAP) selected by the Company and which is DOT certified, utilizes a Non Dot evaluation and treatment program which mirrors DOT SAP, must evaluate the suspended employee and complete any program recommended by that professional. All testing or required activity as the result of a positive drug test not covered by insurance will be at the employee's own expense.

ii. The employee on company premises who tests greater than .02 for alcohol will be suspended from duty without pay for 24 hours. The alcohol level will be documented in the employee's drug and alcohol file and the occurrence constitutes a warning.

iii. Employees subject to testing must, prior to testing, sign an approved form agreeing to the testing, authorizing the release of test results to the company's testing administrators and if appropriate the employee's supervisor and the company's higher management. Such information may be used in connection with Company business and for purposes of considering agreement and disciplinary actions. Such information may be disclosed, when required, to Government agencies and to others upon valid legal requests, legal proceedings, and other situations to protect the interest of and otherwise be in accordance with policies or employees data.

iv. An employee who refuses a test will be treated as though the test were positive.

v. Employees who are advised to enroll in a drug treatment or counseling program must enroll in such a program and adhere to that program's requirements.

h. TESTING PROCEDURES

i. The employee selected for testing will be notified that it is his/her turn to be tested and be instructed to proceed to the collection site.

ii. The employee will have a limited time to reach the collection site. Failure to arrive at the site in a timely manner constitutes a violation of this policy and may be ruled as an attempt to adulterate a test.

iii. Specimen collection will be conducted in accordance with applicable state and federal law. Collection may be of urine, saliva or hair or any other method standard in the drug testing industry, which ever testing method the company deems appropriate. Standard chain-of-custody procedures will be followed.

iv. This Company's employees may be tested for alcohol or for drugs. Employees registering a reading or greater than .02 on an alcohol test must cease any safety sensitive functions including driving any company vehicle. A determination to drive or operate equipment in spite of a positive test constitutes a violation of This Company's' policy and the result is immediate termination.

v. Analysis: Any analysis of a specimen will be conducted with strict compliance with federally approved chain-of-custody procedures, quality control, maintenance and scientific analytical methodologies.

vi. A medical review officer contracted by the company's drug testing administrator will contact any employee testing positive for a controlled substance. The MRO will provide the employee with an opportunity to explain the use of any legally prescribed drug. Documentation from the prescribing physician will be required. Discussions between the employee and the MRO are confidential, and the company does not have access to any of the information discussed except the actual result of the test.

vii. If there is a medical explanation for a positive drug test, the MRO will report the test result to the company as negative. Positive tests without a valid medical explanation are ruled positive.

i. CONFINDENTATAILITY

i. All drug and alcohol-testing activity is strictly confidential. The alcohol and drug program administrator will forward test results to the company management. Positive test results will be released to a medical review officer for review. Negative test results will be transmitted directly to the program administrator and designated individuals within the company.

ii. Except as required or authorized by the law, alcohol and drug testing information will not be released without a written request from the employee.

j. TYPES OF TESTING

i. The company will conduct pre-employment, random selection, post-accident, return to duty and follow up drug and/or alcohol testing.

k. SUBSTANCE ABUSE AWARENESS PROGRAM

i. To assist employees in understanding and avoiding the perils of illegal drug and controlled substance abuse, and to be sure that This Company's employees understand the requirements of this policy, This Company will provide an explanation of the policy. Employees will be required to verify their understanding of this explanation in writing. The persons named or in the positions designated in the second paragraph of this document are available to answer questions regarding Employee and company obligations under this law.

5. Training

a. All employees of this company will be trained in the following:

i. Requirements set forth by this program and this company's policy on Drug/ Alcohol use

ii. Types of testing

iii. Confidentiality of this program

6. Definitions

a. When interpreting or implementing this program, the following definitions apply:

i. "**Alcohol"** means the intoxicating agency in beverage alcohol, ethyl alcohol, or other low molecular weight alcohol including methyl and isopropyl alcohol.

ii. "Alcohol concentration (or content)" means the alcohol in a volume of breath expressed in terms of grams of alcohol per 210 liters of breath as indicated by an evidential breath test. Alcohol use means the consumption of any beverage, mixture, or preparation, including any medication containing alcohol which, when consumed, causes an alcohol concentration in excess of those prescribed by the same federal regulations set for cdl drivers in 49 CFR, Part 382, Subpart B (FMCSR)

iii. "Collection site" means a place where individuals present themselves for the purpose of providing breath, body fluid, or tissue samples to be analyzed for specified controlled substances. The site must possess all necessary personnel, materials, equipment, facilities and supervision to provide for the collection, security, temporary storage and transportation or shipment of the samples to a laboratory

iv. "Controlled Substance" has the meaning assigned by 21 U.S.C. 802 and includes all substances listed on Schedules I through V as they may be revised from time to time (21 CFR 1308). The term controlled substance abuse includes prescribed drugs not being used for prescribed purposes or in a prescribed manner.

v. Employee means any person employed by This Company.

vi. Fitness for Duty means an employee is subject to an evaluation to determine their ability to work in safety sensitive functions.

vii. Illegal drug means drugs and controlled substances, the possession or use of which is unlawful. Controlled substance is defined in these definitions.

viii. A follow-up test is the test an employees who has returned to duty after a positive test must have. The follow-up test must be unannounced.

ix. "Medical Review Officer" ("MRO") means a licensed M.D. or D.O. who meets the requirements set by the U.S. Department of Transportation for

regulatory testing. The MRO has special training in the recognition of drug abuse.

x. "On duty time" means all time from the time an employee begins to work or is required to be in readiness to work until the time he/she is relieved from work and from all responsibility for performing work.

xi. Post-Accident testing – any work-related accident which requires a trip to a medical facility for treatment.

xii. Prescription Medications are those issued by a licensed health care professional.

xiii. Random tests are those selected at random by a computer-generated program. Under the random selection process all employees registered in a given poll have an equal opportunity to be selected each time the random is drawn. Random tests are unannounced.

xiv. The return-to-duty test is the test the employees must have before returning to duty after a positive test.

7. Policy Statement

a. It is the policy of Burkholder's, to provide all employees with a safe and healthful work environment free from recognized hazards. It is also policy to maintain and actively support a comprehensive employee safety and health program.

b. Burkholder's will comply with the OSHA Fall Protection standard, 29 CFR 1910 Subpart D and 29 CFR 1926.501, 502 and Subpart M, through implementation of this written program.

8. Purpose

a. Prevent fall related incidents.

b. Ensure fall hazards at the jobsite or workplace are identified and adequate controls implemented.

c. Provide a model for adequate and effective Fall Protection Training.

d. To inform employees of the contents of the OSHA Fall Protection Standard (29 CFR 1926 Subpart M).

e. To inform employee of the contents of the OSHA Fall Protection Standard (29 CFR 1910 Subpart D).

9. References

a. 29 CFR 1910 Subpart D

b. 29 CFR 1926 Subpart M

10. General Requirements

a. Application

i. This Fall Protection Program applies to all employees involved in work operations with actual or potential fall exposures.

ii. Sub-contractors of Burkholder's shall also comply with requirements of this written program OR have their own written program meeting at least the minimum requirements of the OSHA Fall Protection Standard (29 CFR 1926 Subpart M).

b. Responsibilities

i. Management

1. Ensure necessary and adequate fall protection equipment is available.

2. Ensure periodic reviews of this written program are conducted.
3. Ensure periodic audits of employees utilizing fall protection are conducted. If deviations or inadequacies are identified, management will take necessary action to correct.
4. Ensure an adequate level of training is provided for all employees covered by this program.

ii. Enforcement.

- **a.** Management shall hold each Supervisor/Foremen accountable for individual performance and their employees' performance ensuring adherence to the zero-tolerance expectation regarding fall protection violations (i.e. fall protection violations are simply not acceptable).
- **b.** Accountability is established through implementation of the Company's corrective action (discipline) policy.
- **c.** Ensure an investigation is conducted for all incidents involving fall-related incidents. Causes and deficiencies should be identified and corrective actions implemented to prevent recurrence.
- **d.** Supervisors/Foreman
- **e.** Ensure the requirements found within this program are being followed through periodic audits.
- **f.** Ensure employees are provided with necessary and adequate fall protection equipment.
- **g.** Enforcement.
- **h.** Supervisors/Foremen shall hold each employee accountable to the zero tolerance expectation regarding fall protection violations (i.e. fall protection violations are simply not acceptable).
- **i.** Accountability is established through implementation of the Company's corrective action (discipline) policy.
- **j.** Ensure that all employees covered by this program have access to and review this written program.

iii. Employees

1. Employees shall comply with the requirements stated in this program. Failure to comply shall result in disciplinary action according to the Company's corrective action (discipline) policy.
2. Employees shall not circumvent any procedure or device intended to protect them from fall related hazards.

c. Fall Protection Plan

- **i.** Fall Protection is required when employees are working on an unguarded surface 6 feet or more above a lower level; however, the company will adopt a more strict requirement if a condition of contract or at the request of the host employer (customer).
- **ii.** Fall hazards should be identified during a Pre-Job Hazard Analysis and/or the Job Safety Briefing and Hazard Assessment; however, due to the ever-changing scope and nature of work in our business, hazardous conditions (fall hazards) may present themselves at any time. Therefore, periodic inspections by a competent person will be conducted to ensure controls are established and affected employees shall be trained to recognize such hazards.
- **iii.** Fall Protection Competent Person - "one who is capable and qualified to identifying existing and predictable fall hazards in the surroundings or working conditions which are dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them."
  1. The competent person is typically the site foremen and will be assigned to:
     - **a.** Recognize fall hazards.
     - **b.** Warn employees if they are unaware of a fall hazard or acting in an unsafe manner.
     - **c.** Be on same working surface and in visual sight.
     - **d.** Stay close enough for verbal communication.
     - **e.** Not have other assignments that would take monitor's attention from the monitoring function.

d. If possible, conventional fall prevention and protection methods shall be utilized on all applicable job sites and projects.

i. Conventional fall prevention methods include standard guardrail systems, controlled access zones, and warning line systems, and personal fall arrest systems. Personal Fall Arrest Systems include the use of approved fall protection equipment such as a harness and shock-absorbing lanyard, safety nets, retractable lanyards, horizontal and vertical lifelines, etc.

ii. If conventional methods cannot be used, a written site-specific fall protection plan will be developed and approved by the Corporate Safety Manager (for example, controlled access zones, safety monitor, etc.)

iii. Provisions shall be in place that provide for prompt rescue of employees involved in a fall-related incident.

e. Fall Protection Requirements

i. Fall Protection shall meet requirements of applicable OSHA, ANSI, ASTM, etc. standards.

ii. Fall protection is required 100 percent of the time when exposed to a fall in excess of 6 feet or when required by additional rules. In some circumstances, contracts might require a more strident policy of 4 foot when exposed to fall heights. Employees are expected to comply with the more stringent policy. One hundred percent fall protection is required whether climbing, traveling from Point A to Point B, connecting structural steel, or erecting scaffolds or other temporary platforms. No employee or work operation is exempt from the 100 percent fall protection requirement.

iii. When not protected by any other means of fall protection such as safety nets or scaffold with proper guardrails, employees shall use full body harnesses, shock absorbing lanyards with double locking snap hooks, and an adequate anchorage (fall arrest equipment). To achieve 100 percent fall protection, employees may need to use a double lanyard system and/or vertical or horizontal lifelines, retractable lifelines, or other such approved devices.

iv. Prior to each use, employees shall visually inspect all fall protection equipment for cuts, cracks, tears or abrasions, undue stretching, overall deterioration, mildew, operational defects, heat damage, or acid or other corrosion. Additional items may need to be inspected as required by the

manufacture of the equipment. Equipment showing any defect shall be withdrawn from service.

v. Employees shall rig fall arrest equipment so that they can neither free fall more than 6 feet nor contact any lower object. Anchorage points for fall arrest equipment shall be capable of supporting 5,000 pounds per employee and located above the employee's body harness attachment points shall be independent of any anchorage being used to support or suspend scaffolds or other platforms.

vi. When vertical lifelines are used, each employee shall be protected by a separate lifeline. The lifeline shall be properly weighted at the bottom and terminated to preclude a device such as a rope grab from falling off the line.

vii. Horizontal lifelines should be limited to two persons at one time between supports. Horizontal lifelines shall be designed, installed, and used under the supervision of a qualified person. The horizontal lifeline shall be designed to maintain a safety factor of at least two.

viii. Prior to each use, employees shall visually inspect all fall arrest equipment for cuts, cracks, tears or abrasions, undue stretching, overall deterioration, mildew, operational defects, heat damage, or acid or other corrosion. Equipment showing any defect shall be withdrawn from service.

ix. All fall arrest equipment subjected to impacts caused by a free fall or by testing shall be removed from service.

x. Employees shall not use fall arrest equipment until they have been properly trained in its use.

xi. Fall arrest equipment shall not be used for any other purpose, such as tow ropes or hoist lines.

xii. Stairs, ladders, or ramps shall be provided for all access ways where there is a change in elevation greater than 19 inches.

xiii. Any accidents/incidents regarding fall protection will include an investigation on the effectiveness of the fall protection and corrections, if necessary, implemented.

f. Guardrails

i. Proper guardrails shall be installed on open sides of all floors, walkways and runways where the fall distance exceeds 4 feet.

ii. When guardrails are used for fall protection, they shall consist of a top rail, intermediate rail, and toe board. The top rail shall have a vertical height of 42 inches, the midrail shall be at 21 inches, and the toe board shall be at 4 inches. Guardrail systems shall be capable of supporting a force of at least 200 pounds applied within 2 inches of the top edge. Guardrail systems shall be constructed so that there are no openings greater than 19 inches.

iii. When wood railings are used, the post shall be of at least 2 inch by 4 inch stock spaced not to exceed 8 feet, the top rail shall be of at least 2 inch by 4 inch stock, and the intermediate rail shall be of at least 1 inch by 6 inch stock.

iv. If pipe is used, it shall be at least 1-1/2 inch nominal diameter. If structural steel is used, it shall be of 2 inch by 2 inch by 3/8 inch angles or equivalent.

v. If wire rope is used for railings, it shall have a diameter of at least 1/2 inch and be stretched taut to allow no more than a 3 inch deflection.

vi. Guardrail systems shall be constructed so that when a 200 pound force is applied in a downward direction, it will not deflect to a height less than 39 inches. If wire rope is used for top rails, it shall be flagged at no more than 6 foot intervals with high visibility material.

vii. Proper guardrails shall be installed on open sides of all walkways and runways where the fall distance exceeds 4 feet

viii. Proper guardrails shall be installed on all open sided floors where the fall distance exceeds 4 feet.

ix. Manila or synthetic rope shall not be used as guardrail.

x. Employees shall not stand or sit on guardrails.

g. Personal Fall Arrest

i. Employees shall not use fall arrest equipment until they have been properly trained in its use by a qualified person.

ii. All personal fall arrest equipment (full body harnesses, double locking/shock absorbing lanyards, retractable lanyards/lifelines, etc.) shall be inspected

before each use. In addition, a competent person (other than the user) shall inspect the equipment at least monthly.

iii. Employees shall attach fall arrest equipment so that they can neither free fall more than 6 feet nor contact any lower object. Anchorage points for fall arrest equipment shall be capable of supporting 5,000 pounds per employee and located above the employee's body harness attachment point where practicable. Anchorage points shall be independent of any anchorage being used to support or suspend scaffolds or other platforms.

iv. When vertical lifelines are used, each employee shall be protected by a separate lifeline. The lifeline shall be properly weighted at the bottom and terminated to preclude a device such as a rope grab from falling off the line.

v. Horizontal lifelines should be limited to two persons at one time between supports. Horizontal lifelines shall be designed, installed, and used under the supervision of a qualified person. The horizontal lifeline shall be designed to maintain a safety factor of at least two.

vi. Employees should store all fall protection equipment in a cool, dry place not subjected to direct sunlight.

vii. All fall protection equipment subjected to impacts caused by a free fall or by testing shall be removed from service.

viii. Fall protection equipment shall not be used for any other purpose, such as tow ropes or hoist lines.

ix. Foremen shall ensure that fall protection is available and used as required for all employees they are responsible.

x. If an employee ever feels that any piece of his or her fall protection equipment is unacceptable or unsafe, he/she must contact his/her supervisor, who will immediately turn the equipment in for replacement. Harnesses, lanyards, hooks, etc., shall be visually inspected for the condition of rivets, buckles, stitching, D-rings, tabs, frayed or broken strands, cuts and abrasions, burns, rot, soundness of latching and locking mechanisms, and general appearance. Any piece of fall protection equipment that does not pass inspection will be immediately destroyed and

replaced. Any piece that is subjected to loading will be immediately destroyed and replaced.

h. Hole Covers

i. All floor openings or floor holes shall be protected by guardrails or hole covers.

ii. Hole covers shall be strong enough to support 2 times the maximum intended load, secured against displacement, and properly labeled with a sign that clearly says "HOLE".

iii. If the cover is subject to vehicular traffic, it shall be capable of supporting at least two times the axle load of the largest vehicle expected to cross over it.

i. Ladders

i. Fall protection shall be provided for all fixed ladders.

ii. Step Ladders. Employees shall not stand on either of the top two steps of a step ladder (refer to manufacturer's requirements). When using step ladders near handrail, the handrail shall be raised or other provisions implemented to control the fall hazard.

iii. Extension Ladders. Employees shall always maintain 3-points of contact when climbing extension ladders and may climb to a maximum height of 24-ft without fall protection; when climbing ladders to a height greater than 24-ft, fall protection is required.

11.Training

a. Fall protection training shall be provided for each employee who might be exposed to fall hazards.

b. Initial Training.

i. Employe1es shall be trained on recognizing fall protection hazards (for example: unprotected edges, elevated work, aerial lift equipment, ladders, stairways, etc.) and methods to prevent falls through fall protection.

ii. Before employees are allowed to use a particular fall protection method or system, they shall be trained on proper use and limitations of the method or system. The employee's supervisor is responsible for ensuring that employees received fall protection training.

c. Periodic Training

- **i.** Fall protection training and review is encouraged on a routine basis and shall be discussed during each relevant pre-job briefing.

d. Written fall protection training records shall include:

- **i.** Employee Name
- **ii.** Training Location
- **iii.** Signature of person providing training.

e. Re-Training

- **i.** Re-training shall be conducted when the following are noted:
  1. Deficiencies in training.
  2. Work place changes.
  3. Fall protection systems or equipment changes that render previous training obsolete.

f. At least annually refresher awareness training shall be conducted, when employees are using fall arrest systems.

1. Policy Statement

a. It is the policy of Burkholder's to provide all employees with a safe and healthful work environment free from recognized hazards. Herein after referred to as the "Company." It is also policy to maintain and actively support a comprehensive employee safety and health program.

b. Burkholder's will comply with the OSHA Confined Space standard, 29 CFR 1910.146 and 29 CFR 1926.21, through implementation of this written program.

2. Purpose

a. The purpose of this written program is to provide guidelines, requirements, and procedures that will ensure employee safety when conducting work inside or near confined spaces or permit required confined spaces (as defined within this written program).

b. This document applies to all Burkholder's employees, visitors, and contractors who are assigned to work inside or near confined spaces or permit required confined spaces (as defined within this written program).

c. All spaces shall be evaluated to determine the hazards associated and whether a permit is required for entry activity.

3. References

a. 29 CFR 1910.146- Permit Required Confined Spaces

b. 29 CFR 1926.21- Safety Training and Education

c. API Recommended Practice 54

d. ANSI Z117.1-1995- Safety Requirements for Confined Spaces

4. General Requirements

a. Responsibilities

i. Management

1. Ensure compliance with this written program and 29 CFR 1910.146.

2. Provide Company employees with necessary equipment to work inside confined spaces.

3. Provide support to entry supervisors with regard to site-specific/space-specific task planning, which includes work to be performed, entry procedures, hazard analysis, and hazard control.
4. Assist supervision in coordinating emergency reporting and response (rescue) protocol.
5. Shall document all gas-monitoring equipment calibrated and bump tested per the manufacturer's direction.

ii. Entry Supervisor

1. Evaluate the work to be done and review the potential hazards (In most cases this requires the involvement of a customer/owner representative – See **Attachment 1.**
2. Determine safety procedures, personal protective devices, and rescue equipment required before a job in a confined space begins and tasks are authorized.
3. Ensure all confined spaces are labeled with appropriate signage and confirm all employees are properly notified of confined spaces prior to performing any work on/near any confined space.
4. Perform non-entry atmospheric testing of the permit required confined space with calibrated instrument prior to employee entry to determine a hazardous atmosphere does not exist (see definition section). Should concerns remain as to the presence of contaminants, additional sampling is to be performed. Control methods shall be implemented for hazardous atmospheres that cannot be eliminated.
5. Ensure that all process piping, mechanical or electrical equipment, etc., have been disconnected, purged, blanked off or locked and tagged out as required.
6. Assign qualified employees (entrants) to perform work in a confined space.
7. Assign an attendant to monitor the confined space.
8. Ensure that the assigned confined space entrants and attendant(s) are familiar with the requirements of the entry permit, have been

trained and are familiar with work to be performed, entry procedures, potential hazards and emergency response procedures.

9. Verify that rescue means and reporting protocol, specific to each confined space, have been established.
10. Verifies that all confined space entry permit requirements have been fulfilled by signing the permit only when all acceptable entry conditions have been met and prior to authorizing entry of personnel into the space.
11. Direct entrants to exit space if they recognize danger signs and symptoms.
12. Complete and sign the Confined Space Entry Permit (Attachment 2) listing any safety precautions, communication and personal protective equipment, or other entry requirements for the entrants and attendant. (Reference specific written entry procedures for confined space provided by the customer).
13. Ensure the permit is posted at the entrance to the confined space.

iii. Confined Space Attendant

1. Follow all requirements noted on the confined space entry permit.
2. Track workers inside the space using the authorized entrant log (Attachment 2, pages 2 & 3).
3. Control the area surrounding the space to prevent unauthorized entry and other activities near the space, which may endanger entrants.
4. Observe the activities and provide external assistance to entrants. The attendant will have no other duties, which may take his/her attention away from the work or require him/her to leave the vicinity of the confined space at any time while entrants are in the space.
5. Shall maintain, at a minimum, audible contact with entrants in the confined space. Visual contact is preferred.
6. Is NEVER to leave his/her post while an entrant is inside a permit required confined space.

7. Continuously monitor the air inside the space (from outside the space) and document the atmospheric conditions on the entry permit. The attendant is never to enter the confined space.
8. Follow instructions given by his/her entry supervisor (and instructions provided on the issued confined space entry permit) in the method for contacting rescue personnel in the event of an emergency.
9. Order entrants to immediately evacuate the space, if hazards that may compromise the safety of the entrants are identified.
10. Direct entrants to exit the space when danger signs or symptoms are recognized.
11. When practicable, each confined space will have a separate dedicated attendant. If more than one confined space is to be monitored by a single attendant, means and procedures that will be used to enable the attendant to respond to emergencies in one or more permit spaces shall be established.
12. Will NEVER enter the confined space to attempt rescue of entrants.

iv. Authorized Entrant

1. Follow all entry requirements and only perform work tasks that are identified on the confined space entry permit, utilizing only the equipment and/or chemicals authorized for use.
2. Will wear all required personal protective equipment and personal air monitoring devices as identified on the entry permit or required by the entry supervisor.
3. Prior to entry, know the hazards that may be faced during entry, including information on the mode, signs or symptoms, and consequences of any possible exposures.
4. Keep in communication with the assigned attendant as necessary to enable him/her to monitor status and alert entrants in the event that an evacuation of the space is required.
5. Will leave the space immediately when notified by the attendant or entry supervisor, or if monitoring equipment alarms sound,

ventilation malfunctions or becomes inoperative, warning signs or symptoms of exposure is felt, or any other unanticipated dangerous situation develops.

b. Customers of Burkholder's that request services involving entry into confined space areas should provide a confined space hazard assessment. If the customer does not have confined space hazard assessment(s) available, it is the responsibility of the Company entry supervisor to complete a confined space hazard assessment form (**Attachment 1**) with a designated customer representative BEFORE authorizing entry. From this, the entry supervisor and customer representative shall determine if the space is Permit Required or Non Permit Required.

c. If the space is classified as a Non Permit Required Confined Space, the customer representative and entry supervisor will determine what safety devices, procedures, and protective equipment are required – a confined space entry permit is not required.

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

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

f. If it is necessary to enter the permit space to eliminate hazards or confirm there is no presence of a hazard, the entry shall follow permit required confined space entry requirements. If testing and inspection demonstrate the hazards within the permit space have been eliminated, the permit space may be reclassified as a non-permit confined space for as long as the hazards remain eliminated. NOTE: Control of atmospheric hazards through forced air ventilation does not constitute elimination.

g. The entry supervisor shall document the basis for determining all hazards in a permit space have been eliminated or effectively controlled. Documentation shall include the basis for the determination, date, location of space, and signature of person making the determination – see Attachment 1. The certification shall be made available to each employee entering the space.

h. Provisions and procedures shall be in place for pedestrian, vehicle and other barriers (as necessary) to protect entrants from external hazards.

i. If hazards arise within a space that has been declassified to a non-permit space, each employee shall exit the space. The entry supervisor shall reevaluate the space and determine whether it must be reclassified as a permit space.

j. When multiple employers have employees working in the same space, coordinating provisions and procedures shall be established so that employees of one employer do not endanger the employees of any other employer.

k. Permit Required Confined Space Requirements

i. Only personnel who have been trained and are knowledgeable of the requirements of this procedure will be permitted to be an entry supervisor, authorized entrant or an attendant in a confined space entry.

ii. Before an employee enters the space, the internal atmosphere shall be tested, with a calibrated direct-reading instrument, for the following conditions in the order given:

Oxygen content between.....19.5% - 23.5%

Flammable gases and vapors……. Less than 10% of LEL

Carbon Monoxide……Less than 50 PPM

Other Toxic Contaminants

iii. Conditions that differ from those given above are considered hazardous atmospheric conditions, and may not exist within the space when an employee enters. For spaces with hazardous atmospheric conditions that cannot be eliminated, additional precautions such as ventilation or respiratory protection shall be implemented to control the hazard prior to entry.

iv. Entry procedures shall be readily available to all personnel involved in confined space entry work. These procedures shall be updated and/or revised accordingly when confined space entry conditions change or when new confined spaces are identified.

v. Authorized entrants may be required to wear 4-gas monitoring device equipped with an audible alarm to warn of potentially unsafe or oxygen-

deficient atmosphere. Instruction regarding the operation of the equipment and other precautions will be given prior to use in the confined space.

vi. There shall be a formal rescue plan that should be available on site before any confined space entry. The rescue plan shall address the handling of confined space entry emergencies.

vii. Smoking in confined spaces is prohibited at all times.

viii. Hand-held lights and other illumination shall be equipped with guards to prevent employee contact with the bulb and must be properly grounded.

ix. Electrical equipment taken into confined space areas shall be positively grounded, double insulated and protected by ground fault circuit interruption protection. Battery-operated equipment can also be used.

x. If flammable or combustible liquids were contained previously within the space, explosion-proof electrical equipment and tools will be used. All electrical equipment shall be effectively grounded.

xi. Compressed gas cylinders, except cylinders used for self-contained breathing apparatus, shall not be taken into a confined space.

xii. Manhole and floor type entrance openings with covers removed are to be protected to prevent falls of individuals into the space. Fall protection equipment and/or measures shall be taken for entry into confined spaces with fall-related hazards.

xiii. Should monitoring a complete space be infeasible because of size (exp. reactor core) or is part of a continuous system (exp. sewer), pre-entry testing shall be conducted to the extent feasible before entry is authorized. If entry is authorized, entry conditions shall be continuously monitored in the area where authorized entrants are working.

l. Confined Space Entry Permit Procedure

i. See **Attachment 2** for a blank Confined Space Entry Permit.

ii. A Confined Space Entry Permit must be issued and appropriately completed prior to the entry of any authorized personnel into a permit required confined space.

iii. In most cases the owner will issue the permits and the entry supervisors will verify the information; however, trained entry supervisors may also issue the permit. Note: When visiting customer locations, Company employees shall comply with requirements governed by the respective owners, provided that they meet or exceed the requirements provided herein.

iv. All affected employees will participate in the completion of the confined space entry permit.

m. The confined space entry permit is valid only for the performance of the work indicated, the entrants and attendants identified, and for the location and time specified (one shift maximum). The validation period can extend beyond the end of the normal shift if the work scope doesn't change and the same personnel are assigned to the task. NOTE: Properly trained and knowledgeable entrants and attendants can exchange roles during entry.

n. The contents of any flammable, combustible or other hazardous materials usually stored in the confined space shall be removed; all sources of ignition shall be removed within acceptable limits prior to entry. For spaces with hazardous atmospheric conditions that cannot be eliminated, additional precautions such as ventilation or respiratory protection shall be implemented to control the hazard prior to entry.

o. Non-entry air samples taken prior to employee entry are recorded by the attendant or entry supervisor on the Confined Space Entry Permit. The entry supervisor and attendant shall confirm levels are within acceptable limits before entry.

p. Should air monitoring determine a hazardous atmosphere, the entry supervisor shall follow ventilation requirements to eliminate hazards before authorizing work.

q. Any concerns or previously unidentified hazards encountered during entry work must be immediately reported to the entry supervisor.

r. If a hazardous atmosphere is detected during entry by unprotected employees:

i. Each employee shall leave the space immediately

ii. The space shall be evaluated to determine how the hazardous atmosphere developed;

iii. Measures shall be implemented to protect employees from the hazardous atmosphere; and,

iv. A new entry permit will be completed, before any subsequent entry takes place.

s. The confined space entry permit is to be voided if work in the space does not start within thirty (30) minutes after the atmospheric tests are performed, if significant changes within the confined space atmosphere occur or the scope of work to be performed changes.

t. If work lapses or is interrupted (for example, all workers leave the space) for any period of time during the shift, acceptable entry conditions must be verified prior to re-entry of confined space.

u. The confined space entry permit will be posted at the confined space entrance and only removed by the entry supervisor or permit issuer (owner) at the completion of the job or the end of the shift, whichever is first.

v. The individual removing the confined space entry permit shall date, record the time and initial the permit in the upper right hand corner, which cancels the permit.

w. Copies of canceled confined space entry permits will be maintained by the Company for a period of one (1) year. These permits will be used to conduct a documented annual program review.

x. Ventilation

i. Permit required confined spaces shall have air monitoring conducted prior to authorizing entry. Should a hazardous atmosphere exist, no employee may enter the space until ventilation reduces hazards to the acceptable entry conditions or other controls are implemented.

ii. Should continuous forced air ventilation be used:

iii. An employee may not enter the space until the ventilation has eliminated or effectively controlled the hazardous atmosphere.

iv. The ventilation shall be so directed as to ventilate the immediate areas where an employee is or will be present within the space and shall continue until all employees have exited.

v. The air supply shall be from a clean source and may not increase the hazards in the space.

vi. The atmosphere within the space shall be continuously monitored to ensure that the forced air ventilation is preventing an accumulation of a hazardous atmosphere.

vii. Ventilation equipment shall not introduce a hazard. For example, in a space with a flammable atmosphere, the ventilation equipment shall be intrinsically safe.

viii. Ventilation will be required for all hot work operations (i.e. welding, cutting or grinding).

ix. Compressed air is not to be used for ventilation purposes unless in conjunction with an approved air mover unit. Never use pure oxygen to ventilate a confined space.

x. Vehicles must not be left running near confined space work or near air-moving equipment being used for confined space ventilation.

xi. Should ventilation equipment be interrupted or fail to operate, authorized entrants must exit immediately and may not re-enter until adequate ventilation is restored and the space is retested.

y. Rescue and Emergency Services

i. The Company shall evaluate the designated rescuer's ability to respond to a rescue summons in a timely manner, considering the hazard(s) identified. Note: For example, 1910.34 Respiratory Protection requires that employers provide a standby person or persons capable of immediate action to rescue employee(s) wearing respiratory protection equipment in work areas described as Immediately Dangerous to Life or Health (IDLH) atmospheres.

ii. The Company shall inform the rescuers of the hazards associated with each specific permit space being entered.

iii. The Company shall evaluate and confirm that the rescue service's ability and proficiency with rescue-related tasks and equipment for each specific permit space being entered. Employees designated to provide permit space rescue and emergency services shall receive the following:

iv. Personal Protective Equipment and training on its use, needed to conduct permit space rescues safely.

v. Training to perform assigned rescue duties.

vi. Training in basic first aid and cardiopulmonary resuscitation (CPR).

vii. Periodic rescue drills and practice, at least every 12 months, by means of simulated rescue operations in which they remove dummies, manikins, or actual persons from the actual permit spaces or form representative permit spaces.

z. Non-entry rescue, retrieval systems or methods shall be used whenever an authorized entrant enters a permit space, unless the retrieval equipment would increase the overall risk of entry or would not contribute to the rescue of the entrant. Retrieval systems shall meet the following requirements:

aa. Each entrant shall use a chest or full body harness, with a retrieval line attached at the center of the entrant's back near shoulder level, above the entrants head, or at another point, from which the entrant can be removed from the space. Wristlets can be used in lieu of the chest or full body harness if they are the safest and most effective method.

bb. The other end of the retrieval line shall be attached to a mechanical device or fixed point outside the permit space in such a manner that rescue can begin as soon as necessary.

5. Training

a. All employees involved with confined space entry shall be trained on the elements of this program at the following times:

i. At the beginning of employment or when first assigned duties given by this program;

ii. When there is a change in the employee's assigned duties;

iii. When there is a change in the permit space itself; or

iv. When there is reason to believe there are inadequacies in the employee's understanding of this program.

b. All employees involved with permit required confined space entry shall be trained on the work to be performed, entry procedures, potential hazards, testing equipment, and emergency procedures specific to EACH permit space BEFORE duties are assigned.

c. A record that training has been accomplished shall be maintained including employee name, trainer signature/initials, and dates of training. Training records must be made available to employees and their authorized representative.

6. Definitions

Acceptable Entry Conditions - Conditions (both atmospheric and physical) that must exist in a permit space to allow personnel entry and ensure that individuals can safely work within the space to accomplish the required task.

Atmospheric Testing/Monitoring Device - A calibrated analyzing instrument that directly reads the levels of oxygen, combustible gas, and specific toxic gases (for example, carbon monoxide, hydrogen sulfide, etc.). This device is equipped with an audible alarm that will activate to warn personnel of an unsafe atmosphere. In every permit required confined space entry, monitoring equipment is to be utilized for pre-entry atmospheric checks.

Attendant - An authorized and trained individual stationed outside the confined space who monitors the activities of the authorized entrants and internal and external conditions while work is being performed inside the space.

Confined Space - A space that meets all of the following conditions:

1. Is large enough and so configured that an individual can bodily enter and perform assigned work; AND

2. Has limited or restricted means for entry or exit (examples would be storage tanks, boilers, manholes, silos, pits and degreaser tanks); AND

3. Is not designed for continuous employee occupancy.

Confined Space Entry Permit - A document that is to be completed in full prior to personnel entering and performing work in a permit-required confined space. This permit is initiated by the entry supervisor or customer representative for Company personnel who have job tasks in the space. Other contractor personnel are to complete and post their own entry permits for their personnel work tasks. NOTE: Entry supervisors are not responsible for the employees of other contractors who may also be working in the space. The work scope of other contractors shall be considered when determining potential hazards in a permit required confined space.

Confined Space Hazard Assessment/Evaluation - An in-depth evaluation of a confined space conducted by the owner or entry supervisor to identify hazards (both atmospheric and physical) so a written entry procedure can be developed for use in preparing the Confined Space Entry Permit.

Hot Work Permit - An authorization document issued by the owner for personnel to perform welding or cutting operations outside of designated areas.

ENTRANT(S) - Any authorized and trained individual who enters a confined space for any purpose. Entry is defined as breaking the plane of the confined space access opening with any part of the body.

Entry Supervisor - An authorized and trained individual responsible for determining if acceptable entry conditions are present at a permit space where an entry is planned, for authorizing entry, overseeing entry operations and for terminating entry as required.

Flammable Atmosphere - Two conditions can make an atmosphere flammable:

1. The oxygen in the air (above 23.5%), and

2. A flammable gas, vapor, mist, or dust in the proper mixture or in the "flammable range."

Flammable Range - Flammable limits are the lowest and highest percentages, by volume, of fuel gas to air at one atmosphere that will burn. The difference between the two limits is the flammable range.

1. When the amount of fuel is too little for a self-sustaining reaction, the mixture is said to be too lean. It is below the lower flammable limit or lower explosive limit (LFL or LEL).

2. When the fuel is plentiful, there is an inadequacy of oxygen or the mixture is too rich. It is above the upper explosive limit (UEL).

3. Flammable or explosive atmospheres can possess hazardous gases, vapors, or mists present at a concentration greater than ten percent (10%) of their lower explosive level (LEL). For dusts, this may be approximated as a condition in which the dust obscures vision at five (5) feet or less.

Hazardous Atmosphere - An atmosphere that may expose employees to the risk of death, incapacitation, impairment of ability to self-rescue, serious injury, or acute illness due to:

1. An oxygen concentration below 19.5% or above 23.5%.

2. Flammable gas, vapor, or mist in excess of 10% of the lower explosive limit (LEL).

3. An airborne combustible dust at a concentration that meets or exceeds its LEL.

4. Atmospheric concentration of any substance for which a dose or a permissible limit is published in OSHA's Part 1910 Subpart G or Subpart Z and that could result in employee exposure above the permissible exposure limit.

5. Other atmospheric conditions recognized as immediately dangerous to life or health (IDLH).

Inerting - The displacement of the atmosphere in a permit space by a noncombustible gas (such as nitrogen) to such an extent that the resulting atmosphere is noncombustible. This procedure produces an IDLH oxygen-deficient atmosphere.

Immediately Dangerous to Life or Health (IDLH) - Any condition that poses an immediate or delayed threat to life that would cause irreversible adverse health effects

or that would interfere with an individual's ability to escape unaided from a confined space.

NON-Permit Required Confined Space (NPRCS) - means a confined space that does not contain or, with respect to atmospheric hazards, have the potential to contain any hazard capable of causing death or serious physical harm. If it is necessary to enter a space to eliminate the hazards for classification as a NPRCS, that initial entry will be done as a PRCS entry.

Oxygen-Deficient Atmosphere - An atmosphere containing less than 19.5% oxygen by volume. NOTE: The oxygen level in a confined space can decrease because of work being done, such as welding, cutting, brazing or chemical use (solvents, paints, etc.).

Oxygen-Enriched Atmosphere - Is an atmosphere containing more than 23.5% oxygen by volume. An oxygen-enriched atmosphere will cause combustible materials such as clothing and hair to burn violently if ignited. Oxygen must never be used to ventilate a confined space.

Permissible Exposure Limits (PELs), Ceiling Limits and Short-Term Exposure Limits (STELs) - The airborne concentration of a substance above which exposure is not legally permitted. PELs are an 8 hour time-weighted average exposure value. Short-Term Exposure Limits are based on 15 minutes exposure and Ceiling Limits are concentrations not to-be exceeded at any time.

Permit Issuer - For the purpose of the Confined Space Entry Program, a permit issuer is an individual who is fully trained in confined space hazard recognition and analysis and related air monitoring equipment and can competently complete information required on CSE Permits. In most cases the owner is the permit issuer, however, the entry supervisor may also issue confined space entry permits if approved by the owner.

Permit-Required Confined Spaces (PRCS) - Is a confined space that meets one or more of the following conditions:

1. Contains or has the potential to contain a hazardous atmosphere.

2. Contains a material that has the potential for engulfing an entrant (e.g. liquid or granular).

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

4. Contains any other recognized serious health or safety hazard (e.g., radiation, noise, electricity, fall hazards, moving machinery parts, etc.).

Retrieval system - means the equipment (including a retrieval line, chest or full-body harness, wristlets, if appropriate, and a lifting device or anchor) used for non-entry rescue of persons from permit spaces.

Threshold Limit Value (TLV) - Airborne concentrations of substances that represent conditions under which it is believed that nearly all workers may be repeatedly exposed day after day without adverse health effects. TLV's are published by the American Conference of Governmental Industrial Hygienists (ACGIH).

Attachment 1 Confined Space Hazard Assessment Form
Attachment 2 Confined Space Entry Permit

Attachment 1:

Confined Space Determination and Hazard Assessment

Space ID: _____ Date: _____

Space Location: _____

Entry Description: _____

A. Does the space have ALL of the following characteristics:

1. Is large enough for a person to physically enter?	**YES**	**NO**
2. Has limited or restricted means of entry or exit?	**YES**	**NO**
3. Is not designed for continuous human occupancy?	**YES**	**NO**

If YES was answered to **ALL** of the questions above, this is a **Confined Space.**

Comments:

B. Does the space contain one or more of the following characteristics:

1. Has the potential to contain a hazardous atmosphere? • Oxygen below 19.5% or above 23.5% • Carbon Monoxide level above the OSHA PEL of 50ppm • Explosive gas at 10% of the lower Explosive Limit (LEL) • Any other toxic gas at levels above the respective PEL	**YES**	**NO**
2. Contains material with the potential to engulf an entrant?	**YES**	**NO**
3. Has an internal configuration in which an entrant can be trapped?	**YES**	**NO**
4. Has any other serious safety or health hazard? (explain below)	**YES**	**NO**

Potential Hazard: moving equipment; electrical components.

If YES was answered to any of the questions above, this is a **Permit Required Confined Space.**

Is this a Permit Required Confined Space? ❒ YES ❒ NO

Comment:

Note: If not a permit required confined space, OSHA standard 1910.146 does not apply to this space. Consult other applicable standards.

C. Type of Space (check which apply):

☐ Air Receiver	☐ Bag House	☐ Boiler	☐ Filter System	☐ Silo
☐ Dust Collector	☐ Elec Vault	☐ Fire Box	☐ Sewer	☐ Chiller
☐ Lift Station	☐ Man Hole	☐ Paint Booth	☐ Cylinder	☐ Vessel
☐ Pit	☐ Precipitator	☐ Steam Drum	☐ Degreaser	☐ Other
☐ Storage Tank	☐ Scrubber	☐ Bundle	☐ Hopper	_____
☐ Smoke Stack	☐ Ductwork	☐ Furnace	☐ Pipe Line	_____

D. Space Description:

1. Size of space:

Length: _____ Width: _____ Height: _____

2. Number of openings (to enter / exit): 1 - cover will be removed

3. General description of entrant maneuverability within the space (check one):

☐ Unrestricted ☐ Some restrictions ☐ Extremely limited

E. Actual / Potential Hazards

Indicate in the spaces below if the hazard is an:

Actual Hazard = A	Potential Hazard = B	Not Applicable = N/A
☐ Electrical	☐ Steam	☐ Thermal
☐ Compressed Air	☐ Hydraulics	☐ Cryogenics
☐ Flammable	☐ Radiation	☐ Gravity
☐ Inert	☐ Mechanical	☐ Hot Work
☐ Other (specify →)	_____	_____
	_____	_____

F. General Concerns

Confined Space Determination and Hazard Assessment

1. Is a multi-energy source energy control procedure in place for equipment to be entered?	**YES**	**NO**
2. Will atmospheric monitoring be conducted prior to entry and continuously during entry?	**YES**	**NO**
3. Is there a non-entry plan for rescue? (i.e. retrieval device and harness)	**YES**	**NO**
4. Is there a rescue plan for entry rescue (i.e. local fire department or in-house rescue team) and are they properly trained on this specific confined space?	**YES**	**NO**

If answered NO to any question above, indicate the reason in the spaces provided below:

G. De-Classification/Hazard Abatement:

1. If determined to be a permit space, will it be de-classified? ☐ YES ☐ NO ☐ N/A
   Comment:

Hazard Abatement:

Hazard	Method used to Eliminate the Hazard

H. Evaluator Information

Print Name	_____	Print Name	_____
Position/Title	_____	Position/Title	_____
Signature	_____	Signature	_____
Date	_____	Date	_____

Attachment 2:

Confined Space Entry Permit

Part 1: General Information

Space to Be Entered: _____

Purpose of Entry: _____

_____

Location of Space: _____

Duration of Permit: _____ Date Start: _____ am / pm Stop: _____ am / pm

Permit CANCELED:
Date:
Time:
Initials:

Part 2: Initial Atmospheric Testing

	Acceptable	Initial Result
Oxygen	19.5-23.5 %	
LEL	< 10 ppm	
CO	35 ppm	

Tester Initials: _____
Time: _____

← Complete initial testing and record in the table. For additional toxics, indicate both acceptable limits and initial results.

Test Equip. _____ Serial/Unit No. _____

Part 3: Permit Space Hazards

- ☐ Oxygen Deficiency
- ☐ Oxygen Enrichment
- ☐ Flammable Gas or Vapor
- ☐ Airborne combustibles
- ☐ Toxic Gases or Vapors
- ☐ Mechanical Hazards
- ☐ Electric Shock / Arc Flash
- ☐ Engulfment
- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____

← Check the box next to each potential or actual hazard associated with the space. Include potential hazards not identified in the spaces provided.

Part 4: Preparation for Entry

Check each method of control that was employed for entry:

- ☐ Ventilation
- ☐ Lockout Tagout Tryout
- ☐ Purge-Flush and Vent
- ☐ Inerting
- ☐ Blanking, Blocking, Bleeding
- ☐ External Barricades
- ☐ Confined Space Entry Signs
- ☐ Other: _____

Part 5: Communication Procedures

Entrants will communicate with outside attendent by:

- ☐ Voice
- ☐ Radio
- ☐ Visual
- ☐ _____

Emergency Service

Name of service: _____
Name of contact person: _____
Method of contact: _____
Phone Number: _____

Part 7: Testing Record

Indicate measurement interval: ☐ ____ measurements every _____ minutes **OR** ☐ continuous monitoring (log every 2 hrs)

	Acceptable	Result am/pm	Result am/pm	Result am/pm	Result am/pm	Result am/pm	Result am/pm
Oxygen	19.5-23.5 %						
LEL	< 10 ppm						
CO	35 ppm						

← Complete the table at interval specified. Continue measurements on page 2 of permit - Authorized Entrant Log.

Part 8: Authorized Persons

1. Entry Supervisor
2. Attendant(s) - refer to page 2
3. Entry Personnel - refer to page 2

Print Name _____
Signature _____
Date _____

****Permit NOT valid unless signed** - Entry Supervisor signs when ALL conditions specified on permit are complete.**

Confined Space Entry Permit

Testing Record (continued)

	Acceptable	Result am/pm	Result am/pm	Result am/pm	Result am/pm	Result am/pm	Result am/pm	Result am/pm	Result am/pm
Oxygen	19.5-23.5 %								
LEL	< 10 ppm								
CO	35 ppm								

	Acceptable	Result am/pm	Result am/pm	Result am/pm	Result am/pm	Result am/pm	Result am/pm	Result am/pm	Result am/pm
Oxygen	19.5-23.5 %								
LEL	< 10 ppm								
CO	35 ppm								

Authorized Attendant(s)

List ALL authorized attendants:

(Print First and Last Name) _____ _____

_____ _____

_____ _____

_____ _____

Authorized Entrant(s)

List ALL authorized entrants and the time they enter and leave the space. **TIMES MUST BE ACCURATE.**

Name (First and Last)							
	IN						
	OUT						
	IN						
	OUT						
	IN						
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	OUT						

****CONTINUE OF PAGE 3 IF NECESSARY****

Confined Space Entry Permit

Authorized Entrant(s)

List ALL authorized entrants and the time they enter and leave the space. **TIMES MUST BE ACCURATE.**

Name (First and Last)							
	IN						
	OUT						
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1. Policy Statement

a. It is the policy of Burkholder's to provide all employees with a safe and healthful work environment free from recognized hazards. It is also policy to maintain and actively support a comprehensive employee safety and health program.

b. Burkholder's will comply with the OSHA Control of Hazardous Energy (lockout/Tagout/tryout) standard, 29 CFR 1910.147, through implementation of this written program, which establishes procedures for protecting its workers from the hazards related to the unexpected energizing of machines, equipment, electrical circuits or uncontrolled release of energy.

c. Individual Business units of Burkholder's, may have elements of this procedure which would not apply to their operations.

2. Purpose

a. To prevent injury to an employee or employees from the unexpected energizing of machines, equipment, or electrical circuits under maintenance, service or repair.

b. To prevent injury resulting from the uncontrolled release of hazardous energy. For example: electrical, mechanical, hydraulic, pneumatic, chemical, thermal, stored/residual, or other energy.

c. To comply with the provisions of OSHA standard 29 CFR 1910.147.

3. References

a. 29 CFR 1910.147 Control of Hazardous Energy (Lockout / Tagout)

b. 29 CFR 1910 Subpart S Electrical

c. 29 CFR 1926.417 Lockout and Tagging of Circuits

d. 29 CFR 1926.702 Requirements for equipment and tools

e. NFPA 70E Chapter 1 Article 120 Establishing an Electrically Safe Work Condition

4. General Requirements

a. Responsibilities

i. Management

1. Ensure employees are provided with the necessary equipment to successfully lock out the equipment to be serviced.

2. Ensure periodic reviews, at least annually, of this written program are conducted.

3. Ensure periodic audits, at least annually, of employees utilizing the procedures are conducted. If deviations or inadequacies are identified, management will take necessary action to correct.
4. Ensure an adequate level of training is provided for all employees covered by this program.
5. Ensure employee involvement in the lockout/tagout/tryout process.
6. Ensure an investigation is conducted for all incidents involving lockout/tagout/tryout activity. Causes and deficiencies should be identified and corrective actions implemented to prevent recurrence.

ii. Supervisors

1. Ensure the procedures found within this program are being followed through periodic audits and discipline.
2. Ensure that all employees covered by this program have access to and review this written program.

iii. Employees

1. Employees shall comply with the procedures stated in this program.
2. Employees shall not by-pass any system or procedure intended to protect them from the unexpected energizing of machines, equipment, or electrical circuits under maintenance, service or repair.

b. Hazardous Energy Control Requirements

i. Each authorized employee will be issued individual locks, keys and tags when required by general industry requirements. The locks and tags shall be marked so as to identify the person to whom they belong.

ii. The locks and tags will be:

1. Durable – capable of withstanding the environment to which they are exposed for the maximum period of time that exposure is expected.
2. Standardized – devices shall be standardized within the facility in at least one of the following criteria: color, shape, or size. In the case of tagout devices, print and format shall be standardized.

3. Substantial – Lockout devices shall be substantial enough to prevent removal without the use of excessive force or unusual techniques, such as with the use of bolt cutters or other metal cutting tools.

c. Three forms of hazardous energy control shall be permitted:

i. Individual Employee Hazardous Energy Control Procedure will be followed for minor maintenance, service, adjustment, cleaning, inspection, operating conditions, and the like. The work shall be permitted to be performed without the placement of a lockout/tagout device provided the disconnecting means is adjacent to the equipment on which the work is being performed and is clearly visible to the individual qualified employee involved in the work, and the work does not extend beyond one shift.

ii. The first lock installed in any three forms of hazardous energy control, also the last lock removed, and fitted shall be by the person overseeing the operation.

iii. Simple Lockout/Tagout/Tryout Procedure. All lockout/tagout/tryout procedures that involve only a qualified person(s) deenergizing one energy source (i.e. one set of conductors or circuit part source). Refer to section titled "Simple Lockout/Tagout/Tryout Procedure".

iv. Complex Lockout/Tagout/Tryout Procedure. Refer to section titled "Complex Lockout/Tagout/Tryout". All lockout/tagout/tryout procedures where one or more of the following exist:

1. Multiple energy sources
2. Multiple crews
3. Multiple crafts
4. Multiple locations
5. Multiple employers
6. Different disconnecting means
7. Particular Sequences
8. A job or task that continues for more than one work period.

d. Following the application of lockout or tagout devices to energy isolating devices, all potentially hazardous stored or residual energy shall be relieved, disconnected, restrained & otherwise rendered safe. If there is a possibility of accumulation of stored

energy level, verification of isolation shall be continued until the servicing or maintenance is completed, or until the possibility of such accumulation no longer exists.

e. Sub-contractors involved in operations relating to equipment or machinery lockout that affects Burkholder's employees, must submit their energy control procedures to a Burkholder's management representative. Employees covered under this program shall be trained and notified as designated in this program.

f. Preparation for Lockout/Tagout/Tryout

i. The authorized employee shall conduct a survey to locate and identify all isolating devices to be certain which switches, valves, or other energy isolating devices apply to the equipment to be locked out. If more than one energy source, refer to "Multi-Energy Source Procedures" provided in this program. The appriopprate tagging system will be decitated by the Multi-energy source Procedure.

ii. Before an authorized employee shuts down any machine or equipment, they shall have knowledge of the type and magnitude of the energy, the hazards of that energy, and the methods to control it.

iii. Before shut down, affected employees shall be notified by the authorized employee of the application and removal of lockout devices or tagout devices. Notification shall be given before the controls are applied, and after they are removed from the machine or equipment.

g. Equipment shall be de-energized, locked out, tagged, and placed into Zero Energy State (ZES) prior to performing work.

h. Electrical equipment shall be tested to ensure Zero Energy State – refer to section in this program titled "Electrical Test Verification of Deenergized Circuits".

i. If ZES is not possible, the work will not be conducted until employees receive approval from management personnel, who shall insure an equal level of employee safety through task specific procedures.

j. Positioning Machines, Equipment, or Components

i. In situations where lockout devices must be temporarily removed from the energy isolating device and the machine or equipment energized to test or

position the machine, equipment or component thereof, the following sequence of actions shall be followed:

1. Clear the machine or equipment of tools and materials.
2. Remove employees from the machine or equipment area.
3. Remove the lockout/tagout devices.
4. Energize and proceed with testing or positioning.
5. De-energize all systems and reapply energy control measures to continue the servicing and/or maintenance.

ii. When using electrical testing devices (i.e. testing voltage), the qualified employees shall comply with the Company policies regarding arc flash protection.

k. Restoring Machines, Equipment, and/or Electrical Circuits to Normal Production.

i. After the servicing and/or maintenance is complete and equipment is ready for normal production operations, check the area to ensure that all persons and tools are clear.

ii. After all tools have been removed, guards have been reinstalled, and employees are in the clear, remove all lockout / tagout devices and notify affected employees of their removal.

iii. The only persons who may remove a lockout lock are:

1. The authorized person who placed the lock, and;
2. A project foreman (or designee) and employee representative after following all elements for "removal of lockout / tagout devices by other than the authorized employee". This will only be allowed when an employee leaves site without removing his/her lock. Employees who leave the site without removing his/her lock may be subject to disciplinary action (unless instructed to do so).

l. Removal of Lockout/Tagout Devices by Other than the Authorized Employee

i. If the employee who applied the lock is not available, prior to removal, the project manager (or designee) and employee representative must:

1. Complete the Lock Removal Authorization Form found in **Attachment 1.**

2. Verify that the authorized person who placed that lock is not in the facility.
3. Make a reasonable effort to contact the employee to advise them that their lock is going to be removed or to instruct them to return to the facility to remove their lock.
4. If the employee is unable to be contacted, the supervisor and management representative shall perform a walk-down inspection of the lockout area to ensure the person is no longer on site and not in danger when a lock is removed.
5. Ensure that the authorized employee is advised of his/her lockout lock's removal by returning their lock to them when they start their shift.
6. All areas involved in a lockout must be notified before the lock is removed. The individual removing the lock is responsible for returning the lock to the identified employee at the start of that employee's shift.

m. Simple Lockout Tagout Tryout Procedure

i. All lockout/tagout/tryout procedures that involve only a qualified person(s) deenergizing one energy source (i.e. one set of conductors or circuit part source) are Simple Lockouts.

ii. Alert the operator and other users of the system or equipment that is to be shut off and the reason.

iii. Plan the shutdown to ensure that the system will be off. This will be coordinated with an owner representative and Company project foreman. If the machine, equipment, or circuit is operating, shut it down by standard procedure.

iv. The authorized employee(s) servicing the system or equipment will lockout the energy source with his/her issued lock. No other employee may lockout the energy source for the authorized employee.

v. Electrical equipment shall be tested to ensure Zero Energy State – refer to section in this program titled "Electrical Test Verification of Deenergized Circuits".

vi. Tryout the lockout / tagout procedure to be sure the system has been successfully placed into a Zero Energy State. CAUTION: Return operating controls to neutral or off positions after the test.

vii. When work is completed, the authorized employee will notify any affected persons that the system or equipment will have its energy source restored.

viii. Only after all affected employees have been warned of re-energizing, will the authorized employee(s) remove their lock(s).

ix. Do not permit employees to remove another's lock. Be sure employees do not expose other employees to danger. Before re-energizing the machine or equipment, verify that the equipment is clear, and post a watch, if necessary.

n. Complex Lockout / Tagout / Tryout Procedure

i. All lockout/tagout/tryout procedures where one or more of the following exist require a complex lockout/tagout/tryout procedure:

1. Multiple energy sources
2. Multiple crews
3. Multiple crafts
4. Multiple locations
5. Multiple employers
6. Different disconnecting means
7. Particular Sequences
8. A job or task that continues for more than one work period.

ii. A person shall be in charge of a complex lockout. This person shall:

1. Be a qualified individual who is specifically appointed with overall responsibility to ensure that all energy sources are under lockout and to account for all persons working on the job/task.
2. Be permitted to install locks/tags, or direct their installation, on behalf of other employees.
3. Accountable for safe execution of the complex lockout.

iii. A written procedure (in addition to this written program) is required for all complex lockout jobs and/or tasks. The written procedure will include at least the following:

1. Identify the person in charge.

2. Address all the concerns of employees who might be exposed.

3. Identify the method to account for all persons who might be exposed to electrical hazards in the course of the lockout. This shall be achieved through one of the following:

a. Each individual will install his/her own personal lock on each lockout and/or tagout device.

b. The person in charge shall lock his/her key in a lockbox and each individual will install his/her own personal lock on each lockout and/or tagout device.

c. The person in charge shall maintain a sign in/out log for all persons entering/exiting the area.

d. Another equally effective methodology.

e. All machinery and equipment with more than one energy source shall have a written energy control procedure.

f. Each specific hazardous energy control procedure for Multi-Energy Source Machines must provide the following information:

i. Identification of the system or equipment and it's location.
ii. Identification of energy sources needed dissipated, locked out and tagged out.
iii. Step by step shutdown procedures.
iv. The types of lockout / tagout devices that will be used.
v. Start-up procedures ensuring the equipment is clear prior to start up.

g. Multi-energy source machines or equipment shall be turned off or shutdown using the procedures established and maintained by the equipment owner.

h. Lockout devices shall hold the source of energy in the safe or off position.

i. After the application of a lockout device to a machine, all potentially hazardous, stored, or residual energy shall be relieved, disconnected, restrained, or otherwise rendered safe.

i. Lock out devices shall be affixed to each energy isolating device by authorized employees.

j. Where Tagout devices are used with energy isolation devices designed with the capability of being locked, the tag attachment shall be fastened at the same point at which the lock would have been attached. Where a tag cannot be affixed directly to the energy isolating device, the tag shall be located as close as safely as possible to the device in a position that will be immediately obvious to anyone attempting to operate the device.

k. l. Electrical equipment shall be tested to ensure Zero Energy State – refer to section in this program titled "Electrical Test Verification of Deenergized Circuits".

l. Prior to starting work, the authorized employee shall verify isolation and ensure all energy to the machine or equipment has been eliminated.

m. Before lockout/tagout devices are removed and energy is restored to the equipment, the work area shall be inspected to ensure all nonessential items have been removed and that the machine or equipment components are operationally intact. Authorized employees shall be notified that their lockout/tagout device(s) must be removed. Affected employees shall be notified that the machine or equipment will be energized.

O. Shift or Personnel Change

i. A change over period will be established so that authorized employees may exchange their locks/tags.

ii. Authorized employees assuming control of the lockout shall be fully briefed in the scope and stage of work by those employees being relieved. The authorized employees assuming control will not begin until satisfied that the lockout/tagout condition is safe.

1. Periodic Inspections

a. At least annually, the effectiveness of this Lockout / Tagout / Tryout Program will be evaluated. Any deviation or inadequacies found during the inspection will be documented and corrected.

i. An authorized employee (other than the one performing the work) shall conduct the inspection.

ii. A blank annual inspection form can be found in **Attachment 2**.

b. Electrical Test Verification of Deenergized Circuits

i. Only qualified electrical personnel may test electrical equipment.

ii. Testing to Ensure Zero Energy State – Electrical Tryout

iii. After properly interrupting the load current, open the disconnecting device(s) for each source.

iv. When possible, visually verify that all blades of the disconnecting device(s) are fully open or that drawout-type circuit breakers are withdrawn to the fully disconnected position.

v. Use an adequately rated voltage detector to test each phase conductor or circuit part to verify they are deenergized. Test each phase conductor or circuit part both phase-to-phase and phase-to-ground. Before and after each test, determine that the voltage detector is operating satisfactorily.

vi. Apply grounds when necessary (i.e. potential for induced voltages or stored electrical energy exists).

vii. An Energized Electrical Work Permit may be required for the test.

viii. Work in Panel boards

1. Panel boards should be equipped with a lockable cover. If the permanent cover cannot be installed, a temporary cover of a suitable material, with hasps and locks will be

fabricated. If fabrication requires an unusual design, the electrician will consult a supervisor for direction.

2. In the process of working within or testing the panel board, the panel board shall not be left unattended or effectively isolated.

c. Work on Energized Circuits

- **i.** Approval must be obtained from the project foreman prior to any work on energized circuits.
- **ii.** An Energized Electrical Work Permit is required for all work on or near energized electrical equipment.

5. Training

a. Company employees will receive training according to their level of participation regarding the lockout process and their normal work duties.

b. Three levels of training are: authorized, affected, and awareness.

c. Authorized Personnel.

i. Authorized personnel are those employees that perform maintenance or service and are required to work under the protection of a lockout lock. A list of authorized persons (employee titles) are provided in Attachment 3. Authorized personnel shall be instructed in the following:

1. The recognition of hazardous energy sources.
2. The type and magnitude of the energy in the workplace.
3. The methods and means necessary for energy isolation and control.
4. Identification of single and multi-energy source equipment.
5. Purpose and use of Hazardous Energy Control Procedures.
6. Nature and limitations of tags. A tag is not to be removed without authorization. The tag is never to be ignored or defeated in any way.
7. Conditions for restarting machinery and equipment or removing lockout / tagout devices.
8. Relative elements of Subpart S – Electrical.
9. Relative elements of NFPA 70E.

d. Affected Personnel.

i. Affected personnel are those employees whose normal job duty is to operate the equipment or machines under OR have job tasks in the area in which lockout/tagout is being performed. Affected personnel shall be instructed in the following:

1. The purpose and use of the energy control procedures.
2. Type and magnitude of the energy sources.
3. Purpose and use of Hazardous Energy Control Procedures.
4. Nature and limitations of tags. A tag is not to be removed without authorization. The tag is never to be ignored or defeated in any way.
5. Conditions for restarting machinery and equipment or removing lockout / tagout devices, location of isolation devices for the energy sources.

e. Awareness Level Personnel.

i. Awareness level personnel are those employees whose work operations are or may be in an area where energy control procedures may be utilized. Awareness personnel shall be instructed about the procedure, and about the prohibition relating to attempts to restart or reenergize machines or equipment, which are locked out or tagged out.

ii. Retraining shall be provided for authorized and affected personnel when there is:

1. A change in job assignments.
2. A change in machines, equipment or processes that present a new hazard.
3. A change in the energy control procedure.
4. When the periodic inspection reveals, or when there is reason to believe that there are deviations from or inadequacies in the employee's knowledge or use of the energy control procedures.

f. All training and/or retraining must be documented and signed by both the instructor and attendee(s).

Attachment 1 Lock Removal Authorization Form
Attachment 2 Annual Inspections
Attachment 3 List of Authorized and Affected Persons

Attachment 1

Lock Removal Authorization Form

** USE THIS FORM WHEN REMOVING A LOCKOUT LOCK THAT WAS INADVERTENTLY LEFT ON AN ENERGY ISOLATING DEVICE**

Notice!

In the event of an emergency or should an employee forget to remove his/her lock prior to leaving site and a lock needs to be removed, the project foreman (or designee) will make every effort possible to contact that individual to remove the lock.

If the person is contacted, he/she will remove the lock or give their verbal permission to remove their lock. The project foreman (or designee) and employee representative will proceed with the lock removal, documenting the conversation.

If the person cannot be contacted, insure the employee accountable for the lock has actually left the premises.

Exhaust all reasonable efforts to locate the employee who left the lock on the equipment.

To remove the lock a "walk-down" of the area must be completed by the project foreman (or designee) and employee representative. A "walk-down" includes a search of the premises to ensure the employee, who left the lock on the equipment, is not in danger.

Check the equipment to be energized to be sure that it is safe to remove the lock.

When the project foreman (or designee) and employee representative participating in the "walk-down" determine that the lock can be removed, they will execute their signatures on this form authorizing the removal of the lock.

The lock shall be removed with all members of the "walk-down" present.

Advise the employee that his/her lock has been removed before he/she reports to the next work shift. It is requested and advised that the employee be met at the entrance at which time the lock is returned and the employee notified of the removal.

Employee Name* _____ **Lock ID (#):** _____

Company Official _____ **Date:** _____

Business Segment (construction) _____ **Date:** _____

*** Enter the name and lock number of the employee whose lock was removed.**

Attachment 2

Annual Inspection

Date of Evaluation:

Evaluation Made By:

Comments on General Policy:

The following specific procedures have been reviewed (list below):

The following specific procedures were modified (list below):

The following specific procedures were added (list below):

A review of the OSHA 300 log was conducted and the following incidents occurred, which involved lockout/tagout/tryout (include corrective action taken):

Attachment 3

List of Authorized and Affected Persons

Lockout Tagout Authorized Persons:

Any electrician/Employee, upon receipt of proper training and lockout/tagout devices.

Any apprentice electrician/Employee, upon receipt of proper training and lockout/tagout devices.

Note: Authorized electrical lockout tagout / tryout requires qualified workers in accordance with 29 CFR 1910 Subpart S – Electrical as well as the applicable 1926 standard.

Lockout Tagout Affected Persons:

Any electrician/employee, upon receipt of proper training.

Any apprentice electrician/employee, upon receipt of proper training.

1. **Policy Statement**
   - **a.** It is the policy of Burkholder's to provide all employees with a safe and healthful work environment free from recognized hazards. It is also policy to maintain and actively support a comprehensive employee safety and health program.
   - **b.** Burkholder's will comply with the OSHA Welding, Cutting & Brazing standard, 29 CFR 1910.252, 253, and 254, through implementation of this written program.
2. **Purpose**
   - **a.** The purpose of this written program is to provide guidelines, requirements, and procedures that will ensure employee safety when performing cutting, welding and brazing operations.
   - **b.** This document applies to all Burkholder's employees, visitors, and contractors who conduct hot work, Including, welding, cutting & brazing operations.
3. **References**
   - **a.** 29 CFR 1910 Subpart Q Welding, Cutting & Brazing
   - **b.** API Recommended Practice 54
   - **c.** ANSI Z87.1-1979 Practice For Occupational and Educational Eye and Face Protection standard
4. **General Requirements**
   - **a.** Management
     - **i.** Management shall recognize its responsibility for the safe usage of cutting and welding equipment on its property and:
       1. Based on fire potentials of plant facilities, establish areas for cutting and welding, determine if a hot work permit is required and establish procedures for cutting and welding, in other areas.
       2. Designate an individual responsible for authorizing cutting and welding operations in areas not specifically designed for such processes.
       3. Insist that cutters or welders and their supervisors are suitably trained in the safe operation of their equipment and the safe use of the process.

4. Advise all contractors about flammable materials or hazardous conditions of which they may not be aware.
5. When required, ensure the hot work permit is completed.

b. Supervisors

i. Shall be responsible for the safe handling of the cutting or welding equipment and the safe use of the cutting or welding process.

ii. Shall determine the combustible materials and hazardous areas present or likely to be present in the work location.

iii. Shall have the work moved to a location free from dangerous combustibles.

iv. If the work cannot be moved, have the combustibles moved to a safe distance from the work or have the combustibles properly shielded against ignition.

v. See that cutting and welding are so scheduled that plant operations that might expose combustibles to ignition are not started during cutting or welding.

vi. Shall secure authorization for the cutting or welding operations from the designated management representative.

vii. Shall determine that the cutter or welder secures his approval that conditions are safe before going ahead.

viii. Shall determine that fire protection and extinguishing equipment are properly located at the site.

ix. Where fire watches are required, the supervisor shall see that they are available at the site.

c. Fire Prevention Precautions

i. Cutting or welding shall be permitted only in areas that are or have been made fire safe. When work cannot be moved practically, as in most construction work, the area shall be made safe by removing combustibles or protecting combustibles from ignition sources.

d. Welding or Cutting Containers

i. No welding, cutting, or other hot work shall be performed on used drums, barrels, tanks or other containers until they have been cleaned so thoroughly as to make absolutely certain that there are no flammable

materials present or any substances such as greases, tars, acids, or other materials which when subjected to heat, might produce flammable or toxic vapors.

ii. Any pipe lines or connections to the drum or vessel shall be disconnected or blanked.

e. Venting & Purging

i. All hollow spaces, cavities or containers shall be vented to permit the escape of air or gases before preheating, cutting or welding.

ii. Purging with inert gas is recommended.

f. Accidental Contact

i. When arc welding is to be suspended for any substantial period of time, such as during lunch or overnight, all electrodes shall be removed from the holders and the holders carefully located so that accidental contact cannot occur and the machine be disconnected from the power source.

g. Torch Valve

i. In order to eliminate the possibility of gas escaping through leaks or improperly closed valves, when gas welding or cutting, the torch valves shall be closed and the gas supply to the torch positively shut off at some point outside the confined area whenever the torch is not to be used for a substantial period of time, such as during lunch hour or overnight. Where practical, the torch and hose shall also be removed from the confined space.

h. First Aid Equipment

i. First-aid equipment shall be available at all times. All injuries shall be reported as soon as possible for medical attention. First aid shall be rendered until medical attention can be provided.

i. Field Shop Operations

i. Where field shop operations are involved for fabrication of fittings, river crossings, road crossings, and pumping and compressor stations the requirements of this program shall be observed.

j. Electric Shock

i. When arc welding is performed in wet conditions, or under conditions of high humidity, special protection against electric shock shall be supplied.

k. Fire Prevention and Protection

i. The basic precautions for fire prevention in welding or cutting work are:

1. Fire hazards. If the object to be welded or cut cannot readily be moved, all movable fire hazards in the vicinity shall be taken to a safe place.

2. Guards. If the object to be welded or cut cannot be moved and if all the fire hazards cannot be removed, then guards shall be used to confine the heat, sparks, and slag, and to protect the immovable fire hazards.

ii. Restrictions. If the requirements stated above cannot be followed then welding and cutting shall not be performed.

l. Special Precautions for Combustible Material

i. Wherever there are floor openings or cracks in the flooring that cannot be closed, precautions shall be taken so that no readily combustible materials on the floor below will be exposed to sparks that could drop through the floor.

ii. Precautions shall be observed to prevent sparks and slag from dropping to lower levels with regard to cracks or holes in walls, open doorways and open or broken windows.

m. Fire Extinguishers

i. Suitable fire extinguishing equipment shall be maintained in a state of readiness for instant use.

ii. Such equipment may consist of pails of water, buckets of sand, hose or portable extinguishers depending upon the nature and quantity of the combustible material exposed.

n. Fire Watch & Hot Work Permits

i. A Fire watcher and hot work permit shall be required whenever welding or cutting is performed in locations where other than a minor fire might develop, or any of the following conditions exist:

1. Appreciable combustible material, in building construction or contents, closer than 35 feet (10.7 m) to the point of operation.

2. Appreciable combustibles are more than 35 feet (10.7 m) away but are easily ignited by sparks.
3. Wall or floor openings within a 35-foot (10.7 m) radius expose combustible material in adjacent areas including concealed spaces in walls or floors.
4. Closed Flame – that is 35 feet (10.7 m) or less from areas where flammable or combustible atmospheres may exist.
5. Opened Flame – that is 75 feet (22.9 m) or less from areas where flammable or combustible atmospheres may exist.
6. Combustible materials are adjacent to the opposite side of metal partitions, walls, ceilings, or roofs and are likely to be ignited by conduction or radiation.

o. Fire Watch Duties

- **i.** Fire watchers shall have fire extinguishing equipment readily available and be trained in its use.
  1. The minimum requirement is a 20 lb. multi-purpose (Class ABC) dry chemical fire extinguisher
- **ii.** They shall be familiar with facilities for sounding an alarm in the event of a fire.
- **iii.** They shall watch for fires in all exposed areas, try to extinguish them only when obviously within the capacity of the equipment available, or otherwise sound the alarm.
- **iv.** A fire watch shall be maintained for at least a half hour after completion of welding or cutting operations to detect and extinguish possible smoldering fires.

p. Fire Watch Training

- **i.** Shall include at a minimum;
  1. Definition of flammable and combustible materials and how to identify them.
  2. Hazards associated with fires.
  3. Site-specific training on the materials being protected from fire and potential hazards of the materials should they catch fire.

4. The uses and limitation of firefighting equipment (i.e. fire extinguishers, fire hoses, etc.).
5. Hot work permit system and requirements.

q. Hot Work Permit Requirements

i. Before cutting or welding is permitted, the area shall be inspected by the individual responsible for authorizing cutting and welding operations (Burkholder's Foreman or Supervisor). He or she shall designate precautions to be followed in granting authorization to proceed.

ii. The Hot Work Permit must be revalidated before work can be restarted following an interruption due to Stop Work Authority, weather conditions, alarms or unforeseen dangerous conditions.

iii. At a minimum a hot work permit is required anytime the following conditions exist:

1. Anytime appreciable combustible material, in building construction or contents, closer than 35 feet (10.7 m) to the point of operation.
2. Anytime appreciable combustibles are more than 35 feet (10.7 m) away but are easily ignited by sparks.
3. Wall or floor openings within a 35-foot (10.7 m) radius expose combustible material in adjacent areas including concealed spaces in walls or floors.
4. Combustible materials are adjacent to the opposite side of metal partitions, walls, ceilings, or roofs and are likely to be ignited by conduction or radiation.
5. Burkholder's will follow the procedures and requirements of the host employer in regards to Hot Work permits, provided that they meet the requirements of this written program and 29 CFR 1910.252.

iv. See Attachment 1 for the Burkholder's Hot Work Permit

r. Floors

i. Where combustible materials such as paper clippings, wood shavings, or textile fibers are on the floor, the floor shall be swept clean for a radius of 35 feet (10.7 m).

ii. Combustible floors shall be kept wet, covered with damp sand, or protected by fire-resistant shields.

iii. Where floors have been wet down, personnel operating arc welding or cutting equipment shall be protected from possible shock.

s. Prohibited Areas

i. Cutting or welding shall not be permitted in the following situations:

1. In areas not authorized by management.

2. In sprinklered buildings while such protection is impaired.

3. In the presence of explosive atmospheres (mixtures of flammable gases, vapors, liquids, or dusts with air), or explosive atmospheres that may develop inside uncleaned or improperly prepared tanks or equipment which have previously contained such materials, or that may develop in areas with an accumulation of combustible dusts.

4. In areas near the storage of large quantities of exposed, readily ignitable materials such as bulk sulfur, baled paper, or cotton.

5. Where ignition can be caused by heat conduction, such as on metal walls or pipes in contact with combustibles on the other side.

6. On used containers such as drums.

t. Relocation of Combustibles

i. Where practical, all combustibles shall be relocated at least 35 feet (10.7 m) from the work site.

ii. Where relocation is impractical, combustibles shall be protected with flame proofed covers or otherwise shielded with metal or asbestos guards or curtains.

iii. Ducts and conveyor systems that might carry sparks to distant combustibles shall be suitably protected or shut down.

u. Combustible Walls

i. Where cutting or welding is done near walls, partitions, ceiling or roof of combustible construction, fire-resistant shields or guards shall be provided to prevent ignition.

v. Noncombustible Walls

i. If welding is to be done on a metal wall, partition, ceiling or roof, precautions shall be taken to prevent ignition of combustibles on the other side, due to conduction or radiation, preferably by relocating combustibles. Where combustibles are not relocated, a fire watch on the opposite side from the work shall be provided.

w. Combustible Cover

i. Welding shall not be attempted on a metal partition, wall, ceiling or roof having a combustible covering nor on walls or partitions of combustible sandwich-type panel construction.

x. Pipes

i. Cutting or welding on pipes or other metal in contact with combustible walls, partitions, ceilings or roofs shall not be undertaken if the work is close enough to cause ignition by conduction.

y. Protection of Personnel

i. Welding cable. Welders shall place welding cable and other equipment so that it is clear of passageways, ladders, and stairways.

z. Eye Protection

i. Proper helmets and face shields with appropriately shaded sight glass shall be used during all arc welding or arc cutting operations, excluding submerged arc welding.

ii. Goggles with proper shade selection shall be worn during arc welding, cutting and brazing.

iii. Helpers or attendants shall be provided with proper eye protection.

iv. Goggles or other suitable eye protection shall be used during all gas welding or oxygen cutting operations.

v. All operators and attendants of resistance welding or resistance brazing equipment shall use transparent face shields or goggles, depending on the particular job, to protect their faces or eyes, as required.

vi. Eye protection in the form of suitable goggles shall be provided where needed for brazing operations.

aa. Specifications for Protectors

i. Helmets and hand shields shall be made of a material which is an insulator for heat and electricity. Helmets, shields and goggles shall be not readily flammable and shall be capable of withstanding sterilization.

ii. Helmets shall be arranged to protect the face, neck and ears from direct radiant energy from the arc.

iii. Helmets shall be provided with filter plates and cover plates designed for easy removal.

iv. All parts shall be constructed of a material which will not readily corrode or discolor the skin.

v. Goggles shall be ventilated to prevent fogging of the lenses as much as practical.

vi. All glass for lenses shall be tempered, substantially free from striae, air bubbles, waves and other flaws. Except when a lens is ground to provide proper optical correction for defective vision, the front and rear surfaces of lenses and windows shall be smooth and parallel.

vii. Lenses shall bear some permanent distinctive marking by which the source and shade may be readily identified.

viii. The following is a guide for the selection of the proper shade numbers. These recommendations may be varied to suit the individual's needs.

1. Filter lenses must meet the test for transmission of radiant energy prescribed by any of the consensus standards listed in 29 CFR 1910.133(b)(1).

bb. Protection From Arc Welding Rays

i. Where the work permits, the welder should be enclosed in an individual booth painted with a finish of low reflectivity such as zinc oxide (an important factor for absorbing ultraviolet radiations) and lamp black, or shall be enclosed with noncombustible screens similarly painted.

ii. Booths and screens shall permit circulation of air at floor level. Workers or other persons adjacent to the welding areas shall be protected from the rays by noncombustible or flameproof screens or shields or shall be required to wear appropriate goggles.

cc. Protective Clothing

i. Employees exposed to the hazards created by welding, cutting, or brazing operations shall be protected by personal protective equipment in accordance with the requirements of 1910.132.

ii. Appropriate protective clothing required for any welding operation will vary with the size, nature and location of the work to be performed.

dd. Confined Space

i. As used herein confined space is intended to mean a relatively small or restricted space such as a tank, boiler, pressure vessel, or small compartment of a ship – Refer to the Burkholder's Confined Space Entry Program.

ii. Ventilation. Ventilation is a prerequisite to work in confined spaces. For ventilation requirements see paragraph (c) of this section.

iii. Securing cylinders and machinery. When welding or cutting is being performed in any confined spaces the gas cylinders and welding machines shall be left on the outside. Before operations are started, heavy portable equipment mounted on wheels shall be securely blocked to prevent accidental movement

iv. Lifelines. Where a welder must enter a confined space through a manhole or other small opening, means shall be provided for quickly removing him in case of emergency. When safety belts and lifelines are used for this purpose they shall be so attached to the welder's body that his body cannot be jammed in a small exit opening. An attendant with a preplanned rescue procedure shall be stationed outside to observe the welder at all times and be capable of putting rescue operations into effect.

v. Electrode removal. When arc welding is to be suspended for any substantial period of time, such as during lunch or overnight, all electrodes shall be removed from the holders and the holders carefully located so that accidental contact cannot occur and the machine disconnected from the power source.

vi. Gas cylinder shutoff. In order to eliminate the possibility of gas escaping through leaks of improperly closed valves, when gas welding or cutting, the torch valves shall be closed and the fuel-gas and oxygen supply to the torch

positively shut off at some point outside the confined area whenever the torch is not to be used for a substantial period of time, such as during lunch hour or overnight. Where practical the torch and hose shall also be removed from the confined space.

vii. Warning sign. After welding operations are completed, the welder shall mark the hot metal or provide some other means of warning other workers. Fire watches must also be completed a minimum of one hour after work has ended.

ee. Health Protection and Ventilation

i. Contamination.

1. These requirements have been established on the basis of the following three factors in arc and gas welding which govern the amount of contamination to which welders may be exposed:

2. Dimensions of space in which welding is to be done (with special regard to height of ceiling).

3. Number of welders.

4. Possible evolution of hazardous fumes, gases, or dust according to the metals involved.

ii. Screens. When welding must be performed in a space entirely screened on all sides, the screens shall be so arranged that no serious restriction of ventilation exists. It is desirable to have the screens so mounted that they are about 2 feet (0.61 m) above the floor unless the work is performed at so low a level that the screen must be extended nearer to the floor to protect nearby workers from the glare of welding.

iii. Maximum allowable concentration. Local exhaust or general ventilating systems shall be provided and arranged to keep the amount of toxic fumes, gases, or dusts below the maximum allowable concentration as specified in 29 CFR 1910.1000.

ff. Precautionary Labels

i. A number of potentially hazardous materials are employed in fluxes, coatings, coverings, and filler metals used in welding and cutting or are released to the atmosphere during welding and cutting.

ii. The suppliers of welding materials shall determine the hazard, if any, associated with the use of their materials in welding, cutting, etc.

iii. All filler metals and fusible granular materials shall carry the following notice, as a minimum, on tags, boxes, or other containers: CAUTION Welding may produce fumes and gases hazardous to health. Avoid breathing these fumes and gases. Use adequate ventilation. See ANSI Z49.1-1967 Safety in Welding and Cutting published by the American Welding Society.

iv. Brazing (welding) filler metals containing cadmium in significant amounts shall carry the following notice on tags, boxes, or other containers: WARNING CONTAINS CADMIUM - POISONOUS FUMES MAY BE FORMED ON HEATING. Do not breathe fumes. Use only with adequate ventilation such as fume collectors, exhaust ventilators, or air-supplied respirators. See ANSI Z49.1-1967. If chest pain, cough, or fever develops after use call physician immediately.

v. Brazing and gas welding fluxes containing fluorine compounds shall have a cautionary wording to indicate that they contain fluorine compounds. One such cautionary wording recommended by the American Welding Society for brazing and gas welding fluxes reads as follows: CAUTION CONTAINS FLUORIDES this flux when heated gives off fumes that may irritate eyes, nose and throat. 1. Avoid fumes - use only in well-ventilated spaces. 2. Avoid contact of flux with eyes or skin. 3. Do not take internally.

gg. Ventilation

i. Mechanical ventilation shall be provided when welding or cutting is done on metals not covered in this written program.

ii. A hazard assessment, which may include hygiene testing, shall be conducted to determine the exposure levels of each potential contaminant.

1. Hot work is to be commenced within 30 minutes of testing.

iii. Minimum rate. Ventilation shall be at the minimum rate of 2,000 cubic feet (57 m (3)) per minute per welder, except where local exhaust hoods and booths, or airline respirators approved by the U.S. Bureau of Mines for such purposes are provided.

iv. Natural ventilation is considered sufficient for welding or cutting operations where the following restrictions are not present:

v. In a space of less than 10,000 cubic feet (284 m (3)) per welder.

vi. In a room having a ceiling height of less than 16 feet (5 m).

vii. In confined spaces or where the welding space contains partitions, balconies, or other structural barriers to the extent that they significantly obstruct cross ventilation.

hh. Local Exhaust Hoods and Booths

i. Mechanical local exhaust ventilation may be by means of either of the following:

1. Hoods. Freely movable hoods intended to be placed by the welder as near as practical to the work being welded and provided with a rate of air-flow sufficient to maintain a velocity in the direction of the hood of 100 linear feet (30 m) per minute in the zone of welding when the hood is at its most remote distance from the point of welding. The rates of ventilation required to accomplish this control velocity using a 3-inch (7.6 cm) wide flanged suction opening are shown in the following table:

Welding Zone	Minimum air flow (1) cubic feet/ minutes	Duct diameter, inches (2)
4 to 6 inches from arc or torch	150	3
6 to 8 inches from arc or torch	275	3 1/2
8 to 10 inches from arc or torch	425	4 1/2
10 to 12 inches from arc or torch	600	5 1/2

Footnote(1) When brazing w/ cadmium bearing materials or cutting on such materials increased rates of ventilation may be required.
Footnote(2) Nearest half-inch duct diameter based on 4,000 feet per minute velocity in pipe.

2. Fixed enclosure. A fixed enclosure with a top and not less than two sides which surround the welding or cutting operations and with a rate of airflow sufficient to maintain a velocity away from the welder of not less than 100 linear feet (30 m) per minute.

ii. Ventilation in Confined Spaces

i. Air replacement. All welding and cutting operations conducted in confined spaces shall be adequately ventilated to prevent the accumulation of toxic materials or possible oxygen deficiency. This applies not only to the welder but also to helpers and other personnel in the immediate vicinity. All air replacing that withdrawn shall be clean and respirable.

ii. Airline respirators. In circumstances for which it is impossible to provide such ventilation, airline respirators or hose masks approved for this purpose by the National Institute for Occupational Safety and Health (NIOSH) under 42 CFR part 84 must be used.

iii. Self-contained units. In areas immediately hazardous to life, a full-facepiece, pressure-demand, self-contained breathing apparatus or a combination full-facepiece, pressure-demand supplied-air respirator with an auxiliary, self-contained air supply approved by NIOSH under 42 CFR part 84 must be used.

iv. Oxygen for ventilation. Oxygen shall never be used for ventilation.

jj. Potential Hazardous Compounds (SDS will be kept on file for all relevant items)

i. Fluorine compounds.

1. In confined spaces, welding or cutting involving fluxes, coverings, or other materials which contain fluorine compounds shall be done in accordance with OSHA 29 CFR 1910.252(c)(4). A fluorine compound is one that contains fluorine, as an element in chemical combination, not as a free gas.

2. Maximum allowable concentration. The need for local exhaust ventilation or airline respirators for welding or cutting in other than confined spaces will depend upon the individual circumstances. However, experience has shown such protection to be desirable for fixed-location production welding and for all production welding on stainless steels. Where air samples taken at the welding location indicate that the fluorides liberated are below the maximum allowable concentration, such protection is not necessary.

ii. Zinc.

1. In confined spaces welding or cutting involving zinc-bearing base or filler metals or metals coated with zinc-bearing materials shall be done in accordance with OSHA 29 CFR 1910.252(c)(4).

iii. Indoors. Indoors, welding or cutting involving zinc-bearing base or filler metals coated with zinc-bearing materials shall be done in accordance with OSHA 29 CFR 1910.252(c)(3).

iv. Lead.

1. In confined spaces, welding involving lead-base metals (erroneously called lead-burning) shall be done in accordance with OSHA 29 CFR 1910.252(c)(4).
2. Indoors. Indoors, welding involving lead-base metals shall be done in accordance with OSHA 29 CFR 1910.252(c)(3).
3. Local ventilation. In confined spaces or indoors, welding or cutting operations involving metals containing lead, other than as an impurity, or metals coated with lead-bearing materials, including paint, must be done using local exhaust ventilation or airline respirators. Such operations, when done outdoors, must be done using respirators approved for this purpose by NIOSH under 42 CFR part 84. In all cases, workers in the immediate vicinity of the cutting operation must be protected by local exhaust ventilation or airline respirators.

v. Beryllium.

1. Welding or cutting indoors, outdoors, or in confined spaces involving beryllium-containing base or filler metals shall be done using local exhaust ventilation and airline respirators unless atmospheric tests under the most adverse conditions have established that the workers' exposure is within the acceptable concentrations defined by 1910.1000 of this part.
2. In all cases, workers in the immediate vicinity of the welding or cutting operations shall be protected as necessary by local exhaust ventilation or airline respirators.

vi. Cadmium.

1. In confined spaces or indoors, welding or cutting operations involving cadmium-bearing or cadmium-coated base metals must be done using local exhaust ventilation or airline respirators unless atmospheric tests under the most adverse conditions show that employee exposure is within the acceptable concentrations specified by 29 CFR 1910.1000. Such operations, when done outdoors, must be done using respirators, such as fume respirators, approved for this purpose by NIOSH under 42 CFR part 84.
2. Welding (brazing) involving cadmium-bearing filler metals shall be done using ventilation as prescribed in paragraph in accordance with OSHA 29 CFR 1910.252 (c)(3) or (c)(4).

vii. Mercury.

1. In confined spaces or indoors, welding or cutting operations involving metals coated with mercury-bearing materials, including paint, must be done using local exhaust ventilation or airline respirators unless atmospheric tests under the most adverse conditions show that employee exposure is within the acceptable concentrations specified by 29 CFR 1910.1000.
2. Such operations, when done outdoors, must be done using respirators approved for this purpose by NIOSH under 42 CFR part 84.

viii. Cleaning compounds.

1. Manufacturer's instructions. In the use of cleaning materials, because of their possible toxicity or flammability, appropriate precautions such as manufacturers' instructions shall be followed.
2. Degreasing. Degreasing and other cleaning operations involving chlorinated hydrocarbons shall be so located that no vapors from these operations will reach or be drawn into the atmosphere surrounding any welding operation. In addition, trichloroethylene and perchlorethylene should be kept out of atmospheres penetrated by the ultraviolet radiation of gas-shielded welding operations.

ix. Cutting of stainless steels.

1. Oxygen cutting, using either a chemical flux or iron powder or gas-shielded arc cutting of stainless steel, shall be done using mechanical ventilation adequate to remove the fumes generated.

kk. All Other Potentially Hazardous Compounds

i. A hazard assessment, which may include hygiene testing, shall be conducted to determine what, if any, exist with the potential to harm any employee's health.

ll. Oxygen Fuel Gas Welding and Cutting

i. Flammable mixture. Mixtures of fuel gases and air or oxygen may be explosive and shall be guarded against. No device or attachment facilitating or permitting mixtures of air or oxygen with flammable gases prior to consumption, except at the burner or in a standard torch, shall be allowed unless approved for the purpose.

ii. Maximum pressure. Under no condition shall acetylene be generated, piped (except in approved cylinder manifolds) or utilized at a pressure in excess of 15 psig (103 kPa gauge pressure) or 30 psia (206 kPa absolute). (The 30 psia (206 kPa absolute) limit is intended to prevent unsafe use of acetylene in pressurized chambers such as caissons, underground excavations or tunnel construction. This requirement is not intended to apply to storage of acetylene dissolved in a suitable solvent in cylinders manufactured and maintained according to U.S. Department of Transportation requirements, or to acetylene for chemical use. The use of liquid acetylene shall be prohibited.

iii. Apparatus. Only approved apparatus such as torches, regulators or pressure-reducing valves, acetylene generators, and manifolds shall be used.

iv. Personnel. Workmen in charge of the oxygen or fuel-gas supply equipment, including generators, and oxygen or fuel-gas distribution piping systems shall be instructed and judged competent by their employers for this important work before being left in charge. Rules and instructions covering the operation and maintenance of oxygen or fuel-gas supply equipment

including generators, and oxygen or fuel-gas distribution piping systems shall be readily available.

mm. Cylinders and Container - Approval and Marking

- **i.** All portable cylinders used for the storage and shipment of compressed gases shall be constructed and maintained in accordance with the regulations of the U.S. Department of Transportation, 49 CFR Parts 171-179.
- **ii.** Compressed gas cylinders shall be legibly marked, for the purpose of identifying the gas content, with either the chemical or the trade name of the gas. Such marking shall be by means of stenciling, stamping, or labeling, and shall not be readily removable. Whenever practical, the marking shall be located on the shoulder of the cylinder.
- **iii.** Compressed gas cylinders shall be equipped with connections complying with the American National Standard Compressed Gas Cylinder Valve Outlet and Inlet Connections, ANSI B57.1-1965, which is incorporated by reference as specified in Sec. 1910.6.
- **iv.** All cylinders with a water weight capacity of over 30 pounds (13.6 kg) shall be equipped with means of connecting a valve protection cap or with a collar or recess to protect the valve.

nn. Storage of Cylinders

- **i.** Cylinders shall be kept away from radiators and other sources of heat.
- **ii.** Inside of buildings, cylinders shall be stored in a well-protected, well-ventilated, dry location, at least 20 (6.1 m) feet from highly combustible materials such as oil or excelsior. Cylinders should be stored in assigned places away from elevators, stairs, or gangways. Assigned storage spaces shall be located where cylinders will not be knocked over or damaged by passing or falling objects, or subject to tampering by unauthorized persons. Cylinders shall not be kept in unventilated enclosures such as lockers and cupboards.
- **iii.** Empty cylinders shall have their valves closed and be properly marked: "MT".

iv. Valve protection caps, where cylinder is designed to accept a cap, shall always be in place, hand-tight, except when cylinders are in use or connected for use.

oo. Storage of Fuel-Gas Cylinders

i. Inside a building, cylinders, except those in actual use or attached ready for use, shall be limited to a total gas capacity of 2,000 cubic feet (56 m(3)) or 300 pounds (135.9 kg) of liquefied petroleum gas.

ii. For storage in excess of 2,000 cubic feet (56 m(3)) total gas capacity of cylinders or 300 pounds (135.9 kg) of liquefied petroleum gas, a separate room or compartment conforming to the requirements specified in paragraphs (f)(6)(i)(H) and (f)(6)(i)(I) of this section shall be provided, or cylinders shall be kept outside or in a special building. Special buildings, rooms or compartments shall have no open flame for heating or lighting and shall be well ventilated. They may also be used for storage of calcium carbide in quantities not to exceed 600 (271.8 kg) pounds, when contained in metal containers complying with paragraphs (g)(1)(i) and (g)(1)(ii) of this section.

iii. Acetylene cylinders shall be stored valve end up with protective caps affixed and properly secured. When a job using acetylene devices is completed or prior to transporting acetylene cylinders, the valve on the acetylene cylinder shall be closed and pressure on the hoses bled to zero.

pp. Oxygen Storage

i. Cylinders shall not be kept in unventilated enclosures, such as lockers or cupboards.

ii. Oxygen cylinders shall not be stored near highly combustible material, especially oil and grease; or near reserve stocks of carbide and acetylene or other fuel-gas cylinders, or near any other substance likely to cause or accelerate fire; or in an acetylene generator compartment.

iii. Oxygen cylinders stored in outside generator houses shall be separated from the generator or carbide storage rooms by a noncombustible partition having a fire-resistance rating of at least 1 hour. This partition shall be without openings and shall be gastight.

iv. Oxygen cylinders in storage shall be separated from fuel-gas cylinders or combustible materials (especially oil or grease), a minimum distance of 20 feet (6.1 m) or by a noncombustible barrier at least 5 feet (1.5 m) high having a fire-resistance rating of at least one-half hour.

v. Where a liquid oxygen system is to be used to supply gaseous oxygen for welding or cutting and the system has a storage capacity of more than 13,000 cubic feet (364 m(3)) of oxygen (measured at 14.7 psia (101 kPa) and 70 deg. F (21.1 deg. C)), connected in service or ready for service, or more than 25,000 cubic feet (700 m(3)) of oxygen (measured at 14.7 psia (101 kPa) and 70 deg. F (21.1 deg. C)), including unconnected reserves on hand at the site, it shall comply with the provisions of the Standard for Bulk Oxygen Systems at Consumer Sites, NFPA No. 566-1965, which is incorporated by reference as specified in Sec. 1910.6.

qq. Operating Procedures

i. Cylinders, cylinder valves, couplings, regulators, hose, and apparatus shall be kept free from oily or greasy substances. Oxygen cylinders or apparatus shall not be handled with oily hands or gloves. A jet of oxygen must never be permitted to strike an oily surface, greasy clothes, or enter a fuel oil or other storage tank.

ii. When transporting cylinders by a crane or derrick, a cradle, boat, or suitable platform shall be used. Slings or electric magnets shall not be used for this purpose. Valve-protection caps, where cylinder is designed to accept a cap, shall always be in place.

1. Vertical transportation is the only allowed method, horizontal transportation is never allowed.

iii. Cylinders shall not be dropped or struck or permitted to strike each other violently.

iv. Valve-protection caps shall not be used for lifting cylinders from one vertical position to another. Bars shall not be used under valves or valve-protection caps to pry cylinders loose when frozen to the ground or otherwise fixed; the use of warm (not boiling) water is recommended. Valve-protection caps are designed to protect cylinder valves from damage.

v. Unless cylinders are secured on a special truck, regulators shall be removed and valve-protection caps, when provided for, shall be put in place before cylinders are moved.

vi. Cylinders not having fixed hand wheels shall have keys, handles, or nonadjustable wrenches on valve stems while these cylinders are in service. In multiple cylinder installations only one key or handle is required for each manifold.

vii. Cylinder valves shall be closed before moving cylinders.

viii. Cylinder valves shall be closed when work is finished.

ix. Valves of empty cylinders shall be closed.

x. Cylinders shall be kept far enough away from the actual welding or cutting operation so that sparks, hot slag, or flame will not reach them, or fire-resistant shields shall be provided.

xi. Cylinders shall not be placed where they might become part of an electric circuit. Contacts with third rails, trolley wires, etc., shall be avoided. Cylinders shall be kept away from radiators, piping systems, layout tables, etc., that may be used for grounding electric circuits such as for arc welding machines. Any practice such as the tapping of an electrode against a cylinder to strike an arc shall be prohibited.

xii. Cylinders shall never be used as rollers or supports, whether full or empty.

xiii. The numbers and markings stamped into cylinders shall not be tampered with.

xiv. No person, other than the gas supplier, shall attempt to mix gases in a cylinder. No one, except the owner of the cylinder or person authorized by him, shall refill a cylinder.

xv. No one shall tamper with safety devices in cylinders or valves.

xvi. Cylinders shall not be dropped or otherwise roughly handled.

xvii. Unless connected to a manifold, oxygen from a cylinder shall not be used without first attaching an oxygen regulator to the cylinder valve. Before connecting the regulator to the cylinder valve, the valve shall be opened slightly for an instant and then closed. Always stand to one side of the outlet when opening the cylinder valve.

xviii. A hammer or wrench shall not be used to open cylinder valves. If valves cannot be opened by hand, the supplier shall be notified.

xix. Cylinder valves shall not be tampered with nor should any attempt be made to repair them. If trouble is experienced, the supplier should be sent a report promptly indicating the character of the trouble and the cylinder's serial number. Supplier's instructions as to its disposition shall be followed.

xx. Complete removal of the stem from a diaphragm-type cylinder valve shall be avoided.

xxi. Fuel-gas cylinders shall be placed with valve end up whenever they are in use. Liquefied gases shall be stored and shipped with the valve end up.

xxii. Cylinders shall be handled carefully. Rough handling, knocks, or falls are liable to damage the cylinder, valve or safety devices and cause leakage.

xxiii. Before connecting a regulator to a cylinder valve, the valve shall be opened slightly and closed immediately. The valve shall be opened while standing to one side of the outlet; never in front of it. Never crack a fuel-gas cylinder valve near other welding work or near sparks, flame, or other possible sources of ignition.

xxiv. Before a regulator is removed from a cylinder valve, the cylinder valve shall be closed and the gas released from the regulator.

xxv. Nothing shall be placed on top of an acetylene cylinder when in use which may damage the safety device or interfere with the quick closing of the valve.

xxvi. If cylinders are found to have leaky valves or fittings which cannot be stopped by closing of the valve, the cylinders shall be taken outdoors away from sources of ignition and slowly emptied.

xxvii. A warning should be placed near cylinders having leaking fuse plugs or other leaking safety devices not to approach them with a lighted cigarette or other source of ignition. Such cylinders should be plainly tagged; the supplier should be promptly notified and his instructions followed as to their return.

xxviii. Safety devices shall not be tampered with.

xxix. Fuel-gas shall never be used from cylinders through torches or other devices equipped with shutoff valves without reducing the pressure through a suitable regulator attached to the cylinder valve or manifold.

xxx. The cylinder valve shall always be opened slowly.

xxxi. An acetylene cylinder valve shall not be opened more than one and one-half turns of the spindle, and preferably no more than three-fourths of a turn.

xxxii. Where a special wrench is required it shall be left in position on the stem of the valve while the cylinder is in use so that the fuel-gas flow can be quickly turned off in case of emergency. In the case of manifolded or coupled cylinders at least one such wrench shall always be available for immediate use.

rr. Manifolding of Cylinders

i. Manifolds shall be approved either separately for each component part or as an assembled unit.

ii. Except as provided in paragraph (c)(1)(iii) of this section fuel-gas cylinders connected to one manifold inside a building shall be limited to a total capacity not exceeding 300 pounds (135.9 kg) of liquefied petroleum gas or 3,000 cubic feet (84 m(3)) of other fuel-gas. More than one such manifold with connected cylinders may be located in the same room provided the manifolds are at least 50 feet (15 m) apart or separated by a noncombustible barrier at least 5 feet (1.5 m) high having a fire-resistance rating of at least one-half hour.

iii. Fuel-gas cylinders connected to one manifold having an aggregate capacity exceeding 300 pounds (135.9 kg) of liquefied petroleum gas or 3,000 cubic feet (84 m(3)) of other fuel-gas shall be located outdoors, or in a separate building or room constructed in accordance with paragraphs (f)(6)(i)(H) and (f)(6)(i)(I) of this section.

iv. Separate manifold buildings or rooms may also be used for the storage of drums of calcium carbide and cylinders containing fuel gases as provided in paragraph (b)(3) of this section. Such buildings or rooms shall have no open flames for heating or lighting and shall be well-ventilated.

v. High-pressure fuel-gas manifolds shall be provided with approved pressure regulating devices.

vi. High-pressure oxygen manifolds (for use with cylinders having a Department of Transportation service pressure above 200 psig (1.36 MPa)).

vii. Manifolds shall be approved either separately for each component part or as an assembled unit.

viii. Oxygen manifolds shall not be located in an acetylene generator room. Oxygen manifolds shall be separated from fuel-gas cylinders or combustible materials (especially oil or grease), a minimum distance of 20 feet (6.1 m) or by a noncombustible barrier at least 5 feet (1.5 m) high having a fire-resistance rating of at least one-half hour.

ix. Except as provided in paragraph (c)(2)(iv) of this section, oxygen cylinders connected to one manifold shall be limited to a total gas capacity of 6,000 cubic feet (168 m(3)). More than one such manifold with connected cylinders may be located in the same room provided the manifolds are at least 50 feet (15 m) apart or separated by a noncombustible barrier at least 5 feet (1.5 m) high having a fire-resistance rating of at least one-half hour.

x. An oxygen manifold, to which cylinders having an aggregate capacity of more than 6,000 cubic feet (168 m(3)) of oxygen are connected, should be located outdoors or in a separate noncombustible building. Such a manifold, if located inside a building having other occupancy, shall be located in a separate room of noncombustible construction having a fire-resistance rating of at least one-half hour or in an area with no combustible material within 20 feet (6.1 m) of the manifold.

xi. An oxygen manifold or oxygen bulk supply system which has storage capacity of more than 13,000 cubic feet (364 m(3))of oxygen (measured at 14.7 psia (101 kPa) and 70 deg. F (21.1 deg. C)), connected in service or ready for service, or more than 25,000 cubic feet (700 m(3)) of oxygen (measured at 14.7 psia (101 kPa) and 70 deg. F (21.1 deg. C)), including unconnected reserves on hand at the site, shall comply with the provisions of the Standard for Bulk Oxygen Systems at Consumer Sites, NFPA No. 566-1965.

xii. High-pressure oxygen manifolds shall be provided with approved pressure-regulating devices.

xiii. Low-pressure oxygen manifolds (for use with cylinders having a Department of Transportation service pressure not exceeding 200 psig (1.36 MPa)).

xiv. Manifolds shall be of substantial construction suitable for use with oxygen at a pressure of 250 psig (1.7 MPa). They shall have a minimum bursting pressure of 1,000 psig (6.8 MPa) and shall be protected by a safety relief device which will relieve at a maximum pressure of 500 psig (3.4 MPa). DOT-4L200 cylinders have safety devices which relieve at a maximum pressure of 250 psig (1.7 MPa) (or 235 psig (1.6 MPa) if vacuum insulation is used).

xv. Hose and hose connections subject to cylinder pressure shall comply with paragraph (e)(5) of this section. Hose shall have a minimum bursting pressure of 1,000 psig (6.8 MPa).

1. Flashback arrestors must be installed on all hoses.

xvi. The assembled manifold including leads shall be tested and proven gas-tight at a pressure of 300 psig (2.04 MPa). The fluid used for testing oxygen manifolds shall be oil-free and not combustible.

xvii. The location of manifolds shall comply with paragraphs (c)(2)(ii), (c)(2)(iii), (c)(2)(iv), and (c)(2)(v) of this section.

xviii. The following sign shall be conspicuously posted at each manifold: Low-Pressure Manifold Do Not Connect High-Pressure Cylinders Maximum Pressure - 250 psig (1.7 MPa)

ss. Portable Outlet Headers

i. Portable outlet headers shall not be used indoors except for temporary service where the conditions preclude a direct supply from outlets located on the service piping system.

ii. Each outlet on the service piping from which oxygen or fuel-gas is withdrawn to supply a portable outlet header shall be equipped with a readily accessible shutoff valve.

iii. Hose and hose connections used for connecting the portable outlet header to the service piping shall comply with paragraph (e)(5) of this section.

iv. Master shutoff valves for both oxygen and fuel-gas shall be provided at the entry end of the portable outlet header.

v. Portable outlet headers for fuel-gas service shall be provided with an approved hydraulic back-pressure valve installed at the inlet and preceding the service outlets, unless an approved pressure-reducing regulator, an approved back-flow check valve, or an approved hydraulic back-pressure valve is installed at each outlet. Outlets provided on headers for oxygen service may be fitted for use with pressure-reducing regulators or for direct hose connection.

vi. Each service outlet on portable outlet headers shall be provided with a valve assembly that includes a detachable outlet seal cap, chained or otherwise attached to the body of the valve.

vii. Materials and fabrication procedures for portable outlet headers shall comply with paragraphs (d)(1), (d)(2), and (d)(5) of this section.

viii. Portable outlet headers shall be provided with frames which will support the equipment securely in the correct operating position and protect them from damage during handling and operation.

tt. Manifold Operating Procedures

i. Cylinder manifolds shall be installed under the supervision of someone familiar with the proper practices with reference to their construction and use.

ii. All manifolds and parts used in methods of manifolding shall be used only for the gas or gases for which they are approved.

iii. When acetylene cylinders are coupled, approved flash arresters shall be installed between each cylinder and the coupler block. For outdoor use only, and when the number of cylinders coupled does not exceed three, one flash arrester installed between the coupler block and regulator is acceptable.

iv. The aggregate capacity of fuel-gas cylinders connected to a portable manifold inside a building shall not exceed 3,000 cubic feet (84 m(3)) of gas.

v. Acetylene and liquefied fuel-gas cylinders shall be manifolded in a vertical position.

vi. The pressure in the gas cylinders connected to and discharged simultaneously through a common manifold shall be approximately equal.

uu. Arc Welding and Cutting

i. General Requirements.

1. Equipment selection. Welding equipment shall be chosen for safe application to the work to be done as specified in this written program

2. Installation. Welding equipment shall be installed safely as specified in this written program.

3. Instruction. Workmen designated to operate arc welding equipment shall have been properly instructed and qualified to operate such equipment as specified in this written program.

vv. Application of Arc Welding Equipment

1. Assurance of consideration of safety in design is obtainable by choosing apparatus complying with the Requirements for Electric Arc-Welding Apparatus, NEMA EW-1-1962, National Electrical Manufacturers Association or the Safety Standard for Transformer-Type Arc-Welding Machines, ANSI C33.2-1956, and Underwriters' Laboratories, both of which are incorporated by reference as specified in Sec. 1910.6.

ww. Environmental Conditions

i. Standard machines for arc welding service shall be designed and constructed to carry their rated load with rated temperature rises where the temperature of the cooling air does not exceed 40 deg. C. (104 deg. F.) and where the altitude does not exceed 3,300 feet (1,005.8 m), and shall be suitable for operation in atmospheres containing gases, dust, and light rays produced by the welding arc.

ii. Unusual service conditions may exist, and in such circumstances machines shall be especially designed to safely meet the requirements of the service. Chief among these conditions are:

1. Exposure to unusually corrosive fumes.
2. Exposure to steam or excessive humidity.
3. Exposure to excessive oil vapor.
4. Exposure to flammable gases.
5. Exposure to abnormal vibration or shock.
6. Exposure to excessive dust.
7. Exposure to weather.
8. Exposure to unusual seacoast or shipboard conditions.

xx. Voltage

i. The following limits shall not be exceeded:
   1. Alternating-current machines
   2. Manual arc welding and cutting - 80 volts.
   3. Automatic (machine or mechanized) arc welding and cutting - 100 volts.
   4. Direct-current machines: Manual arc welding and cutting - 100 volts; Automatic (machine or mechanized) arc welding and cutting - 100 volts.

ii. When special welding and cutting processes require values of open circuit voltages higher than the above, means shall be provided to prevent the operator from making accidental contact with the high voltage by adequate insulation or other means.

iii. For a.c. welding under wet conditions or warm surroundings where perspiration is a factor, the use of reliable automatic controls for reducing no load voltage is recommended to reduce the shock hazard.

yy. Design

i. A controller integrally mounted in an electric motor driven welder shall have capacity for carrying rated motor current, shall be capable of making and interrupting stalled rotor current of the motor, and may serve as the running overcurrent device if provided with the number of overcurrent units as specified by

ii. On all types of arc welding machines, control apparatus shall be enclosed except for the operating wheels, levers, or handles.

iii. Input power terminals, top charge devices and live metal parts connected to input circuits shall be completely enclosed and accessible only by means of tools.

iv. Terminals for welding leads should be protected from accidental electrical contact by personnel or by metal objects i.e., vehicles, crane hooks, etc. Protection may be obtained by use of: Dead-front receptacles for plug connections; recessed openings with nonremovable hinged covers; heavy insulating sleeving or taping or other equivalent electrical and mechanical protection. If a welding lead terminal which is intended to be used exclusively for connection to the work is connected to the grounded enclosure, it must be done by a conductor at least two AWG sizes smaller than the grounding conductor and the terminal shall be marked to indicate that it is grounded.

v. No connections for portable control devices such as push buttons to be carried by the operator shall be connected to an a.c. circuit of higher than 120 volts. Exposed metal parts of portable control devices operating on circuits above 50 volts shall be grounded by a grounding conductor in the control cable.

vi. Auto transformers or a.c. reactors shall not be used to draw welding current directly from any a.c. power source having a voltage exceeding 80 volts.

zz. Installation of Arc Welding Equipment

i. General. Installation including power supply shall be in accordance with the requirements of Subpart S of this part.

ii. Grounding.

1. The frame or case of the welding machine, except engine-driven machines shall be grounded under the conditions and according to the methods prescribed in Subpart S of this part.

2. Conduits containing electrical conductors shall not be used for completing a work-lead circuit. Pipelines shall not be used as a permanent part of a work-lead circuit, but may be used during construction, extension or repair providing current is not carried through threaded joints, flanged bolted joints, or caulked joints and

special precautions are used to avoid sparking at connection of the work-lead cable.

iii. Chains, wire ropes, cranes, hoists, and elevators shall not be used to carry welding current.

iv. Where a structure, conveyor, or fixture is regularly employed as a welding current return circuit, joints shall be bonded or provided with adequate current collecting devices.

v. All ground connections shall be checked to determine that they are mechanically strong and electrically adequate for the required current

aaa. Supply Connections and Conductors

i. A disconnecting switch or controller shall be provided at or near each welding machine which is not equipped with such a switch or controller mounted as an integral part of the machine. The switch shall be in accordance with Subpart S of this part. Overcurrent protection shall be provided as specified in Subpart S of this part. A disconnect switch with overload protection or equivalent disconnect and protection means, permitted by Subpart S of this part, shall be provided for each outlet intended for connection to a portable welding machine.

ii. For individual welding machines, the rated current-carrying capacity of the supply conductors shall be not less than the rated primary current of the welding machines.

iii. For groups of welding machines, the rated current-carrying capacity of conductors may be less than the sum of the rated primary currents of the welding machines supplied. The conductor rating shall be determined in each case according to the machine loading based on the use to be made of each welding machine and the allowance permissible in the event that all the welding machines supplied by the conductors will not be in use at the same time.

iv. In operations involving several welders on one structure, d.c. welding process requirements may require the use of both polarities; or supply circuit limitations for a.c. welding may require distribution of machines among the phases of the supply circuit. In such cases no load voltages

between electrode holders will be 2 times normal in d.c. or 1, 1.41, 1.73, or 2 times normal on a.c. machines. Similar voltage differences will exist if both a.c. and d.c. welding are done on the same structure.

v. All d.c. machines shall be connected with the same polarity.

vi. All a.c. machines shall be connected to the same phase of the supply circuit and with the same instantaneous polarity.

bbb. Operation and Maintenance

i. General. Workers assigned to operate or maintain arc welding equipment shall be acquainted with the requirements of this section and with 1910.252 (a), (b), and (c) of this part.

ii. Machine hook up. Before starting operations all connections to the machine shall be checked to make certain they are properly made. The work lead shall be firmly attached to the work; magnetic work clamps shall be freed from adherent metal particles of spatter on contact surfaces. Coiled welding cable shall be spread out before use to avoid serious overheating and damage to insulation.

iii. Grounding. Grounding of the welding machine frame shall be checked. Special attention shall be given to safety ground connections of portable machines. Ground to earth is required.

iv. Leaks. There shall be no leaks of cooling water, shielding gas or engine fuel.

v. Switches. It shall be determined that proper switching equipment for shutting down the machine is provided.

vi. Manufacturers' instructions. Printed rules and instructions covering operation of equipment supplied by the manufacturers shall be strictly followed.

vii. Electrode holders. Electrode holders when not in use shall be so placed that they cannot make electrical contact with persons, conducting objects, fuel or compressed gas tanks.

viii. Electric shock. Cables with splices within 10 feet (3 m) of the holder shall not be used. The welder should not coil or loop welding electrode cable around parts of his body.

ccc. Maintenance

i. The operator should report any equipment defect or safety hazard to his supervisor and the use of the equipment shall be discontinued until its safety has been assured. Repairs shall be made only by qualified personnel.

ii. Machines which have become wet shall be thoroughly dried and tested before being used.

iii. Cables with damaged insulation or exposed bare conductors shall be replaced. Joining lengths of work and electrode cables shall be done by the use of connecting means specifically intended for the purpose. The connecting means shall have insulation adequate for the service conditions.

5. Training

a. Burkholder's employees who perform cutting, welding and brazing operations must be trained on the contents of this program. Cutters, welders and their supervisors must be suitably trained in:

i. The safe operations of their equipment and the safe use of the process.

6. Definitions

a. *Welder and welding operator* mean any operator of electric or gas welding and cutting equipment.

b. *Approved means listed or approved by a nationally recognized testing laboratory. Refer to 1910.155(c)(3) for definitions of listed and approved, and 1910.7 for nationally recognized testing laboratory.*

Attachment 1 – Burkholder's Hot Work Permit

Attachment 1

BURKHOLDER'S Heating and Air Conditioning, Inc.

Attachment 1 - HOT WORK PERMIT

Emergency Phone #:_____	**Location of Phone:**_____
Instructions	**Required Precautions Checklist**
1. Person doing Hot Work: Indicate time started and post permit at Hot Work location. After Hot Work, indicate time completed and leave permit posted for fire watch. 2. Fire Watch: Prior to leaving area, do final inspection and sign permit. Return completed permit to Foreman upon completion of fire watch.	☐ Available sprinklers, hose streams and extinguishers are in service. ☐ Hot Work equipment in good repair.
	Within 35 Feet Of Hot Work
Hot Work Being Done By: ☐ Ligonier Group Employee ☐ Contractor	☐ Flammable liquids, dust, lint and oily deposits removed. ☐ Explosive atmosphere in area eliminated. ☐ Floors swept clean of combustibles. ☐ Combustible floors wet down, covered with damp sand, metal or fire-resistive tarpaulins ☐ Remove other combustibles or protect with fire-resistive tarpaulin or metal shields. ☐ All wall and floor openings covered. ☐ Fire-resistive tarpaulins suspended beneath work to collect sparks.
Date:	
Location/Building:	**Work On Walls & Ceilings**
Nature of Task:	☐ Construction noncombustible and without combustible covering. ☐ Combustibles moved away from other side of walls.
Permission is given to complete this work, provided required precautions have been completed.	
Signature of person authorizing hot work: _____	**Work On Enclosed Equipment**
Hot Work Started at:	☐ Equipment cleaned of all combustibles. ☐ Containers purged of flammable vapirs.
Started: / Stopped:	
	Fire Watch
Fire Watch Completed (30 minutes after):	☐ Fire watch to be provided during and for a minimum of 30 minutes after work is complete. ☐ Fire watch to have a minimum 30 lb. multi-purpose (BC rated) dry chemical extinguisher. ☐ Trained in the use of equipment and in sounding the fire alarm ☐ Fire watch may be required for adjoining areas above and below
Time:	
Fire Watch Sign Off:	
Work area and adjacent areas to which sparks and heat may spread were inspected for 30 min. after hot work and found safe. Signature: _____	
Other Precautions:_____	

1. Policy Statement

a. It is the policy of Burkholder's, referred to as the "Company", to provide all employees with a safe and healthful work environment free from recognized hazards. It is also policy to maintain and actively support a comprehensive employee safety and health program.

b. Burkholder's will comply with the OSHA standard, 29 CFR 1926.251, through implementation of this written program.

2. Purpose

a. To ensure safe rigging equipment is available and safe rigging practices are utilized on all company job sites.

b. This program applies to slings used in conjunction with other material handling equipment for the movement of material by hoisting, in employments covered by this part. The types of slings covered are those made from alloy steel chain, wire rope, metal mesh, natural or synthetic fiber rope (conventional three strand construction), and synthetic web (nylon, polyester, and polypropylene).

c. To comply with OSHA standard 29 CFR 1926.251.

3. References

a. 29 CFR 1926.251

4. General Requirements

a. Rigging equipment shall not be loaded in excess of its recommended safe working load, as prescribed in OSHA 1926.251 Tables H-1 through H-20 and manufacturer specifications.

b. All riggers must be OSHA trained.

c. Rigging equipment, when not in use, shall be removed from the immediate work area so as not to present a hazard to employees.

d. Special custom design grabs, hooks, clamps, or other lifting accessories, for such units as modular panels, prefabricated structures and similar materials, shall be marked to indicate the safe working loads and shall be proof-tested prior to use to 125 percent of their rated load.

e. Tag lines shall be used to control loads.

f. All employees shall be kept clear of loads about to be lifted and of suspended loads.

g. No open hooks for rigging, unless unloading materials from truck to less than five feet.

h. All employees will exercise caution to avoid pinch points associated with rigging activity.

i. All employees shall ensure that when not in use, all rigging shall be removed from the immediate work area.

j. Inspections.

- **i.** Rigging equipment for material handling shall be inspected prior to use on each shift and as necessary during its use to ensure that it is safe.
- **ii.** Defective rigging equipment shall be removed from service.
- **iii.** Each day before being used, the sling and all fastenings and attachments shall be inspected for damage or defects by a competent person designated by the employer.
- **iv.** Additional inspections shall be performed during sling use, where service conditions warrant.
- **v.** Damaged or defective rigging shall be immediately removed from service.

k. Alloy steel chains.

- **i.** No foreign made lifting equipment shall be permitted, made in the USA only.
- **ii.** Welded alloy steel chain slings shall have permanently affixed durable identification stating size, grade, rated capacity, and sling manufacturer.
- **iii.** Hooks, rings, oblong links, pear-shaped links, welded or mechanical coupling links, or other attachments, when used with alloy steel chains, shall have a rated capacity at least equal to that of the chain.
- **iv.** Job or shop hooks and links, or makeshift fasteners, formed from bolts, rods, etc., or other such attachments, shall not be used.
- **v.** Rated capacity (working load limit) for alloy steel chain slings shall conform to the values shown in 29 CFR 1926.251 Table H-1.
- **vi.** Whenever wear at any point of any chain link exceeds that shown in 29 CFR 1926.251 Table H-2, the assembly shall be removed from service.
- **vii.** Inspections.

1. A thorough periodic inspection of alloy steel chain slings in use shall be made on a regular basis, to be determined on the basis of:
    a. frequency of sling use;
    b. severity of service conditions;
    c. nature of lifts being made; and
    d. Experience gained on the service life of slings used in similar circumstances.
2. Such inspections shall in no event be at intervals greater than once every 12 months.
3. The employer shall make and maintain a record of the most recent month in which each alloy steel chain sling was thoroughly inspected, and shall make such record available for examination.

l. Wire rope.

i. 29 CFR 1926.251 Tables H-3 through H-14 shall be used to determine the safe working loads of various sizes and classifications of improved plow steel wire rope and wire rope slings with various types of terminals. For sizes, classifications, and grades not included in these tables, the safe working load recommended by the manufacturer for specific, identifiable products shall be followed, provided that a safety factor of not less than 5 is maintained.

ii. Protruding ends of strands in splices on slings and bridles shall be covered or blunted.

iii. Wire rope shall not be secured by knots, except on haul back lines on scrapers.

iv. The following limitations shall apply to the use of wire rope:

1. An eye splice made in any wire rope shall have not less than three full tucks. However, this requirement shall not operate to preclude the use of another form of splice or connection which can be shown to be as efficient and which is not otherwise prohibited.
2. Except for eye splices in the ends of wires and for endless rope slings, each wire rope used in hoisting or lowering, or in pulling loads, shall consist of one continuous piece without knot or splice.

3. Eyes in wire rope bridles, slings, or bull wires shall not be formed by wire rope clips or knots.
4. Wire rope shall not be used if, in any length of eight diameters, the total number of visible broken wires exceeds 10 percent of the total number of wires, or if the rope shows other signs of excessive wear, corrosion, or defect.
5. When U-bolt wire rope clips are used to form eyes, 29 CFR 1926.251 Table H-20 shall be used to determine the number and spacing of clips.
6. When used for eye splices, the U-bolt shall be applied so that the "U" section is in contact with the dead end of the rope.
7. Slings shall not be shortened with knots or bolts or other makeshift devices.
8. Sling legs shall not be kinked.
9. Slings used in a basket hitch shall have the loads balanced to prevent slippage.
10. Slings shall be padded or protected from the sharp edges of their loads.
11. Hands or fingers shall not be placed between the sling and its load while the sling is being tightened around the load.
12. Shock loading is prohibited.
13. A sling shall not be pulled from under a load when the load is resting on the sling.

v. Minimum sling lengths.

1. Cable laid and 6 X 19 and 6 X 37 slings shall have minimum clear length of wire rope 10 times the component rope diameter between splices, sleeves or end fittings.
2. Braided slings shall have a minimum clear length of wire rope 40 times the component rope diameter between the loops or end fittings.

3. Cable laid grommets, strand laid grommets and endless slings shall have a minimum circumferential length of 96 times their body diameter.

vi. Safe operating temperatures.

1. Fiber core wire rope slings of all grades shall be permanently removed from service if they are exposed to temperatures in excess of 200 deg. F (93.33 deg. C).
2. When non-fiber core wire rope slings of any grade are used at temperatures above 400 deg. F (204.44 deg. C) or below minus 60 deg. F (15.55 deg. C), recommendations of the sling manufacturer regarding use at that temperature shall be followed.

vii. End attachments.

1. Welding of end attachments, except covers to thimbles, shall be performed prior to the assembly of the sling.
2. All welded end attachments shall not be used unless proof tested by the manufacturer or equivalent entity at twice their rated capacity prior to initial use. The employer shall retain a certificate of proof test, and make it available for examination.

m. Natural rope, and synthetic fiber

i. General.

1. When using natural or synthetic fiber rope slings, 29 CFR 1926.251 Tables H-15, 16, 17, and 18 shall apply.
2. All splices in rope slings provided by the employer shall be made in accordance with fiber rope manufacturer's recommendations.
3. In manila rope, eye splices shall contain at least three full tucks, and short splices shall contain at least six full tucks (three on each side of the center line of the splice).
4. In layered synthetic fiber rope, eye splices shall contain at least four full tucks, and short splices shall contain at least eight full tucks (four on each side of the center line of the splice).
5. Strand end tails shall not be trimmed short (flush with the surface of the rope) immediately adjacent to the full tucks. This precaution

applies to both eye and short splices and all types of fiber rope. For fiber ropes under 1-inch diameter, the tails shall project at least six rope diameters beyond the last full tuck. For fiber ropes 1-inch diameter and larger, the tails shall project at least 6 inches beyond the last full tuck. In applications where the projecting tails may be objectionable, the tails shall be tapered and spliced into the body of the rope using at least two additional tucks (which will require a tail length of approximately six rope diameters beyond the last full tuck).

6. For all eye splices, the eye shall be sufficiently large to provide an included angle of not greater than 60 deg. at the splice when the eye is placed over the load or support.
7. Knots shall not be used in lieu of splices.

ii. Safe operating temperatures.

1. Natural and synthetic fiber rope slings, except for wet frozen slings, may be used in a temperature range from minus 20 deg. F (-28.88 deg. C) to plus 180 deg. F (82.2 deg. C) without decreasing the working load limit.
2. For operations outside this temperature range and for wet frozen slings, the sling manufacturer's recommendations shall be followed.

iii. Splicing.

1. Spliced fiber rope slings shall not be used unless they have been spliced in accordance with the following minimum requirements and in accordance with any additional recommendations of the manufacturer:
    - **a.** In manila rope, eye splices shall consist of at least three full tucks, and short splices shall consist of at least six full tucks, three on each side of the splice center line.
    - **b.** In synthetic fiber rope, eye splices shall consist of at least four full tucks, and short splices shall consist of at least eight full tucks, four on each side of the center line.

c. Strand end tails shall not be trimmed flush with the surface of the rope immediately adjacent to the full tucks. This applies to all types of fiber rope and both eye and short splices. For fiber rope under 1 inch (2.54 cm) in diameter, the tail shall project at least six rope diameters beyond the last full tuck. For fiber rope 1 inch (2.54 cm) in diameter and larger, the tail shall project at least 6 inches (15.24 cm) beyond the last full tuck. Where a projecting tail interferes with the use of the sling, the tail shall be tapered and spliced into the body of the rope using at least two additional tucks (which will require a tail length of approximately six rope diameters beyond the last full tuck).

d. Fiber rope slings shall have a minimum clear length of rope between eye splices equal to 10 times the rope diameter.

e. Knots shall not be used in lieu of splices.

f. Clamps not designed specifically for fiber ropes shall not be used for splicing.

g. For all eye splices, the eye shall be of such size to provide an included angle of not greater than 60 degrees at the splice when the eye is placed over the load or support.

iv. End attachments.

1. Fiber rope slings shall not be used if end attachments in contact with the rope have sharp edges or projections.

v. Removal from service.

1. Natural and synthetic fiber rope slings shall be immediately removed from service if any of the following conditions are present:

a. Abnormal wear.

b. Powdered fiber between strands.

c. Broken or cut fibers.

d. Variations in the size or roundness of strands.

e. Discoloration or rotting.

f. Distortion of hardware in the sling.

n. Synthetic webbing (nylon, polyester, and polypropylene)

i. The employer shall have each synthetic web sling marked or coded to show:

1. Name or trademark of manufacturer.

2. Rated capacities for the type of hitch.

3. Type of material.

ii. Rated capacity shall not be exceeded.

iii. Webbing. Synthetic webbing shall be of uniform thickness and width and selvage edges shall not be split from the webbing's width.

iv. Fittings. Fittings shall be:

1. Of a minimum breaking strength equal to that of the sling; and,

2. Free of all sharp edges that could in any way damage the webbing.

v. Attachment of end fittings to webbing and formation of eyes.

1. Stitching shall be the only method used to attach end fittings to webbing and to form eyes.

2. The thread shall be in an even pattern and contain a sufficient number of stitches to develop the full breaking strength of the sling.

vi. Environmental conditions.

1. When synthetic web slings are used, the following precautions shall be taken:

a. Nylon web slings shall not be used where fumes, vapors, sprays, mists or liquids of acids or phenolics are present.

b. Polyester and polypropylene web slings shall not be used where fumes, vapors, sprays, mists or liquids of caustics are present.

c. Web slings with aluminum fittings shall not be used where fumes, vapors, sprays, mists or liquids of caustics are present.

vii. Safe operating temperatures. Synthetic web slings of polyester and nylon shall not be used at temperatures in excess of 180 deg. F (82.2 deg. C). Polypropylene web slings shall not be used at temperatures in excess of 200 deg. F (93.33 deg. C).

viii. Removal from service.

1. Synthetic web slings shall be immediately removed from service if any of the following conditions are present:

a. Acid or caustic burns;

b. Melting or charring of any part of the sling surface;

c. Snags, punctures, tears or cuts;

d. Broken or worn stitches; or Red Thread Visibility

e. Distortion of fittings.

o. Shackles and hooks.

i. 29 CFR 1926.251 Table H-19 shall be used to determine the safe working loads of various sizes of shackles, except that higher safe working loads are permissible when recommended by the manufacturer for specific, identifiable products, provided that a safety factor of not less than 5 is maintained.

ii. The manufacturer's recommendations shall be followed in determining the safe working loads of the various sizes and types of specific and identifiable hooks. All hooks for which no applicable manufacturer's recommendations are available shall be tested to twice the intended safe working load before they are initially put into use. The employer shall maintain a record of the dates and results of such tests.

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

iv. No hooks shall be used without a latch, which eliminates the throat opening. Hooks shall not be wired open at any time for any reason.

p. Pre-Lift Meeting.

i. Prior to any hoisting using rigging, the riggers, operators, supervisor, and any other affected persons shall participate in a pre-lift meeting.

ii. The following, at a minimum, shall be discussed/reviewed during the pre-lift meeting:

1. Load capacities (lifting equipment and rigging)
2. Affected persons roles
3. Rigging configuration calculations (sling angles, attachment hardware, etc.)
4. Communication methods (i.e. radios, hand signals, etc.)

5. Training

a. Employees performing rigging activities shall be trained in at least the following:

i. OSHA and ANSI requirements
ii. Wire rope construction
iii. Wire rope type and inspection
iv. Slings (nylon and steel)
v. Rigging hardware and accessories
vi. Center of gravity issues
vii. Calculating basic load weights, angles, and lifts
viii. Safe rigging practices
ix. Types of rope damage
x. Knowing and understanding hand signals
xi. Securing the load
xii. Unsafe conditions
xiii. Pre-lift meeting requirements
xiv. Use of communication requirements
xv. Properly don/doff personal protective equipment (PPE)

b. A record of training shall be maintained.

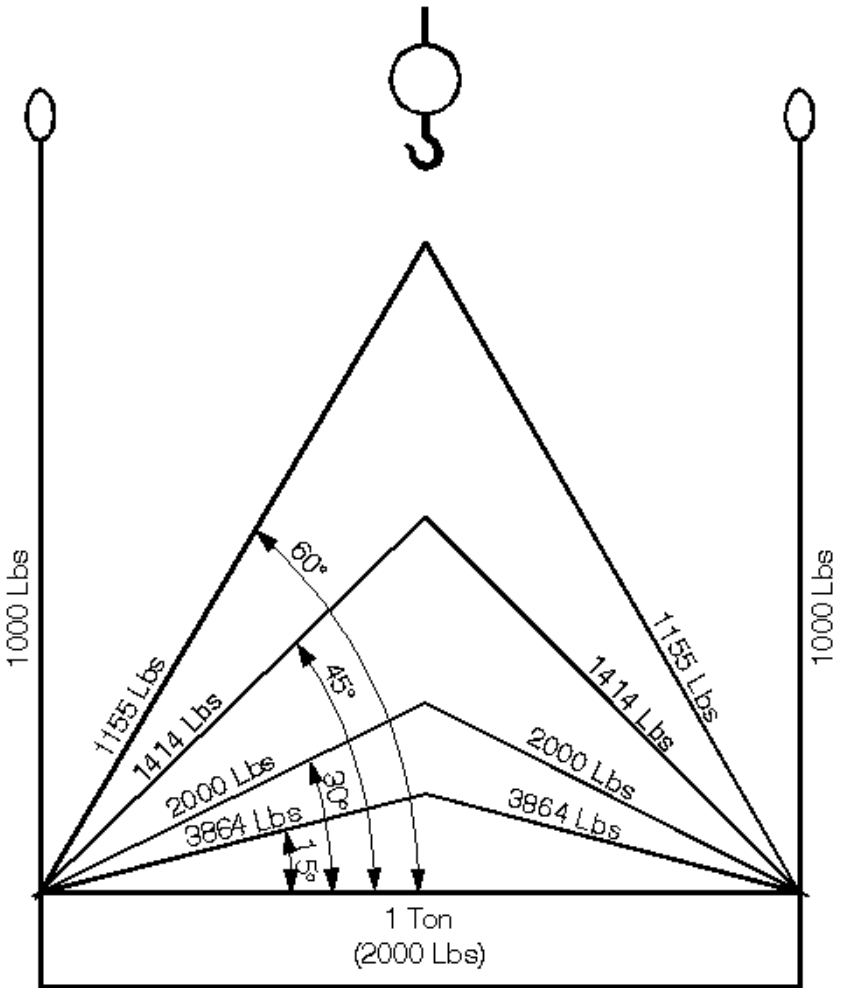
c. Training sessions will be conducted to employees who engage in rigging activities at the time of hire, and at least annually thereafter.

Attachment 1 Rigging Sling Tension Illustration
Attachment 2 Requirements for Turnbuckle installation for multiple leg slings
Attachment 3 Screw pin Shackle Capacity
Attachment 4 Wire Rope Cable Clip Sizing/Capacity Chart

Attachment 5 Installation Requirements for Wire Rope Cable Clips
Attachment 6 Rigging Eyebolt Capacity and Pull Direction Chart
Attachment 7 Open Wedge Socket Sizing Capacity
Attachment 8 Open Wedge Socket Installation Requirements
Attachment 9 Common Rigging Hitches

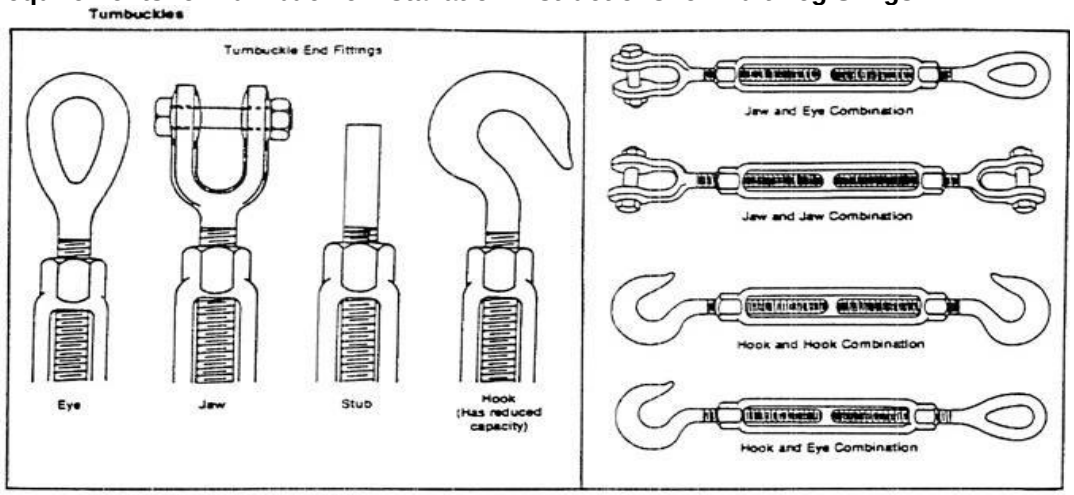
Attachment 1

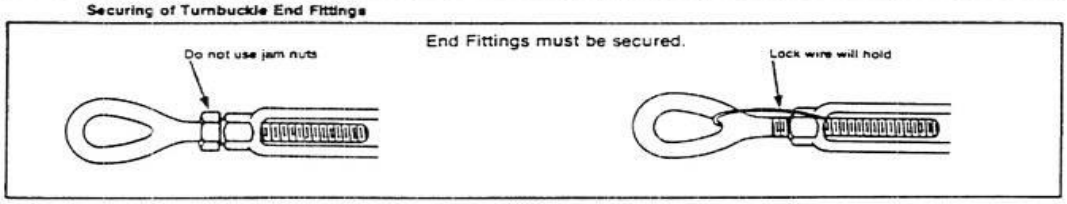
Rigging Sling Tension Illustration

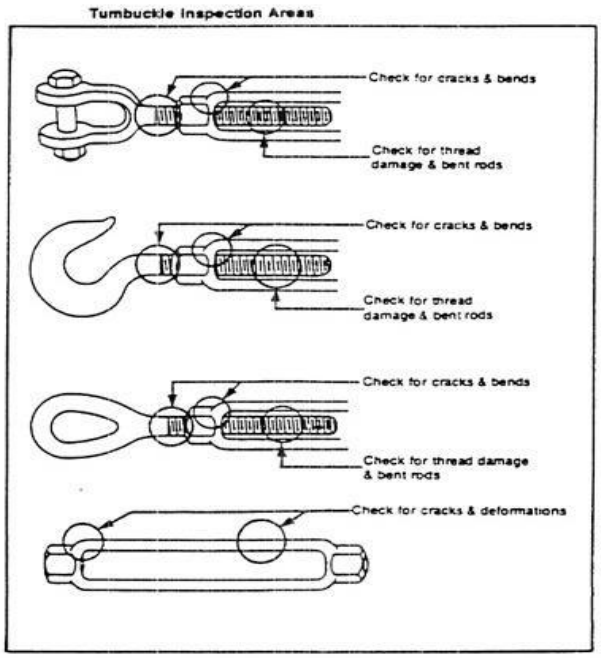


Attachment 2

Requirements for Turnbuckle Installation Instructions for Multi-leg Slings



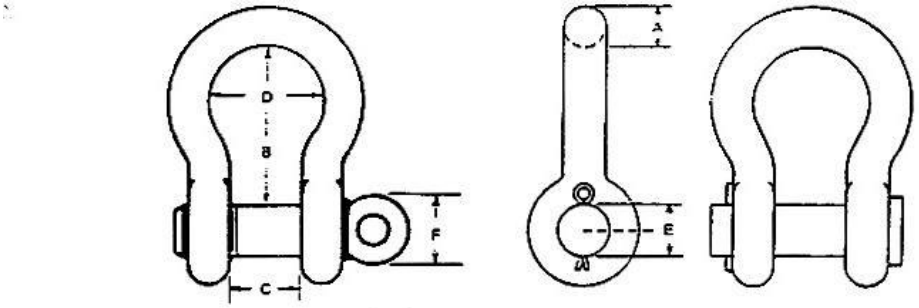




TURNBUCKLES
— Weldless Construction
— Forged Alloy Steel

End Fitting, Stock Diameter (Inches)	SWL of Any Combination of Jaw End Fittings, Eye End Fittings and Stub End Fittings (Lbs)	SWL of Any Turnbuckle Having a Hook End Fitting (Lbs)
1/4	500	400
5/16	800	700
3/8	1,200	1,000
1/2	2,200	1,500
5/8	3,500	2,250
3/4	5,200	3,000
7/8	7,200	4,000
1	10,000	5,000
1 1/4	15,200	5,000
1 1/2	21,400	7,500
1 3/4	28,000	—
2	37,000	—
2 1/2	60,000	—
2 3/4	75,000	—

Attachment 3
Screw Pin Shackle Capacity



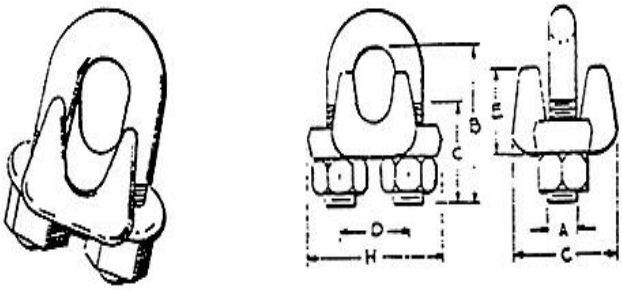
SCREW PIN ANCHOR SHACKLE ROUND PIN ANCHOR SHACKLE

ALLOY ANCHOR SHACKLES-ROUND PIN-SCREW PIN

DIMENSIONS IN INCHES

Safe Working Load-Tons	Size Inches A	Inside Length B	Inside Width		Diameter		Tolerance Plus or Minus		Weight Pounds Each
			at Pin C	at Bow D	Pin E	Outside of Eye F	Length	Width	
1/3	3/16	7/8	3/8	19/32	1/4	9/16	1/16	1/16	.05
1/2	1/4	1-1/8	15/32	25/32	5/16	11/16	1/16	1/16	.12
3/4	5/16	1-7/32	17/32	27/32	3/8	13/16	1/16	1/16	.18
1	3/8	1-7/16	21/32	1-1/32	7/16	31/32	1/8	1/16	.30
1-1/2	7/16	1-11/16	23/32	1-5/32	1/2	1-1/16	1/8	1/16	.49
2	1/2	1-7/8	13/16	1-5/16	5/8	1-3/16	1/8	1/16	.74
3-1/4	5/8	2-3/8	1-1/16	1-11/16	3/4	1-9/16	1/8	1/16	1.44
4-3/4	3/4	2-13/16	1-1/4	2	7/8	1-7/8	1/4	1/16	2.16
6-1/2	7/8	3-5/16	1-7/16	2-0/32	1	2-1/8	1/4	1/16	3.37
8-1/2	1	3-3/4	1-11/16	2-11/16	1-1/8	2-3/8	1/4	1/16	5.3
9-1/2	1-1/8	4-1/4	1-13/16	2-29/32	1-1/4	2-5/8	1/4	1/16	7.0
12	1-1/4	4-11/6	2-1/32	3-1/4	1-3/8	3	1/4	1/16	9.6
13-1/2	1-3/8	5-1/4	2-1/4	3-5/8	1-1/2	3-5/16	1/4	1/8	12.6
17	1-1/2	5-3/4	2-3/8	3-7/8	1-5/8	3-5/8	1/4	1/8	17.3
25	1-3/4	7	2-7/8	5	2	4-5/16	1/4	1/8	27.8
35	2	7-3/4	3-1/4	5-3/4	2-1/4	5	1/4	1/8	41.1
50	2-1/2	10-1/2	4-1/8	7-1/4	2-3/4	6	3/4	1/8	83.5
75	3	13	5	7-7/8	3-1/4	6-1/2	3/4	1/8	119
100	3-1/2	15	5-3/4		3-3/4	8	1	1/4	250
130	4	17	6-1/2		4-1/4	9	1	1/4	358
250	5	20	8-1/4	13	5	—	—	—	600
300	6	19-1/2	8-1/2	13	6	—	—	—	775

Attachment 4
Wire Rope Cable Clip Sizing/Capacity Chart

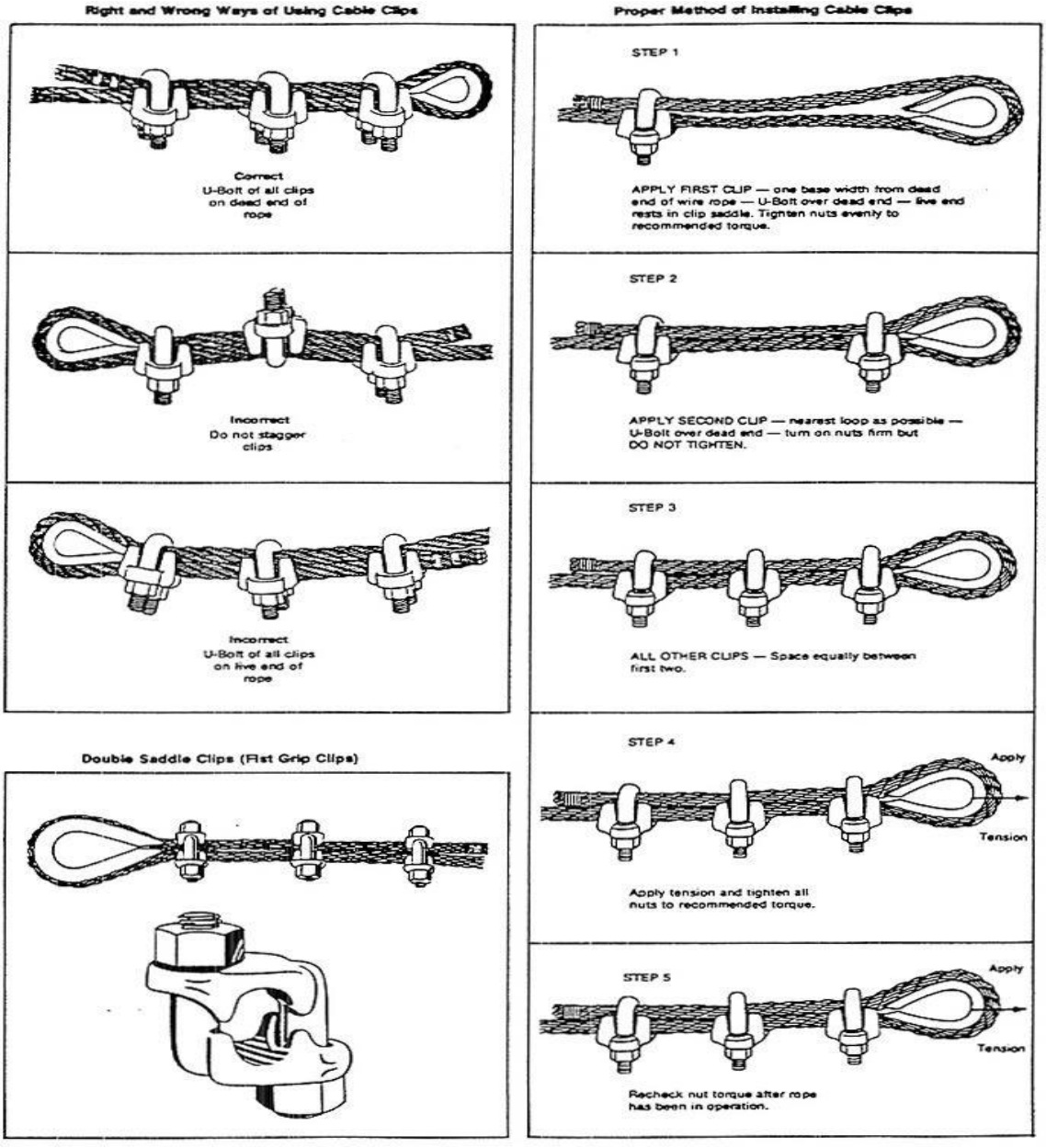


GENERAL INFORMATION

CLIP SIZE	1/8	3/16	1/4	5/16	3/8	7/16	1/2	9/16	5/8	3/4	7/8	1
A	7/32	1/4	5/16	3/8	7/16	1/2	1/2	9/16	9/16	5/8	3/4	3/4
B	23/32	31/32	1-1/32	1-3/8	1-1/2	1-7/8	1-7/8	2-1/4	2-3/8	2-3/4	3-1/8	3-1/2
C	7/16	9/16	1/2	3/4	3/4	1	1	1-1/4	1-1/4	1-7/16	1-5/8	1-13/16
D	15/32	19/32	3/4	7/8	1	1-3/16	1-3/16	1-5/16	1-5/16	1-1/2	1-3/4	1-7/8
E	25/64	1/2	21/32	23/32	29/32	1-1/64	1-1/8	1-7/32	1-11/32	1-25/64	1-37/64	1-49/64
G	13/16	15/16	1-3/16	1-5/16	1-5/8	1-13/16	1-29/32	2-1/16	2-1/16	2-1/4	2-7/16	2-5/8
H	15/16	1-5/32	1-7/16	1-11/16	1-15/16	2-9/32	2-9/32	2-31/64	2-1/2	2-27/32	3-5/32	3-15/32
Minimum No. Per Fastening	2	2	2	2	2	2	3	3	3	4	4	5
Weight Pounds Per 100	5	9	18	30	42	70	75	100	100	150	240	250

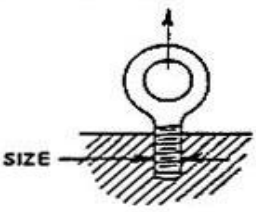
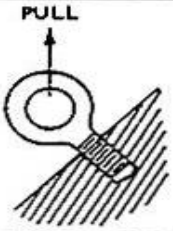
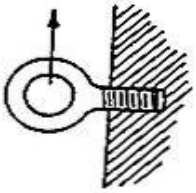
CLIP SIZE	1-1/8	1-1/4	1-3/8	1-1/2	1-5/8	1-3/4	2	2-1/4	2-1/2	2-3/4	3
A	3/4	7/8	7/8	7/8	1	1-1/8	1-1/4	1-1/4	1-1/4	1-1/4	1-1/2
B	3-7/8	4-1/4	4-5/8	4-15/16	5-5/16	5-3/4	6-7/16	7-1/8	7-11/16	8-5/16	9-3/16
C	2	2-1/8	2-5/16	2-3/8	2-5/8	2-3/4	3	3-3/16	3-7/16	3-9/16	3-7/8
D	2	2-5/16	2-3/8	2-19/32	2-3/4	3-1/16	3-3/8	3-7/8	4-1/8	4-3/8	4-3/4
E	1-29/32	2-11/64	2-5/16	2-17/32	2-21/32	2-59/64	3-9/32	3-15/16	4-7/16	4-7/8	5-11/32
G	2-13/16	3-1/8	3-1/8	3-13/32	3-5/8	3-13/16	4-7/16	4-9/16	4-11/16	5	5-5/16
H	3-19/32	4-1/8	4-3/16	4-7/16	4-3/4	5-9/32	5-7/8	6-3/8	6-5/8	6-7/8	7-5/8
Minimum No. Per Fastening	6	6	7	7	7	8	9	9	9	10	10
Weight Pounds Per 100	310	460	520	590	730	980	1340	1570	1790	2200	3200

Attachment 5
Installation Requirements for Wire Rope Cable Clips

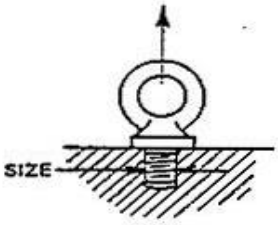
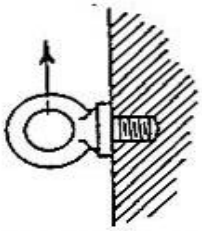


Attachment 6
Eyebolt Capacity/Pull Direction Chart

ORDINARY DROP FORGED STEEL EYE BOLTS

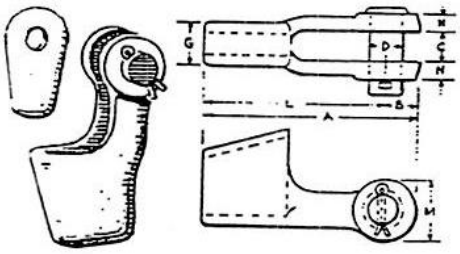
SIZE			
1/2"	1,100 lb	50 lb	40 lb
5/8"	1,800 lb	90 lb	65 lb
3/4"	2,800 lb	135 lb	100 lb
7/8"	3,900 lb	210 lb	150 lb
1"	5,100 lb	280 lb	210 lb
1-1/4"	8,400 lb	500 lb	370 lb
1-1/2"	12,200 lb	770 lb	575 lb
1-3/4"	16,500 lb	1,080 lb	800 lb
2"	21,800 lb	1,440 lb	1,140 lb

DROP FORGED STEEL SHOULDER TYPE EYE BOLTS

SIZE			
1/4"	300 lb	30 lb	40 lb
1/2"	1,300 lb	140 lb	150 lb
3/4"	3,000 lb	250 lb	300 lb
1"	6,000 lb	500 lb	600 lb
1-1/4"	9,000 lb	800 lb	900 lb
1-1/2"	13,000 lb	1,200 lb	1,300 lb
2"	23,000 lb	2,100 lb	2,300 lb
2-1/2"	37,000 lb	3,800 lb	4,300 lb

Only drop forged steel eye bolts shall be used for lifting.
Field fabricated eye bolts must be designed by a Structural Engineer.

Attachment 7
Open Wedge Socket Sizing/Capacity Chart



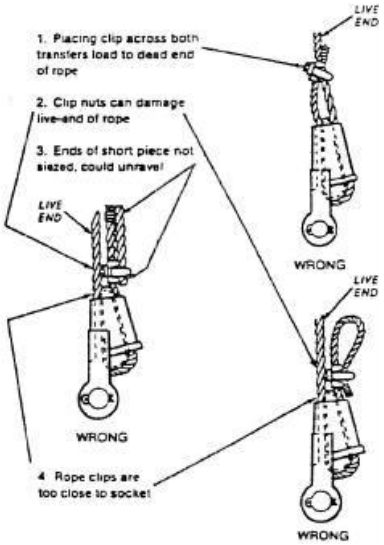
OPEN WEDGE SOCKETS

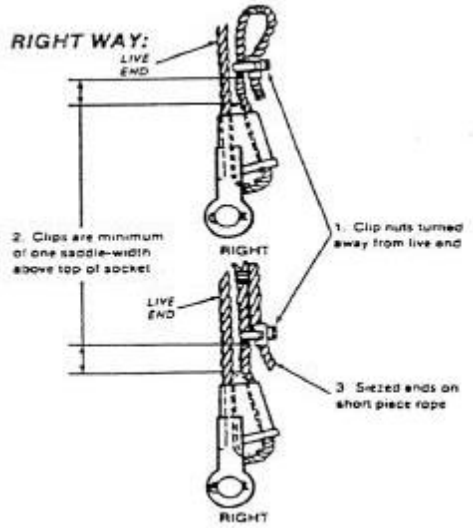
CAST STEEL

Pin diameter and jaw opening designed to open socket standards. High grade cast steel with Manganese content, heat treated to resist abrasion.

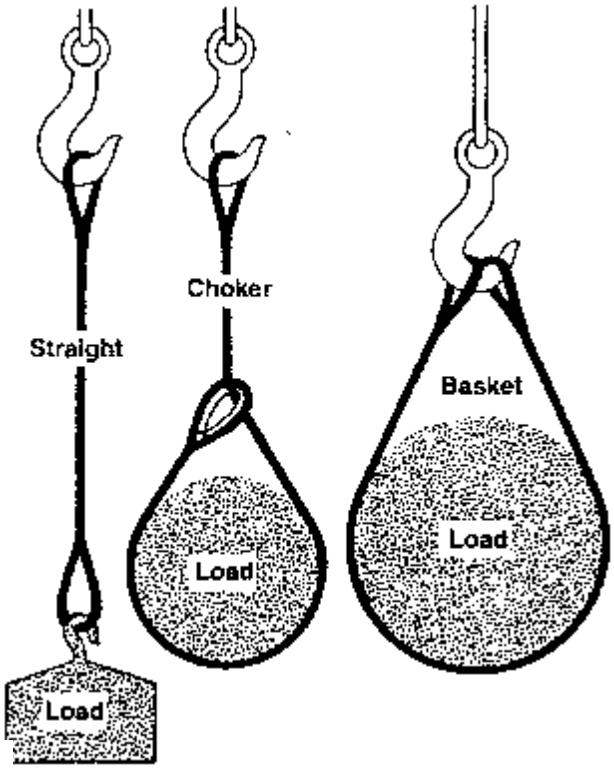
Wire Rope Diam. Inches	DIMENSIONS IN INCHES								Wt. lbs. each (with Pin)
	A	B	C	D	G	L	M	N	
3/8	5-5/8	7/8	13/16	13/16	1-1/8	4-3/4	1-9/16	7/16	2.25
1/2	6-13/16	1-1/16	1	1	1-3/8	5-3/4	1-15/16	1/2	4.75
5/8	8-5/32	1-7/32	1-1/4	1-3/16	1-3/4	6-15/16	2-1/4	9/16	8.5
3/4	9-25/32	1-13/32	1-1/2	1-3/8	2-1/16	8-3/8	2-5/8	21/32	13.6
7/8	11-5/32	1-21/32	1-3/4	1-5/8	2-5/16	9-1/2	3-1/8	3/4	21.75
1	12-3/4	2	2	2	2-9/16	10-3/4	3-3/4	7/8	31.6
1-1/8	14-3/8	2-1/4	2-1/4	2-1/4	2-15/16	12-1/8	4-1/4	1	42.6
1-1/4	16	2-1/2	2-1/2	2-1/2	3-3/16	13-1/2	4-3/4	1-1/8	57.2

Attachment 8
Open Wedge Socket Installation Requirements





Attachment 9
Common Rigging Hitches



1. **Policy Statement:**

   The purpose of the Personal Protective Equipment (PPE) Program is to protect employees from the risk of injury by creating a barrier against workplace hazards. Personal protective equipment is not a substitute for good engineering or administrative controls or good work practices, but should be used in conjunction with these controls to ensure the safety and health of employees. Personal protective equipment will be provided, used, and maintained when it has been determined that its use is required and that such use will lessen the likelihood of occupational injury and/or illness.

2. **Scope:**

   This section is to provide general management guidelines for the selection, procurement, use, maintenance and replacement of Personal Protective Equipment (PPE). This program applies to all BURKHOLDER'S employees in which a hazard assessment determines their task will require personal protective equipment.

3. **Responsibilities:**

   a. Supervisors are responsible for:

   i. Ensuring their employees are using, inspecting and maintaining PPE according to the requirements of this section.

   ii. Ensuring defective or damaged equipment is immediately replaced.

   iii. Notifying the Safety Manager when new hazards are introduced or when processes are added or changed.

   iv. Seeking assistance from the Safety Manager to evaluate hazards.

   b. Employees are responsible for:

   i. Wearing all required personal protective equipment.

   ii. Caring for, cleaning, inspecting, and maintain personal protective equipment as required.

   iii. Informing the supervisor of the need to repair or replace PPE.

4. **Selection and Determination:**

   a. Hazard Assessments

   i. A certified hazard assessment must be conducted before each task to determine the need for personal protective equipment.

ii. The hazard assessment will identify hazards that exist, or may exist, and the correct PPE to protect the worker from the hazard.

iii. The hazard assessment will be written and documented, and contain the name of the certifier, names of the employees performing the task, signatures of all participants, and the date in which the assessment was completed.

b. Selection

i. Personal protective equipment shall only be worn when engineering and administrative controls are not feasible.

ii. All personal protective equipment shall be of safe design and construction for the work being performed. Only those items of protective clothing and equipment that meet current NIOSH or ANSI standards will be procured or accepted for use.

iii. Careful consideration will be taken to ensure size and fit. Improper fitting of personal protective equipment hinders its safety function. Personal protective equipment is available and all sizes and BURKHOLDER'S will ensure each employee receives the proper fit.

5. Availability:

a. Management will be responsible for ordering and maintaining a stock of necessary personal protective equipment.

b. Personal protective equipment shall be readily available to employees.

c. Employees may request replacement personal protective equipment whenever their current equipment is damaged, defective, or deficient in any way.

6. Maintenance and Use:

a. Maintenance

i. Safety equipment shall be kept in good condition or replaced.

ii. Personal protective must remain in a clean and sanitary condition.

iii. Contaminated PPE which cannot be decontaminated shall be disposed of in a manner that protects employees from exposure to hazards and according to environmental policies regarding contaminated equipment.

b. Use

i. Employees may not bring their own personal protective equipment
ii. Employees shall use required personal protective equipment.
iii. Tampering and altering personal protective equipment is prohibited.

7. BURKHOLDER'S Required PPE:

a. ENTER PERSONAL PROTECTIVE EQUIPMENT REQUIREMENTS OF YOUR BURKHOLDER'S(ex. Employees must wear safety glasses in shop, all employees must wear FR clothing, etc…)

8. Inspection:

a. The purpose of personal protective equipment is to form a barrier between the worker and the hazard. For that reason, personal protective equipment is constantly subject to damage. PPE should be visually inspected before use, inspections should look for the following:

i. Cracks and breaks.
ii. Rips and tears.
iii. General ware such as faded colors and missing stickers and warning signs.
iv. Scratches to lenses and masks that may hinder clear vision.
v. Holes in clothing or footwear.
vi. Any other signs of damage that may prevent the personal protective equipment from forming a barrier between the worker and hazard.

b. It is the responsibility of the employee to inspect their personal protective equipment before use.

c. It is management's responsibility to replace defective personal protective equipment.

d. Defective personal protective equipment shall be removed from service immediately.

9. Training and Documentation:

a. Training

i. Training shall be provided to every employee that is required to use personal protective equipment.
ii. Training will be specific to BURKHOLDER'S and include:

1. PPE Hazard Assessment training
2. When PPE is necessary
3. What PPE is necessary
4. Why PPE is necessary
5. The proper care, maintenance, and useful life and disposal of PPE.

iii. Training will occur upon hiring and before initial assignment.

b. Retraining

i. Retraining shall be conducted when:

1. There is reason to believe a previously trained employee does not have or has inadequate understanding and skill necessary to utilize and maintain the PPE correctly.
2. Changes in the workplace render previous training obsolete.
3. Changes in the types of PPE render previous training obsolete.

ii. All employees will be retrained on PPE annually.

c. Documentation

i. BURKHOLDER'S will document PPE training for all employees.

ii. Training documents will include:

1. Name of trainer.
2. Date of training.
3. Training topic.
4. Names and signatures of employees trained.

1. Policy Statement

a. It is the policy of Burkholder's to provide all employees with a safe and healthful work environment, free from recognized hazards. It is also policy to maintain and actively support a comprehensive employee safety and health program.

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

c. Burkholder's will comply with the OSHA ***Electrical*** standard, 29 CFR 1910 Subpart S and 29 CFR 1926 Subpart K, through implementation of this written program.

2. Purpose

a. To ensure all electrical hazards are controlled to prevent accidental employee contact.

b. To ensure all employees are adequately trained to provide an awareness level of knowledge required to avoid electrical contact, to ensure lockout, tagout and tryout requirements are met.

c. To determine the requirements of "Qualified" employees who are permitted to work in close proximity of electrical conductors.

3. References

a. 29 CFR 1910.331Electrical, Scope

b. 29 CFR 1910.332 Electrical, Training

c. 29 CFR 1910.333 Electrical, Selection and Use of Work Practices

d. 29 CFR 1910.334 Electrical, Use of Equipment

e. 29 CFR 1910.335 Electrical, Safeguards for Personal Protective Equipment

f. NFPA 70 E Electrical Standard

4. General Requirements

a. Responsibilities

i. Management

1. Ensure employees are provided with the necessary tools and equipment to successfully perform work near energized equipment.

2. Ensure periodic reviews of this written program are conducted.
3. Ensure periodic audits, at least annually, of employee's utilization of this program. If deviations or inadequacies are identified, management will take necessary action to correct.
4. Ensure an adequate level of training is provided for all employees covered by this program.
5. Ensure an investigation is conducted for all incidents involving contact with live electrical conductors. Causes and deficiencies should be identified and corrective action should be implemented to prevent recurrence.

ii. Supervisors

1. Ensure the procedures established by this written program are being followed though periodic audits and discipline.

iii. Employees

1. Employees shall not by-pass any system or procedure intended to protect them from the unexpected contact with energized parts, machines, wiring methods or other means that has the potential to shock and cause serious injury of death.
2. Employees shall comply with the procedures set forth by this written program.
3. Employees have the right to utilize the Stop Work Authority granted to them under the Stop Work Program where there is a risk of contact with energized equipment, overhead lines, wiring methods, or other means or any other method that has the potential to shock and cause serious injury.

iv. Guidelines

1. Only qualified persons are permitted to work on energized electrical equipment, including but not limited to electrical panels, wiring, and switches.
2. All electrical equipment should be considered energized, until proven otherwise by disconnecting means and testing.

3. All circuits must be de-energized before work is performed. Use of the Control of Hazardous Energy (LOTO) Program procedures is required to be utilized to prevent electrical circuits from inadvertent energization.
4. No employee is to render electrical interlocks inoperative by removal, modification or destruction.
5. All equipment, including mobile, must maintain minimum clearance distances (10 ft.) from overhead power lines.
6. When work is performed near energized power lines the following steps need to be implemented:
    a. All overhead power lines should be considered energized.
    b. Identification of all overhead power lines which present a hazard during working operations.
    c. After identification, one of the two steps must be implemented prior to work being performed:
        a. De-energizing of the power lines from the utility provider. Work may be performed under de-energized overhead power lines which have been visibly grounded and locked/ tagged out procedures have been implemented. Any employee has the right to utilize the STOP Work Authority if concerns are not addressed by the utility provider.
        b. When working around or under energized power lines where contact with energized lines by machinery exists the height plus ten rule is in effect. 10 foot ruling is in effect for lines 50 kV or less, above 50 kV requires 10 feet plus 0.4 inches for each 1 kV over 50 kV.

v. Selection of Tools and Equipment

1. Double insulated or grounded electrical tools are required to be used when working on equipment that has been de-energized or locked and tagged out.
2. Ground Fault Circuit Interrupters (GFCI's) are required to be used with all extension cords and plug power tools, especially in wet or damp environments.
3. The use of non-conductive ladders shall be implemented when working near electrical equipment, energized electrical conductors or where there is potential for electrical shock.

vi. Personal Protective Equipment

1. Personal Protective Equipment (PPE) will be worn while any work is being performed where an energized line could exist. The requirements for PPE are addressed in the Personal Protective Equipment Program.

5. Training

a. The following training will be implemented and documented to all affected employees to meet the requirements of OSHA 29 CFR 1910.332 and comply with the existing STOP Work Authority Program:

i. Meet the requirements for non-qualified training requirements set forth by OSHA 29 1910.332.

ii. Identify the correct selection, use and inspection of all tools and equipment (double insulated or grounded electrical tools and GFCI's) that needs to be utilized when performing work.

iii. The application and utilization of the STOP Work Authority Program when working on or near exposed energized electrical parts.

6. Definitions

a. Qualified Person- for the purpose of this document, a qualified person is defined as those employees who have been trained in accordance with 20 CFR 1910 parts 331-335 and have received training for avoiding the electrical hazards of working on or near exposed energized electrical parts.

b. Non-Qualified Person- for the purpose of this document, a non-qualified person is defined as those employees who have been trained in accordance with 29 CFR 1910 parts 331-335. However, they have not received training for avoiding the electrical hazards of working on or near exposed energized electrical parts and therefore may not do so.

c. Stop Work Authority- is defined as the 'authority and obligation' of any individual to suspend a single work task or group operation when the control of SH&E risk is not clearly established or understood. In general terms, the SWA process involves a stop, notify, correct and resume approach for the resolution of a perceived unsafe condition, act, error, omission, or lack of understanding that could result in an undesirable event.

d. Ground Fault Circuit Interrupter (GFCI) - A type of switch that is disabled if the electricity should come into contact with water. GFCIs should be used whenever there is a chance for electricity to come into contact with water.

e. Voltage- A measure of electrical pressure or potential. Voltage is measured in volts and is represented as a capital V.

f. Energized- for use in this program, is defined as a way of describing a wire or device that has current following through it. All necessary safety precautions must be observed near electrically charged devices.

1. Policy Statement

a. It is the policy of Burkholder's to provide all employees with a safe and healthful work environment, free from recognized hazards. It is also the policy to maintain and actively support a comprehensive employee safety and health program.

b. Burkholder's will achieve the goal of providing a reasonable safe workplace and meet compliance with the OSHA Hazard Communication Standard (29 CFR 1910.1200) through implementation of the elements provided within this written Hazard Communication Program.

2. Purpose

a. Prevent chemical related illness and injuries.

b. Ensure hazards with chemicals used at the jobsite or workplace are clearly communicated.

c. Effectively plan for non-routine use of hazardous chemicals.

d. Provide model for adequate Hazard Communication Training.

e. To inform employees of the contents of the OSHA Hazard Communication Program (29 CFR 1910.1200).

3. References

a. 29 CFR 1910.1200 Hazard Communications

4. General Requirements

a. Application

i. This written Hazard Communication Program applies to all employees involved in work operations with actual or potential exposure to hazardous chemicals and substances.

ii. Sub-contractors shall also comply with requirements of this written program OR have their own company written program meeting at least the minimum requirements of the OSHA Hazard Communication standard (29 CFR 1910.1200).

b. Hazard Identification

i. A chemical inventory is maintained for each subsidiary and/or division of Burkholder's. This chemical inventory is a list of the hazardous chemicals or products known to be present in the respective workplaces.

ii. Burkholder's relies on the hazard evaluation information provided by the manufacturer(s) of the hazardous chemicals and products identified on the manufacturer's Safety Data Sheet (SDS).

iii. Non-Routine Tasks (i.e. cleaning tanks, confined space entry, etc.). Non-routine tasks will be evaluated on a case-by-case basis.

1. All non-routine tasks will be evaluated before the task commences to determine all hazards present. An evaluation will be conducted by the direct supervisor. The supervisor may require assistance from the Safety Director or field employees as needed.

2. Once the hazard determination is made, the direct supervisor and management will determine the necessary precautions needed to remove, eliminate or protect affected employees from the hazard (example: use of personal protective equipment). In addition, management will provide specific safety training for affected employees and will document the training on an annual basis.

c. Safety Data Sheets (SDS)

i. The Company will maintain or have access to an SDS for every hazardous chemical or product know to be present in the workplace.

ii. Each SDS shall be in English (but may also be in other languages) and contain at least the following information:

1. Identification

2. Hazards(s) Identification

3. Composition/information on Ingredients

4. First-Aid Measures

5. Fire Fighting Measures

6. Accidental Release Measures

7. Handling and Storage

8. Exposure Controls/Personal Protection

9. Physical and Chemical Properties

10. Stability and Reactivity

11. Toxicological Information

12. Ecological information

13. Disposal Considerations

14. Transport Information

15. Regulatory Information

16. Other Information, Including Date of Preparation or Last Revision

iii. The Safety Data Sheets shall be readily available in the following locations:

1. Foreman's / Mechanics binders/trucks

2. Burkholder's Garages

3. A master SDS list, copy of SDS(s), and replacement SDS can be obtained from the Corporate Safety Manager

iv. SDS will be obtained from the manufacturer or the product distributor. The Corporate Safety Manager periodically audits the field SDS binders to ensure that the binders maintain the most current SDS for chemicals found in the workplace, at least annually. These audits include site audits and communication with division management and supervision.

v. As new chemicals are purchased/used in the workplace, the respective inventory lists will be updated and a search will verify that an SDS is available.

vi. Newly acquired SDS sheets with be distributed to all affected employees.

d. Labels and other forms of warning

i. The chemical manufacturer, importer or distributor shall ensure that each container is labeled, marked or tagged with the following information:

1. Name, Address and Telephone Number

2. Product Identifier

3. Signal Word

4. Hazard Statement(s)

5. Precautionary Statement(s)

6. Pictogram(s)

ii. Burkholder's will rely on the container labels provided by the manufacturer (provided that they meet minimum requirements as set forth by this written program).

iii. Container labels shall not be removed or defaced. Containers shall be re-labeled if they become illegible.

iv. If a hazardous chemical is transferred from a large container (i.e. 55-gal drum) to a secondary container (i.e. spray bottle), and the secondary container is not labeled by the manufacturer, a label containing the minimum required information as outlined in section 13.4.4 shall be attached.

v. The Hazard Material Information System or the NFPA diamond may be used to label secondary containers. Each system includes a hazard ranking that can be determined using the chemical or product's SDS – contact the Corporate Safety Manager for assistance. (this will phase out eventually)

vi. Container labeling will be frequently audited at each workplace by company supervision (i.e. foreman, supervisor) and periodically audited by a representative of the Corporate Safety Manager.

vii. All hazardous chemical containers will be evaluated to ensure correct labeling is attached when shipment is received.

5. Training

a. All employees who work with or are potentially exposed to hazardous chemicals will receive initial training and any necessary retraining on the Hazard Communication Standard and the safe use of the hazardous chemicals found at their workplace. When a new hazard is introduced or a non-routine task identified, additional training will be provided.

b. Training Content.

i. The goal is to ensure employee comprehension and understanding including being aware that they are exposed to hazardous chemicals, knowing how to read and use labels and SDSs, and appropriately follow the associated protective measures. A program that uses audiovisual materials, classroom type training, or handouts will be utilized.

ii. Summary of the requirements of the OSHA Hazard Communication Standard (29 CFR 1910.1200).

iii. Operations in the workplace that contain hazardous chemicals.

iv. The location and availability of this written Hazard Communication Program, including the chemical inventory list(s), and corresponding Safety Data Sheets.

v. Detailed description of the labeling system (HMIS®).

vi. Chemical and physical properties.

vii. Physical and Health hazards.

viii. Signs and symptoms of exposure.

ix. Procedures to protect against the associated hazards.

c. Training is provided at initial hire by the employee's immediate supervisor or a member of the Corporate Safety Department and is reinforced intermittently during weekly safety talks.

d. The Corporate Safety Manager will review employee training records and advise supervisors on training or retraining needs.

e. Annual safety training is conducted, during which employees are offered the opportunity to ask questions about any safety-related issues including Hazard Communication.

f. Multi-employer Workplace

i. When workers of other employers (whether affiliated with the Company, or not) will be working at the workplace, the following shall occur:

1. Provide other employer(s) with SDSs of chemical(s) used at the jobsite to which their employees may be exposed; and

2. Provide labeling and/or emergency and precautionary information regarding the chemical(s).

g. Additional Information

i. All employees, or their designated representatives, can obtain further information on this written program, the hazard communication standard,

applicable SDSs, and chemical inventory lists from the Corporate Safety Manager upon request.

1. INTRODUCTION AND POLICY STATEMENT

a. The purpose of the Fleet Safety Program is to provide guidelines and procedures for Burkholder's employees to utilize in carrying out their assignments and responsibilities as it pertains to company owned or leased vehicles and for personal vehicles driven on company business.

b. Our company's vehicle safety program has been instituted to promote safe vehicle operation by our drivers, to reduce the frequency and severity of losses associated with our vehicle operations and to promote positive customer and public relations.

c. While placing a price tag on the value of lives lost and suffering incurred is incalculable, the medical costs and associated vehicle repairs run into the millions of dollars. By taking positive steps, Burkholder's has proven that instituting a well-run Fleet Safety Program can significantly reduce insurance costs and reduce the amount of time that vehicles and employees are non-productive.

d. It is very important that the system outlined in the following pages be implemented by all employees, and that the importance of these procedures is emphasized by senior levels of local management.

2. DEFINITIONS

a. The Fleet- The fleet consists of all Burkholder's owned or leased motor vehicles. It includes all automobiles, pick-up trucks, large trucks and all other classes of vehicles that are operated routinely on public roads.

b. Fleet Driver- A Fleet Driver is any employee or other authorized operator assigned or allowed to operate a fleet vehicle.

c. DOT (Department of Transportation) Driver- Specialized individual operator, who by virtue of function or vehicle operated, is subject to additional federal regulatory

restrictions, will possess a CDL (Commercial Driver's License) to operate fleet vehicle(s).

d. MVR (Motor Vehicle Record)- A certified copy of an individual's driving record for at least the past three years of operation, obtained from the Department of Motor Vehicles in the state which the driver's license is issued.

3. RESPONSIBILITIES – ADMINISTRATOR FLEET CONTROL PROCESS

a. While a Fleet Control System, like any other endeavor, should be the responsibility of all employees, the overall coordination should rest with one individual. Everyone in the organization should understand that the Fleet Director is not solely responsible for the process' success. Fleet exposure control must be everyone's responsibility. The following are the duties of the Fleet Administrator:

- **i.** Monitor accident reports and maintain responsibility for accurate reports to be forwarded to the insurance company.
- **ii.** Promote general control system awareness throughout the population of fleet drivers.
- **iii.** Create local policies in conformance with this process for all areas of fleet exposure control, including such items as equipment selection and vehicle maintenance.
- **iv.** Selection, approval, and training of drivers. This includes background checks of drivers and personally conducting training as needed.
- **v.** Monitor the drivers' safe operation of vehicles and driving records.

b. Communicate regularly and periodically with upper management on Fleet Auto Control Safety issues.

c. For that small percentage of drivers who do not or will not follow the processes, there often exists a need for *mandatory* training.

4. EMPLOYEE INVOLVEMENT

a. Within 30 days of hire moving from a non-driving position to one which requires driving, the basics of this manual should be reviewed, with emphasis on the need for cooperation. At that time, each employee should receive a copy of the Burkholder's Corporate Policy statement (Appendix A) and return the signed copy.

b. Immediately notify their supervisor in the event that their operator's license is revoked, canceled, denied, suspended, or restricted in some manner which would affect their legal right to drive.

c. Accident Review Committees:

The Accident Review Committee (of upper management personnel) will come together for the sole purpose of investigating accidents and incidents. The committee's function is to establish or attempt to establish the reasons behind such situations. Resulting information can be used to modify the Fleet Safety Program, and where necessary recommend discipline. Any discipline will be the responsibility of Upper Management.

5. DRIVER QUALIFICATIONS – SELECTION AND SCREENING

a. Drivers typically enter into this process in one of two ways: as *new hires* (or newly promoted employees), or *existing employees* when the process may be covered as a new program is introduced.

b. A cornerstone of a successful control system calls for the establishment of minimum driver qualifications for participating employees. The following are **mandatory prerequisites** for drivers/employees who drive company owned vehicles and employees who drive personal vehicles on company business:

- **i.** Must possess a valid driver's license of the type necessary for the type of driving required. The license must be current and have no restrictions that would keep the driver from lawfully operating the motor vehicle.
- **ii.** Be familiar with the codes, laws, and regulations in the jurisdiction(s) in which they will be operating the vehicle and the policies and procedures used in this process.
- **iii.** Careful consideration should be given to who is granted the privilege to drive a company vehicle. The driver's history of violations and accidents will be reviewed for the past three (3) years.

6. DRIVER CONDUCT REQUIREMENTS

a. Objective:

To establish specific standards for driver conduct and to reduce incidences of unacceptable activities and behaviors that may lead to vehicular accidents.

b. Policy:

Drivers of company owned vehicles, or vehicles leased or rented for company business must comply with the following:

i. All vehicles are to be used for business only.

ii. Properly wear safety belts.

iii. Ensure that all passengers are properly restrained, including all back seat passengers.

iv. Ensure that the passengers do not exceed the vehicle's seating capacity. No passengers in the back of vans or trucks.

v. Never operate a vehicle when the ability to do so is impaired by alcohol, drugs, medication, illness, fatigue, or injury. This includes prescription medications prescribed after a medical procedure which could inhibit driving ability.

vi. No employee shall operate a fleet vehicle in violation of Burkholder's, local, State or Federal regulations. (Employee is responsible for paying all parking and traffic violation fines and associated costs incurred while operating or in charge of an Burkholder's vehicle.

vii. No driver shall allow any other employee driver to operate an assigned fleet vehicle without his/her supervisor's approval. No other persons (non-fleet drivers or non-employees) may be permitted to operate the vehicle.

viii. Each driver must report every accident and property damage incident involving the fleet vehicle to his/her supervisor within 24 hours workday. Immediate notice is required in all cases involving bodily injury, regardless of how slight.

ix. No employee shall falsify, withhold, or suppress any fleet related reports or information.

x. Each driver must remove the ignition key and lock all doors on his/her assigned fleet vehicle whenever it is left unattended and unsupervised.

xi. No employee shall refuel a vehicle with the engine running, or smoke near any vehicle that is being refueled or serviced.

xii. No driver shall prematurely leave the scene of an accident involving the driver or vehicle being operated, except temporarily to summon police or medical assistance.

xiii. No employee shall cause physical damage to a fleet vehicle, or allow physical damage or loss to occur by his/her failure to act.

xiv. Fleet vehicles must be properly registered and inspected for operation upon streets or highways.

xv. No smoking, vaping, and or tobacco products in fleet vehicles.

xvi. No driver shall use electronic devices and cell phones for phone calls or text messaging purposes while driving a company vehicle, except while utilizing a hands free system, and even then only in limited use.

xvii. Drivers must have a valid driver's license and should not have a recent history (36 months) of motor vehicle convictions such as the following:

1. Driving with a suspended, revoked, denied, or canceled driver's license.
2. Driving outside of the restrictions placed on license (i.e., driving outside of court or governmental imposed driving time restrictions).
3. Operating a motor vehicle while under the influence of alcohol, illegal drugs, or refusing to take a sobriety test.
4. Failure to stop or identify oneself after a crash.
5. Using a motor vehicle to elude or attempt to elude a law enforcement officer.
6. A traffic violation resulting in death, catastrophic, or serious injury.
7. Any other significant violation warranting suspension of a driver's license.

xviii. Obey all applicable laws, codes, and regulations.

xix. Drive defensively, anticipating and taking appropriate actions to avoid situations where incidents are likely to occur.

xx. Plan trips: Drivers should select the safest route, allow sufficient time so as not to be required to speed, allow for weather contingencies, and when visiting new areas, and be familiar with local regulations.

7. **VEHICLE INSPECTION AND MAINTENANCE**
   - **a.** Vehicles should be maintained on a routine schedule to identify and repair any problems. The operator is responsible for the vehicle which he/she is assigned.
   - **b.** Vehicle Records are required to be kept in the vehicle at all times. The compilation of records for this section deals primarily with those records that relate to and help assure that proper vehicle maintenance is being carried out. These records can include the following:
     - **i.** Vehicle inspections
     - **ii.** Service and repair
     - **iii.** Government mandated reports
   - **c.** Routine inspections (See Appendix A for an example checklist) should be reviewed regularly by those assigned the vehicle.

8. **ACCIDENT / PHYSICAL DAMAGE REPORTING PROCEDURES**
   - **a.** Each fleet Driver is required to report every accident and property damage incident involving a fleet vehicle within 24 hours.
   - **b.** Each fleet vehicle has been provided a "glove-box" accident reporting kit by Burkholder's that should be completed at the accident scene.
   - **c.** In event of an accident involving a fleet vehicle:
     - **i.** Dial local law-enforcement authority to report the accident. Dial 911 first, then "0" if 911 is not available.
     - **ii.** Be prepared to give your name, a description of the accident location, cross-streets or local landmarks to help locate the scene, a brief description of the accident, a brief description of any injuries and the location from which you are calling. Remain calm and stay on the line – let the dispatcher terminate the call.
     - **iii.** As soon as possible, telephone the Safety Fleet Coordinator to report the accident or gain assistance in completing any accident reports or paperwork.
     - **iv.** Drivers should not discuss accidents with anyone except Burkholder's managers and representatives of our insurance company or their attorneys, or investigating Police Department Officers.

v. Each fleet driver must immediately notify his/her supervisor of all accident related contacts by representatives of other insurance companies or their attorneys or by any "outside" investigators.

9. MANAGEMENT RESPONSIBILITIES

a. Implementation of this process is the responsibility of each and every employee who uses a company vehicle in the course of their employment or supervises an employee who uses a company vehicle.

b. Failure to follow procedures outlined within the Fleet Safety Program may result in disciplinary action up to and including termination. This will be viewed on a case by case basis by upper management.

c. Again, the goal of this program is to reduce accidents and injuries and save lives.

APPENDIX "A"
VEHICLE INSPECTION CHECKLIST

The following items are suggestions for inclusions into a Vehicle Safety and Maintenance Checklist. The checklist should include dates that systems were checked. See Appendix C.

Items with an asterisk * are to be in or on all vehicles at all times.

_____ Valid vehicle inspections sticker, if applicable*
_____ Vehicle registration*
_____ Safety triangle or cone*
_____ Fire extinguisher*
_____ Ice scraper, if necessary*
_____ Insurance card *
_____ Spare tire and jack*
_____ Windshield wipers & washer fluid
_____ Safety restraints
_____ Mirrors

_____ Horn
_____ Headlights (high and low beams)
_____ Backup lights
_____ Hazard flashers
_____ Anti-theft devices operational
_____ Turn signals
_____ Tail lights & brake lights
_____ Tires (inflation and tread wear)
_____ Coolant level
_____ Engine oil level
_____ Transmission fluid level
_____ Power steering fluid level
_____ Brake fluid level
_____ Brakes
_____ General mechanical condition
_____ Appearance (scratches, dents, etc)
_____ Cleanliness
_____ Small First Aid/Trauma Kit

APPENDIX "B"

TIME

Date of accident:……..……20…….Day of week…….Hour……A.M. /P.M.

Road on which accident occurred _____

At intersection _____ feet north, south, east, west, of _____show nearest intersecting street or highway house number, bridge, railroad crossing, underpass or milepost.

~~Place where accident occurred: County_____ City, town, or township_____ State_____~~

If accident was outside city limits, indicate distance from nearest town_____ miles

VEHICLES TOTAL # .....INVOLVED

VEHICLE – No. 1	**VEHICLE – No. 2**
YEAR MAKE TYPE (SEDAN, TRUCK)	YEAR MAKE TYPE (SEDAN, TRUCK)
VEHICLE _____	VEHICLE
LICENSE PLATE # STATE	LICENSE PLATE # STATE
DRIVER'S FULL NAME	DRIVER'S FULL NAME
DRIVER'S ADDRESS	DRIVER'S ADDRESS
DRIVER'S PHONE NUMBER	DRIVER'S PHONE NUMBER
Age____ Male ___Female ___ Driver's License # _____	Age____ Male ___ Female ___ Driver's License # _____
Part of vehicle damaged_____	Part of vehicle damaged_____
DRIVER'S INSURANCE CARRIER/PHONE NUMBER:	DRIVER'S INSURANCE CARRIER/PHONE NUMBER:

PROPERTY

Damage to property other than vehicles (Name object and state nature of damage)

_____

_____

_____

Name and address of owner of object struck

Approximate cost to repair $

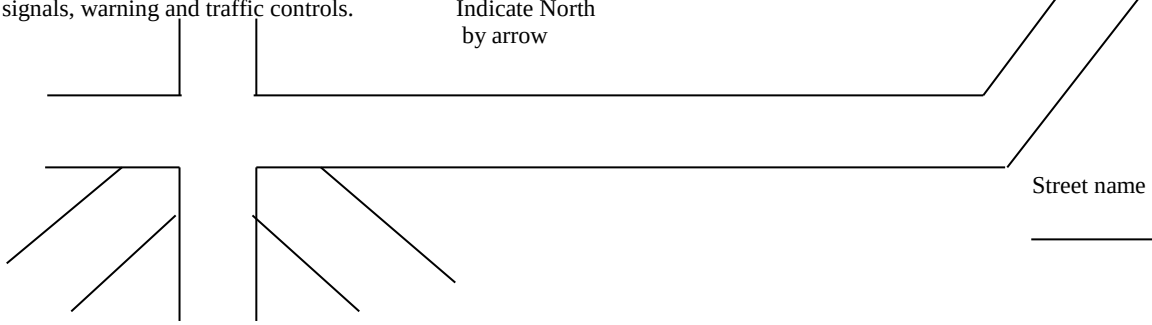
DESCRIBE WHAT HAPPENED *(use separate sheet as needed)*

_____

_____

Indicate on this diagram what happened. Use one of these outlines to sketch the scene of your accident, writing in street or highway names or numbers. Show signs, signals, warning and traffic controls.

Indicate North by arrow



Street name or highway Number

_____

Did Police investigate? Yes ☐ No ☐

If yes which one? ☐ City Police ☐ Sheriff ☐ State

Date of this report

Prepared by:

Name and Address of Injured:
Name and Address of Witnesses

Many employees operate company owned, leased, rental or personal vehicles as part of their jobs. Our Insurance Carrier, along with Federal/State Regulations, requires us to adhere to strict provisions for vehicle operations. Thus, we take this opportunity to advise you of the following.

Employees are expected to operate vehicles safely to prevent accidents which may result in injuries and property loss. It is the policy of Burkholder's to provide and maintain a safe working environment to protect our employees and the citizens of the communities where we conduct business from injury and property loss. The company considers the use of company owned, leased, rental or personal vehicles as part of the working environment. We are committed to promoting a heightened level of safety awareness and responsible driving behavior in its employees. Our efforts and the commitment of employees will prevent vehicle accidents and reduce personal injury and property loss claims. This requires the full cooperation of each driver to operate their vehicle safely. Each employee must understand the following:

Safe Driving
It is agreed this vehicle will be operated in a safe manner. I agree to wear my seat belt whenever the vehicle is in motion and will require other occupants to do so. I will not use a cell phone, engage in text messaging and use electronic devices or perform other distracting activities while driving. I agree to be responsible for all traffic and parking violations that occur while the vehicle is assigned to me. I will not operate or drive a vehicle under the influence of alcohol or any other substances that may impair my driving ability.

I understand the operation of this vehicle in a safe operating condition is my responsibility. If this vehicle becomes unsafe, it is my responsibility to notify my supervisor immediately.

Accident Reporting
I agree to promptly report all accidents or incidents resulting in injury or damage to the vehicle or other property, no matter how slight.

Driver's License
I understand I am required to maintain a valid driver's license. If my driving privileges are suspended or revoked for any reason, or if I am cited or arrested for reckless driving, driving under the influence of alcohol or controlled substance, I am required to contact Burkholder's before the end of the NEXT business day.

Further, I herewith grant Burkholder's the right to investigate may motor vehicle driving record any time. My current driver's license is issued from the State of _____ (*STATE NAME*) and my Driver License Number is: _____.

If my driving record contains two moving violations within one-year period, my record will be brought up before Management for consideration of remedial training and/or loss of driving privileges.

Vehicle Damages
In the event of an accident, which has been determined to have been my fault by citation, traffic court conviction, by my own admission, or determination by management, I recognize that my driving privileges of a company vehicle maybe permanently suspended or revoked. This decision rests solely by upper management on a case by case basis.

YOUR FAILURE TO ABIDE BY THESE REQUIREMENTS MAY SUBJECT YOU TO DISCIPLINARY ACTION, DISQUALIFICATION AS A DRIVER, AND POSSIBLE PROSECUTION BY THE DEPARTMENT OF TRANSPORTATION.

I read and agree to the provisions of this Vehicle Assignment Agreement.

_____ _____

SIGNATURE **DATE**

1. Policy Statement

a. It is the policy of Burkholder's, referred to as the "Company", to provide all employees with a safe and healthful work environment free from recognized hazards. It is also policy to maintain and actively support a comprehensive employee safety and health program.

2. Purpose

a. To establish a proactive approach to incident prevention that focuses on "Safe Behaviors" and "At Risk Behaviors"- recognize and strengthen the safety culture by identifying "Safe Behaviors" and eliminating "At Risk Behaviors".

b. The goal of the Behavior Based Safety approach is to reduce the occurrence of "At Risk Behaviors" by modifying the behavior through observation, feedback, and positive interventions aimed at developing "Safe Behaviors".

3. General Requirements

a. Application

- **i.** This Behavior Based Safety program applies to all Burkholder's employees.

b. Responsibilities

- **i.** Managers and Directors
  1. Managers must foster a culture that values prevention of events.
  2. Managers must strengthen the integrity of defenses to prevent or mitigate the consequences.
  3. Managers must preclude the development of error-likely situations.
  4. Managers must create a learning environment that promotes continuous improvement.
- **ii.** Project Supervision and Employees
  1. Recognize when and where at-risk behaviors occur.
  2. Recognize unsafe conditions.
  3. Recognize peer attitudes which may affect safety.
  4. Take action to change at risk day-to-day behaviors and to prevent or mitigate error likely situations.

5. Have conversations about safe and at-risk behaviors that inspire and compel other employees to change their behaviors.
6. Take action to ensure unsafe conditions are timely corrected.

c. Behavior Based Safety Process

i. Employee Observations

1. All employees are subject to observations at any time.
2. Observations will be conducted by Burkholder's employees and/or designees (third party professionals, client representatives, etc.) who meet the following requirements:
3. Are experienced / knowledgeable of the safe work practices associated with the work activity.
4. Have been trained in the Behavior Based Safety concepts as described in this program.
5. Observations will be conducted in a professional and courteous manner.
6. Observer(s) will approach the worker(s), introduce him/herself and explain that they will be observing the work activity.
7. The observer(s) will explain to the worker(s) the basic Behavior Based Safety process.
8. The observer will complete the Behavior Based Safety Checklist – Attachment 1&2.

ii. Intervention and Feedback

1. **Deliver interventions with consideration of internal feelings and attitudes.** Interventions can be pleasant or unpleasant, desirable or undesirable. The way intervention and feedback are delivered can increase or decrease feeling of empowerment, build or destroy trust, or cultivate or stifle a sense of teamwork or belonging.

2. When an observation is complete, the observer(s) will meet with the observed to discuss the findings.

a. First, the observer(s) will acknowledge the safe behavior witnessed and reinforce them with praise or reward.

b. Second the observer(s) will identify and describe any at-risk behavior(s) observed.

c. Third, the observer(s) will solicit an explanation as to what prompted the at-risk behavior(s). Note: The observer(s) must explain to the workers that names are not to be recorded, the intent is not to assign reprimands, and that the purpose of the discussion is to identify the root cause to the behaviors and together identify solutions to correct them.

d. Fourth, the observer(s) will explain the negative consequences associated with the at-risk behaviors. Additionally, the observer(s) will provide coaching on the targeted behavior.

e. Last, the observer(s) will repeat the positive consequences associated with the safe behaviors.

3. The observer(s) will complete the Behavior Based Safety Checklist and note comments and discussions.

4. Completed Behavior Based Safety Checklists will be forwarded to the project supervisors.

4. Training

a. All employees will be trained on the following elements:

i. How to conduct an observation.

ii. What are "Safe" and "At-Risk" behaviors and what do they mean.

iii. How to complete the Behavior Based Safety Checklist.

iv. How to give feedback after an observation and how to accept coaching from your peers.

v. The contents of this written program.

b. Data Collection and Trend Analysis

i. Data Collection

1. All observations will be documented on the Behavior Based Safety Checklist and observation; checklists and observations will be submitted to corporate safety manager who will tally all scores to identify strengths (top "safe" categories) and areas for improvement (top "at-risk" categories).
2. The scores will be added to divisional totals; total scores will be tallied where divisional strengths (top "safe" categories) and areas for improvement (top "at-risk" categories).

ii. Trend Analysis using Accident Tracker.

1. The data collected during the observations will be used to identify:
   - **a.** Target Behavior. Trend analysis will indicate which behavior to target for intervention.
   - **b.** Intervention Focus. Focus efforts on the targeted behavior and measure the impact.
2. Formal Continuous Improvement Action Plans.
3. Continuous Improvement Action Plans will include:
   - **a.** Evaluation of unsafe behaviors from trend analysis and identify focus priorities.
   - **b.** Designate responsible persons and timeframes for goal completion.
   - **c.** Management involvement in benchmarking and status updates.

5. Definitions

i. Behavior – The things that people actually do, not the things that they say they believe in.

ii. "Safe Behavior" – the correct and safe way to perform any task or job; the right way to do things.

iii. "At-Risk Behavior" – any action having an uncertain and potentially harmful outcome.

Attachment 1

Burkholder's

Hierarchy of Controls
1. Remove energy source
2. Prevent the release of energy
3. Protect from the release
4. Use Stop Work Authority

Behavior Based Safety Observation

Project Name:	
Job Number:	
Date and Time:	
# of employees observed:	
Weather Temp and Condition:	

Improvement Input

☐ BBS Observation	*OR*	☐ Near Miss

Description of Observation or Near Miss:

Employee's Action Taken or Recommendation:

Supervisor or Management Action Taken:

Promptly, give this observation form to your supervisor for review.
After review, please turn this obersevation form in when receiving your paycheck weekly.

SAFETY STARTS WITH YOU!!!

Attachment 2

Check the box 'S' for safe or 'R' for at risk. Behaviors that are marked 'R' require corrective actions. Corrective actions must be communicated to the employee by the Observer and documented under the feedback section.					
Body Parts Effected:					
PPE					
HARD HAT	S	R	GLOVES	S	R
EYE PROTECTION	S	R	HEARING PROTECTION	S	R
SAFETY FOOTWEAR	S	R	PROTECTIVE CLOTHING	S	R
VEHICLES					
EQUIPMENT CLEARANCE	S	R	SEAT BELT	S	R
CELL PHONE USE	S	R	SOUND HORN WHEN BACKING	S	R
SPOTTER USED	S	R	3 POINTS OF CONTACT	S	R
BODY POSITION/BODY MECHANICS					
EYES AHEAD OF WORK	S	R	ASCENDING	S	R
BENDING/LIFTING	S	R	DESCENDING	S	R
TWISTING	S	R	PINCH POINTS	S	R
HOUSEKEEPING					
WORK AREA CLEAN	S	R	BARRIER TAPE	S	R
ADEQUATE LIGHTING	S	R	CYLINDERS SECURED	S	R
MATERIALS LABELED	S	R	CORDS, LEADS, AND HOSES	S	R
DRIVING OPERATIONS					
SPEED	S	R	TURN SIGNALS	S	R
LANE SELECTION	S	R	FOLLOWING DISTANCE	S	R
MERGING POINTS	S	R	CHECK MIRRORS	S	R
FALL PROTECTION					
FALL PROTECTION USED	S	R	ANCHORAGE POINT	S	R
MISC					
	S	R		S	R
	S	R		S	R
	S	R		S	R
SAFETY STARTS WITH YOU!!!					

1. Policy Statement

a. It is the policy of Burkholder's to provide all employees with a safe and healthful work environment free from recognized hazards. Herein referred to as the "Company." It is also policy to maintain and actively support a comprehensive employee safety and health program.

b. Burkholder's will comply with OSHA standard 1926.35, Employee Emergency Plans and Fire Prevention Plans through implementation of this written program. Burkholder's field supervision will pre-plan evacuation routes and procedures to ensure the safety of employees in case of emergency. When visiting client facilities, employees shall comply with requirements governed by the respective owners.

2. Purpose

a. The purpose of this program is to provide guidelines and procedures for emergency response and fire prevention and to comply with OSHA 29 CFR 1926.35 Employee Emergency Plans and Fire Prevention Plans.

b. Guidelines and procedures are provided for the following:

- **i.** Facility Evacuation
- **ii.** Fire
- **iii.** Chemical Spills
- **iv.** Bomb Threats/ Workplace Violence
- **v.** Serious Accident/ Injury
- **vi.** Effectively plan emergency situations.

c. Provide a model for adequate and effective Emergency Action training.

d. To inform employees of the contents of the OSHA standard 29 CFR 1926.35 Employee Emergency Plans and Fire Prevention Plans.

e. This plan applies to all Burkholder's employees and visitors. When visiting client facilities, employees shall comply with requirements governed by the respective owners.

f. Sub-contractors of Burkholder's shall also comply with requirements of this written program OR have their own written program meeting at least the minimum requirements of the OSHA standard 29 CFR 1926.35 Employee Emergency Plans and

Fire Prevention Plans including monthly fire extinguisher and first aid kit inspection logs.

3. **References**
   - **a.** 29 CFR 1926.35 Emergency Action Plans
   - **b.** 29 CFR 1926.150 Fire Prevention Plans
   - **c.** 29 CFR 1926.32 Employee Emergency Action Plans
4. **General Requirements**
   - **a.** Management Responsibilities
     - **i.** Coordinate emergency response efforts for each work location, including evacuating personnel and minimizing property loss.
     - **ii.** Responsible for oversight of health and safety during incidents exceeding a minor incident.
     - **iii.** Coordinates the activities of employees with outside agencies such as Fire Dept., HazMat Team, Police Dept., Medical Services, and Utility companies.
     - **iv.** Ensure that in areas where 911 is not available, the telephone numbers of the physicians, hospitals, or ambulances shall be conspicuously posted.
     - **v.** Keep records of activities during all stages of the emergency.
     - **vi.** In the event of a fire, explosion, or material release, which would threaten human health outside the facility, or if a spill has reached surface water, immediately notify the National Response Center at the 24-hour number 1-800-424-8802 and provide the following information:
       1. Name – Company
       2. Date, Time, and type of incident. (i.e. spill, fire, etc.)
       3. Quantity and type of hazardous material or hazardous waste involved in the incident. (if applicable)
       4. Extent of injuries, if any.
       5. Estimated quantity of recovered materials, if any.
       6. If outside agencies are involved, assist them with hazard information.
   - **b.** Supervisor (Superintendent, Foreman)
     - **i.** Review hazard information with employees for hazardous materials involved.

ii. Ensure all personnel leave the area or building as per alarm or instructions and keep employees from entering areas during incidents.

iii. Prior to leaving the building, check rooms and other enclosed areas for employees.

iv. Upon reaching the designated employee assembly area (specific to the location), account for all personnel.

v. Assist any person who may be handicapped and may need assistance in leaving the building.

vi. Ensure all employees are trained on the emergency procedures specific to the work location.

vii. Ensure all employees are trained on fire extinguishers and other emergency equipment specific to the location.

viii. Report ALL accidents, including damages to company owned equipment, private property, motor vehicles and all injuries sustained on the job, regardless of nature or severity, to the office.

c. Employees

i. Comply with all applicable requirements of this written Emergency Action Program.

ii. Report all emergency incidents to their supervisor immediately.

d. Evacuation

i. An evacuation plan including a primary and secondary escape routes shall be established at all Burkholder's work locations. Additionally, a method for notifying employees of an evacuation shall be established (i.e. emergency notification system).

ii. Employees shall be alerted via the location's emergency notification system.

iii. Employees are instructed to remain in the designated assembly area until a head count is completed, and a supervisor communicates any necessary information concerning the incident.

iv. The preferred means of reporting fires and other emergencies is by contacting a supervisor, who will contact the necessary parties. When visiting a client location, Burkholder's employees shall comply with requirements governed by the respective owners.

v. Employees should assist in the safe and orderly evacuation of other employees, visitors, etc.

vi. Procedures shall be developed for each job in which it will be necessary for employees to remain to operate critical jobsite operations before they evacuate.

vii. Site emergency plans, emergency phone numbers, and maps shall be completed and given to site supervisors prior to work.

viii. Burkholder's office and garage emergency evacuation routes are posted in all buildings.

e. Fire

i. Office Locations: When an employee observes a fire, the employee shall activate the alarm at the nearest pull box or call the designated emergency phone number. When visiting a client location, Burkholder's employees shall comply with requirements governed by the respective owners.

ii. Field Locations: When an employee observes a fire, the employee shall notify other crew members and (if a large fire) call the area's designated emergency phone number.

iii. Employees shall be trained in the types of fires and respective fire extinguishers used to extinguish those fires. Fire extinguisher training will occur initially upon hire and annually thereafter.

iv. Fire extinguisher training shall include:

1. Types of fires that the employee may encounter.
2. Types of fire extinguishers.
3. How to identify types of fire extinguishers.
4. Inspection procedures. (monthly and annual)
5. Proper use of a portable fire extinguisher (P.A.S.S.)

v. Fire extinguishers shall be of approved design, inspected, and certified.

vi. If the employee is trained to use a fire extinguisher, he/she may attempt to extinguish the fire when in its incipient stage (beginning stage) to prevent the fire from spreading to other areas. Employees are trained that this is only done if it can be accomplished without risking his/ her safety. Fire extinguishers are for voluntary use only.

vii. If the fire is extinguished, the employee will notify their supervisor. The supervisor will inform the fire department to evaluate the specific location of the fire to ensure it is completely out.

viii. If the fire is not extinguished, the employee shall evacuate and notify their supervisor. The supervisor will inform the fire department of the specific location of the fire.

f. Chemical Spills

i. Incidental chemical spills and releases will be responded to as follows:

1. When an employee observes a spill or release, he/she shall stop work and notify his/her supervisor of the incident. Employees are encouraged to contain the spill, if it can be done without putting him/herself in danger.

2. If an employee observes a spill or release, which he/she cannot safely contain, the employee shall:

3. Evacuate the area and immediately notify his/her supervisor.

4. The supervisor shall keep other employees from entering the spill or release area.

ii. Large scale spills that reach the drain will be responded to as follows:

1. Evacuate the area.

2. The supervisor will be notified.

3. The supervisor then notifies the local HAZMAT team via the local emergency response system (9-1-1).

g. Bomb Threats

i. If an employee receives a written bomb threat, the employee shall notify their supervisor immediately and avoid unnecessary handling of the note, envelope, packaging, etc.

ii. If an employee receives a bomb threat via telephone, the employee shall do the following:

1. Do not hang up phone.

2. Get all information: location, size, appearance, time the bomb will explode, etc.

3. Alert another staff member to call the Phone Company to attempt a trace on the call. (Dial "9-1-1" for Emergency Dispatch)
4. Get the caller to talk as long as possible.
5. Notify their supervisor of the threat, who will call the Police Department & request assistance and make a decision concerning evacuation.

h. Workplace Violence

i. If workplace violence occurs, the following action shall be taken:

1. If a verbal, non-physical confrontation occurs, the Supervisor will be notified of the situation immediately and disciplinary action taken.
2. If an unarmed physical confrontation occurs, the Supervisor will be notified of the situation immediately and disciplinary action taken.
3. If an armed physical confrontation occurs, the site will be evacuated and the Supervisor will notify Authorities of the situation immediately.

i. Serious Accident

i. Employees responding to a serious accident shall:

1. Check the scene.
2. Call the proper authorities (9-1-1, Emergency Response).
3. Care for the victim (voluntary first responders). Employees may only perform first aid and rescue activities for which they have been trained.
4. De-energize any machines, equipment, or power sources that may pose a problem to those assisting the victim.
5. Control the area directly surrounding the place of the accident as to prevent interference for EMS personnel or other technicians, i.e. maintenance shutting down equipment.
6. Identify all employees involved.

ii. Items used to prevent the spread of Bloodborne Pathogens can be found in the First-Aid Kits.

iii. Company policy requires that ALL accidents, including damages to company owned equipment, private property, motor vehicles and all injuries

sustained on the job, regardless of nature or severity, must be reported by telephone to the office.

iv. Once EMS technicians have finished attending to the victim, any areas contaminated with blood or tissue must be cleaning with blood-borne pathogen solution (10% bleach and water) and all materials used for cleanup must be disposed of in "Biohazard" bags. Clean up may only be performed by trained personnel as per the Company Bloodborne Pathogens Program.

v. Falsifying an incident report is grounds for immediate termination and could result in criminal prosecution.

j. First Aid

i. Burkholder's will insure the availability of medical personnel for advice and consultation on matters of occupational health.

ii. Provisions shall be made prior to commencement of each project for prompt medical attention in case of serious injury.

iii. In the absence of an infirmary, clinic, hospital, or physician, that is reasonably accessible in terms of time and distance to the worksite (within 3-4 minutes), which is available for the treatment of injured employees, a person who has a valid certificate in first-aid training from the American Red Cross, or equivalent training shall be available at the worksite to render first aid.

iv. First aid supplies shall be readily accessible on each job site. Supplies must consist of appropriate items for field conditions and work environment.

v. The contents of the first aid kit will be in weather-proof containers and inspected at least weekly on each job to ensure that the expended items are replaced.

vi. Monthly documented inspections are required for each first aid kit.

vii. Proper equipment for prompt transportation of the injured person to a physician or hospital, or a communication system for contacting necessary ambulance service, shall be readily accessible.

viii. Where the eyes or body of any person may be exposed to injurious corrosive materials, suitable facilities for quick drenching or flushing of the

eyes and body shall be provided within the work area for immediate emergency use.

5. Training

a. Office Locations: Employees shall be trained to assist in the safe and orderly emergency evacuation of employees, accident reporting procedures, and use of fire extinguishers. Several office employees maintain First Aid, CPR, and AED training.

b. Field Locations: Employees shall be trained on the elements of this Emergency Response Program, accident reporting procedures, and use of fire extinguishers.

c. This emergency response plan will be reviewed with employees at initial hire and when the employee's responsibilities / designated actions under the plan change. A copy of this program is available for employee review upon request.

d. Additional information regarding emergency action plans and employee roles can be obtained by contacting the Field Supervisor or Safety Department.

1. **Policy Statement**
   - **a.** It is the policy of Burkholder's, referred to as the "Company", to provide all employees with a safe and healthful work environment free from recognized hazards. It is also policy to maintain and actively support a comprehensive employee safety and health program.
   - **b.** Burkholder's will comply with the OSHA Powered Industrial Truck standard, 29 CFR 1926.602, through implementation of this written program, which establishes safe operating procedures and work practices for employees who operate Powered Industrial Trucks.
2. **Purpose**
   - **a.** The purpose of this program is to prevent employee injury involving powered industrial trucks through implementation of general safety requirements, practices, and precautions regarding the safe operation of powered industrial trucks.
   - **b.** This document applies to all employees of the Company who operate powered industrial trucks as well as all subcontractors engaged in Powered industrial truck operations.
   - **c.** To ensure all operators are effectively trained and certified in the safe operation of Powered Industrial Trucks.
3. **References**
   - **a.** 29 CFR 1926.602 Powered Industrial Trucks
   - **b.** ANSI B56.6 2011 Safety Standard for Rough Terrain Fork Trucks
4. **General Requirements**
   - **a.** Responsibilities
     - **i.** Management
       1. Ensure compliance with this written program and 29 CFR 1926.602.
       2. Ensure periodic reviews of this written program are conducted.
       3. Ensure periodic audits of employees utilizing the procedures within this written program are conducted. If deviations or inadequacies are identified, management will take necessary action to correct.
       4. Ensure an adequate level of training is provided for all employees covered by this written program.

ii. Supervisors

1. Ensure the procedures found with in this program are being followed through periodic audits and corrective action.

2. Ensure that all employees covered by this program have access to and review this written program.

iii. Employees

1. Employees shall comply with the procedures stated in this Powered Industrial Truck Program.

2. Certified operators are responsible for the safe operation of the vehicle in which they are operating.

3. Employees NOT certified to operate a Powered Industrial Truck as per the training requirements established in this program are not permitted to operate Powered Industrial Trucks.

b. General Requirements

i. Only trained and authorized employees and subcontractors shall be permitted to operate a forklift truck.

ii. Modifications and additions (counterweights), which affect capacity and safe operation, shall not be performed without manufacturer's prior written approval. Capacity, operation, and maintenance instruction plates, tags, or decals shall be changed accordingly.

iii. If a location with the potential to contain hazardous concentrations of flammable or combustible vapors is present at any field or equipment site, a hazard evaluation shall be conducted and the correct class, designation, and type of powered industrial truck shall be utilized.

iv. Battery charging operations shall be located in areas designated for that purpose. These areas shall be isolated, and ventilated.

v. Trucks shall be properly positioned and the brake shall be applied before attempting to charge the Powered Industrial Truck.

vi. Smoking is Prohibited in the charging area

vii. Precautions shall be taken to prevent open flames, sparks, electric arcs, and other sources of ignition in the battery charging areas.

viii. The metal covers over the battery shall be opened during recharging.

ix. Safety Glasses, Face Shield, and Gloves shall be worn when refilling a battery.

x. Industrial vehicles should be equipped with an audible back up alarm and a top safety light pursuant to the manufactures specifications.

xi. Vehicle guarding shall not be removed.

xii. An overhead guard shall be used as protection against falling objects.

xiii. A load backrest extension shall be used to prevent load falling rearward.

xiv. Employees shall receive classroom instruction, have access to a copy of this procedure, pass a written examination, and demonstrate adequate skill competency under a supervised skills evaluation to operate a powered industrial truck.

xv. A written evaluation of the operator's knowledge regarding safe operation of powered industrial trucks shall be completed and kept on file (written examination).

xvi. An evaluation of powered industrial operation shall be conducted by an authorized supervisor to ensure skill competency. Skills assessment evaluation shall be completed and maintained on file.

xvii. A visual pre-operation inspection shall be conducted before each shift the powered industrial truck will be used.

xviii. Approved employees shall receive a Powered Industrial Truck Operators License.

c. Loading Truck Trailers

i. The brakes of highway trucks shall be set and chocks placed under the rear wheels to prevent trucks from rolling when boarded with Powered Industrial Trucks.

ii. The flooring of trailers and trucks shall be checked for breaks and weakness before being boarded by a Powered Industrial Truck.

iii. Dock Boards and Bridge Plates, shall be properly secured before use.

d. Vehicle Operation

i. Trucks shall not be driven up to a person standing in front of a fixed object, where the person is blocked from escape.

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

iii. Additional personnel shall not be permitted to ride on powered industrial trucks unless that vehicle has designed passenger seating.

iv. Employees shall not be lifted on pallets as an alternative to a ladder or lift basket/ platform.

v. The following requirements must be complied with when forklifts, which are not equipped with controls that elevate with the lifting carriage, are used to lift personnel. The personnel platform shall:

1. Be sufficiently strong to support any load(s), which may be imposed on it.
2. Be securely attached to the lifting carriage or forks, which shall be secured so they do not pivot upward.
3. Be designed so that the employees will not be exposed to an ingoing nip point, which can be created between the rear of the platform and the structure of the powered industrial truck, as a platform is raised and lowered.
4. Be designed so that personnel on the platform are protected from moving parts of the truck.
5. Be horizontal and centered and not tilted forward or rearward when elevated.
6. Be moved in a smooth steady fashion when personnel are on it.
7. Be moved only when the personnel on it specifically request that it be moved.
8. Be moved after it has been elevated, when there are personnel on it, only when there is a need for minor horizontal adjustments.
9. Be provided with a fall protection system if it is elevated more than four feet above the walking/working surface or is above or adjacent to dangerous equipment. If a guardrail system is used, it shall:
    - **a.** Consist of a top rail, approximately 42" in height, a mid rail approximately 21" in height, and a toe board, if operating conditions necessitate such equipment.

b. Be provided with a top rail, which will not deflect to less than 39" above the platform, when a 200 lb. force is imposed on it.

c. Be provided with a top rail which will not fail when a 200 lb. force is imposed on it.

d. Be provided with fall protection, at the opening used for access and egress from it, which provides protection equivalent to that of a standard guardrail system, and

e. Have a slip resistant surface.

10. The Powered Industrial Truck shall:

a. Be operated on a level surface and have firm and level footing.

b. Be operated so that overhead obstructions are avoided

c. Be operated so that personnel do not come closer to overhead electrical equipment than permitted.

d. Be equipped with overhead protection if operating conditions necessitate such protection.

e. Have all operating controls set at neutral and the parking brake set when personnel are on an elevated platform.

f. Have a qualified operator at the controls whenever personnel are on an elevated platform.

g. Not be moved after the platform has been raised into position, while personnel are on the platform, except when minor horizontal adjustments of the platform must be made.

h. Be loaded to no more than one-half the capacity of the truck, as indicated on the nameplate of the truck on which the platform is used.

11. Effective means of communications between the truck operator and the personnel on the platform shall be provided.

12. Never use a pallet for lifting any person.

13. Make sure the lifting mechanism is operating smoothly. Raise and lower the platform alone to test its operation before allowing anyone on it.

14. Employee shall not ride on pallets as a means to stabilize a load during transport. Tie downs of adequate capacity, or the equivalent, shall be used if a load may shift during transport.

vi. A powered Industrial Truck is considered unattended when the operator is 25 feet or more away from the vehicle, or whenever the vehicle is not in his/her view. When a powered industrial truck is left unattended:

1. Load engaging means shall be fully lowered, forks tilted forward so tips touch the ground, controls neutralized, power off, and brakes set.

2. Wheels shall be blocked if the truck is parked on an incline.

3. Fire aisles, access to stairways, emergency eyewash stations and fire equipment shall be kept clear.

vii. When following another vehicle, operators shall maintain a minimum of 3-truck lengths distance from the lead vehicle. Vehicles shall not pass at cross aisles and intersections.

viii. The maximum speed limit for powered industrial vehicles may be governed by the field site or can generally be described as a "quick walking pace" (approx. 5 mph), but operators shall use discretion when sharing space with people (< 5 mph).

ix. Operator shall conduct a pre-operation inspection of the powered industrial truck at the beginning of each shift that it will be operated. A documented inspection form should be completed and maintained.

x. Should a maintenance issue develop with a powered industrial truck that may affect safe operation, it shall be:

1. Placed out of service (apply "out of service" or similar tag or otherwise make inoperative and notify all affected persons)

2. Repaired according to manufacturer's specifications.

e. Vehicle Operator

i. The operator shall 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 may travel with the load trailing or be guided by a signal person.

ii. The driver shall look in the direction, and keep clear view, of the path of travel.

iii. An operator shall not leave their vehicle while the load is raised.

iv. When descending grades in excess of 10 percent, loaded trucks shall be driven with the load trailing. When ascending grades in excess of 10 percent, loads shall be leading.

v. Operator's arms or legs are prohibited from being placed between the uprights of the mast or outside the running lines of the truck.

vi. Stunt driving and horseplay is not permitted.

vii. Forks should be approximately three to five inches from ground when traveling indoors. When outdoors, forks should be as low as terrain allows.

5. Training

a. All training and evaluations must be completed before an operator is permitted to use a powered industrial truck without continual and close supervision. The operator skills assessment evaluation will be documented. All training certifications and completed evaluation forms should be kept on file.

b. Training shall be conducted by a person that has the knowledge and ability to instruct and evaluate operators.

c. A certificate, which is valid for 3 years, will be issued to each employee who receives powered industrial truck safety training which includes:

i. Operating instructions:

1. Differences between autos and PIT

2. Engine type and operation

3. PIT controls and instrumentation

4. Maneuvering and steering

5. Visibility

6. Forks and adaptations

7. Load capacities

8. Vehicle stability
9. Inspection Procedures
10. Refueling and/or charging batteries
11. Operating limitations and other precautions

ii. Workplace-related topics:

1. Surface Conditions
2. Load types
3. Stacking Loads
4. Pedestrian Traffic
5. Narrow aisles and restrictive areas
6. Ramps/sloped surfaces
7. Carbon Monoxide and/or exhaust fumes
8. Other potentially hazardous areas or environments in the workplace
9. Review of this written program
10. Osha regulation 1926.602
11. Pedestrian rules
12. Safety Fundamentals Quiz
13. Skills Assessment Evaluation

d. Refresher Training and Evaluations

i. Formal training for both newly assigned operators and experienced operators will consist of the forklift truck-related topics and workplace-related topics.

ii. Refresher training, including evaluation of the effectiveness of that training, shall be conducted as required by the following items to ensure that the operator has the knowledge and skills needed to operate safely.

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

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

v. The operator has received an evaluation that reveals that the operator is not operating the truck safely.

vi. The operator is assigned to drive a different type of truck.

vii. A Condition in the workplace changes in a manner that could affect safe operation of the truck.

viii. Operator's performance shall be evaluated at least once every three years.

ix. If an operator has previously received training and evaluation, as mentioned above, and such training is appropriate to the truck and working conditions encountered, additional training in that topic is not required.

e. Certification. The employer shall certify that each operator has been trained and evaluated. The certification shall include the name of the operator, the date of the training, the date of the evaluation, and the identity of the person(s) performing the training or evaluation.

6. Definitions

a. *Center of Gravity* – is the point on an object at which all of the objects weight is concentrated. For symmetrical loads, the center of gravity is at the middle of a load.

b. *Counterweight* – is the weight *that* is built into the truck's basic structure and is used to offset the load's weight and to maximize the vehicles resistance to tipping over.

c. *Fulcrum* – is the truck's *axis* of rotation when it tips over

d. *Grade* – is the *slope* of a surface, which is usually measured as the number of feet of rise or fall over a hundred foot horizontal distance (the slope is expressed as a percent.)

e. *Lateral Stability*- is a *truck's* resistance to over tuning sideways

f. *Powered Industrial Truck* – The *name* implying fork truck or any other implement used with a fork attachment as per this written program.

g. *Track*- is the distance between *wheels* on the same axle of the machine.

h. *Wheel Base*- is the distance *between* the centerline of the vehicle's front and rear wheels.

1. Policy Statement

a. It is the policy of Burkholder's to provide all employees with a safe and healthful work environment free from recognized hazards. It is also policy to maintain and actively support a comprehensive employee safety and health program.

b. Burkholder's will comply with host employer or other controlling authority waste management plans when applicable. This includes any contract work where hazardous waste management must be included as part of a general contract to conduct site work.

2. Purpose

a. To minimize the quantity of waste material generated during any project through proactive waste management - organization, storage, and removal.

b. Environmental Responsibility. The Company will implement this program to minimize the quantity of debris that leaves the jobsite for landfill disposal in effort to minimize any negative environmental impact.

3. References

a. EPA Publication – Construction Waste Management – Section 01 74 19

4. General Requirements

a. Pre-Project Planning

i. Company management (corporate and project), host employer representatives, and sub-contractor representatives, will identify potential waste streams and develop a strategy for collecting, organizing, storing, and removing the waste from the project.

ii. Project management will explore all options for construction waste material removal to minimize environmental impact – for example: recycling, reuse, deconstruction, salvage, comingled material disposal options.

iii. Project management will conduct a cost-benefit analysis to identify the most effective method for removing the construction waste materials. Often the cost to dispose of construction waste materials in a solid landfill can exceed the cost associated with recycling, reusing, deconstruction, or salvage.

b. Potential Waste Streams. The following items are typical construction waste materials that should be diverted according to the requirements of this written program.

1. Landscape and land clearing debris (green wood materials)
2. Asphalt pavement
3. Gravel and aggregate products
4. Concrete
5. Masonry scrap and rubble (brick, concrete masonry, stone)
6. Metals (ferrous and nonferrous)
7. Clean wood (dimensional lumber, sheet goods, millwork, scrap, pallets)
8. Plastics (films, containers, PVC products, polyethylene products)
9. Asphalt / bituminous roofing
10. Insulation materials
11. Glass (un-tempered)
12. Door and window assemblies
13. Carpet and carpet pad
14. Fibrous acoustic materials
15. Ceiling tiles
16. Plumbing fixtures and equipment
17. Mechanical equipment
18. Lighting fixtures and electrical components
19. Cardboard packing and packaging
20. Waste Water
21. Equipment operational fluids
22. Oils, Lubricants, and other common petroleum products.

c. Recycling

- **i.** Project managers will investigate recycling options and based on the cost/benefit analysis, recycle damaged components, products, and materials, or disassemble them into their constituent materials for recycling.
- **ii.** When applicable, project management will establish a return or buy-back arrangement with suppliers. Alternatively, unused, or used but serviceable

materials and products will be sold to architectural salvage or used materials retail outlets.

iii. When applicable, donations will be made to a non-profit outlet.

iv. Project management may contract with a recycling firm who accepts commingled debris.

v. Project management may contract with individual recycling firms who deal in specific materials, in addition to a general waste hauler.

d. Collection Containers.

i. Source Separation (or Segregation). Superintendents and subcontractors will keep materials separated by type from the time they become scrap or waste until the time they are salvaged, recycled, or disposed.

ii. An adequate number and size of containers for collecting the various types of construction waste material shall be provided.

iii. Containers shall be properly labeled to identify acceptable materials.

iv. When outside, containers shall be covered to control run-off.

e. Storage and Handling.

i. Waste materials will be properly stored and handled to minimize the potential for a spill or impact to the environment.

ii. Depending on the nature of the site where work is being conducted, certain EPA and DEP regulations might limit the ability for Burkholder's employees to transport waste material from the site to a company designated area. For areas subject to these requirements, supervisors should use the following guidelines to ensure proper disposal:

iii. Contact effected site management.

iv. Confirm the requirements of waste disposal regulations as they pertain to that operation.

v. Speak with site management and discuss the quantity of material in question to be disposed of.

vi. Ensure the quantity is disposed of properly on the site via the pre-established protocols for that particular site.

vii. Have a member of site management confirm that the disposal was completed in conformance with the sites requirements.

viii. Adequate protective measures – container features, work practices, etc. – shall be implemented to prevent spills associated with construction waste material.

5. Training

a. Employees shall receive training on waste management plans applicable to the job site location.

b. Employees shall be instructed on the proper disposal method for wastes, including disposal of non-hazardous waste, trash, and/or scrap materials.

c. If wastes generated are classified as hazardous, employees must be trained on safety-related work practices, personal protective equipment, and procedures for proper disposal.

d. Training on this written program will be conducted upon initial hire and at least annually thereafter.

6. Definitions

a. Construction Waste: Waste materials generated by construction activities, such as scrap, damaged or spoiled materials, temporary and expendable construction materials, and aids that are not included in the finished project, packaging materials, and waste generated by the workforce.

b. Demolition Debris: Waste resulting from removing a building from the site by wrecking.

c. Land Clearing Debris: Vegetative waste materials removed from a site.

d. Disposal (or Landfilling, or Landfill Disposal): Depositing materials in a solid waste disposal facility licensed for the subject materials (in this case, C&D materials).

e. Recycling: Introducing a material into some process for remanufacture into a new product, which may be the same or similar product or a completely different type of product.

f. Salvage: Recovery of components, products, or materials for the purpose of reusing them for the same or similar purposes as their original use.

g. Reuse: The subsequent use of a material, product, or component upon salvage.

h. Deconstruction: The systematic disassembly of a building, generally in the reverse order of construction, in an economical and safe fashion, for the purposes of preserving materials for their reuse.

i. Source Separation (or Segregation): Keeping materials separated by type from the time they become scrap or waste until the time they are salvaged or recycled.

j. Off-Site Separation: Sorting and separating commingled waste at a location other than the construction jobsite, that location having been established for the purpose of recycling.

k. Commingled: Materials of varied types deposited into the same receptacle or pile, or mixed together during demolition.

1. Policy Statement

a. It is the policy of Burkholder's to provide all employees with a safe and healthful work environment free from recognized hazards. It is also policy to maintain and actively support a comprehensive employee safety and health program.

2. Purpose and Scope

a. The purpose of the Spill Prevention and Response program is to minimize the likelihood of hazardous materials from endangering company employees, client facilities, and the surrounding environment.

b. This plan outlines ways to reduce hazardous materials from being used and stored at company facilities as well as offsite construction locations, while addressing procedures to be able to adequately control materials if they are spilled from their original containers or process/equipment loops.

c. This Spill Prevention and Response Plan apply to all employees of Burkholder's and all Burkholder's subcontracted employees.

3. References

a. 29 CFR 1910.1200 – Hazard Communications

b. 29 CFR 1910.120 – Hazardous Waste and Emergency Response

c. Pennsylvania DEP Oil and Gas Act

d. Pennsylvania DEP Clean Streams Act

e. Pennsylvania DEP Solid Waste Act

f. Pennsylvania DEP Storage Tank Act

4. General Requirements

a. Responsibilities

i. Senior Management

1. Ensure the requirements of this written program are implemented for every project/job.

2. Ensure adequate resources are available to distribute and re-stock spill prevention and response kits to all required sites.

ii. Foreman

1. Shall follow all provisions contained in this program.

2. Ensure provisions of the program are enforced on every project/job.

3. Periodically review and audit all spill prevention and response kits with in their control.
4. Ensure kits are fully stocked and materials are replenished/re-ordered as needed to ensure spill prevention and response kits are complete.
5. Survey site and complete site-specific response information as needed before authorizing operations which have an increased likely hood of spill incidents.

iii. Employees

1. Shall follow all provisions contained in this program.
2. Are responsible for performing work as directed.
3. Shall have the responsibility and authority to stop work if the employee believes work or conditions are unsafe/ have an increased likely hood of a spill.
4. Report all incidents immediately to foreman/supervision, management, or safety director.

b. Spill Prevention

i. All hazardous substances, including chemical wastes, are to be managed in a way that prevents release. The following general requirements are to be followed:

1. Container Management
   - **a.** All hazardous substance containers must be in good condition and compatible with the material to be stored within.
   - **b.** All hazardous substance containers must be accessible and spacing between containers must provide sufficient access to perform periodic inspections and respond to releases.
   - **c.** Empty hazardous substance containers (drums) must have all markers and labels removed and the container marked with the word "empty".
   - **d.** Any spills on the exterior of the container must be cleaned immediately.

e. Flammable materials stored or dispensed from drums or totes must be grounded to prevent static spark.

f. Drums containing waste must not be overfilled and maintain at least 4 inches of head space to allow for expansion of the contained material.

2. Housekeeping

a. All hazardous substance must be stored inside buildings or under cover.

b. Store hazardous substances not used daily in properly rated cabinets, or in site approved designated areas.

c. All chemicals that are transferred from a larger to smaller containers must be transferred by the use of a funnel/spigot or other designed method.

d. All hazardous substance containers should be closed while not in use.

e. The use of drip pans or other collection devises should be used to contain drips or leaks from dispensing containers, equipment, or machinery.

f. Implement appropriate preventive maintenance activities to reduce the potential for release from equipment off site.

g. Immediately clean up and properly manage all small spills or leaks.

h. Periodically inspect equipment and hazardous storage areas to ensure leaks or spills are not occurring.

i. Use signage to identify hazardous substance storage or waste collection areas

j. Keep all work areas and hazardous substance storage areas clean and in good general condition.

3. Secondary Containment

a. Store all bulk chemicals, fuels, and lubricants with in appropriate secondary containment, or any sized chemical if there is a potential for release to the environment.

b. Secondary containment should be checked periodically, and any spills identified in secondary containment must be immediately cleaned up and removed.

4. Marking/Labeling

a. Ensure all hazardous substances, including chemical wastes, are properly marked and labeled in accordance with all applicable federal, state, local regulations, and company hazard communications program section 18.0.

b. Ensure that hazardous substances transferred to small containers are marked with the chemical name and appropriate hazard warnings.

5. Hazardous Material Inventory

a. An inventory must be maintained for all hazardous substance stored in quantity in excess of 55 gallons, and/or a list of locations where non-bulk hazardous substances are stored, such as in a flammable liquid storage cabinet.

c. Spill Response

i. Spill response equipment must be maintained and located in areas where spills are likely to occur.

ii. Spill kits should provide adequate response capabilities to manage any anticipated spill or release. The following general requirements are to be followed:

1. Stock spill cleanup kits that are compatible with the hazardous substances stored or used on site.

2. Locate spill kits in areas where spills are likely to occur, such as loading docks, chemical storage/transfer areas, maintenance areas, and always prestaged during off-site equipment maintenance operations.

3. Spill kits should be sized to manage anticipated release, or equal in absorbent capacity to the largest container.

4. Emergency response equipment should be inspected periodically to ensure that the spill kit is complete.

iii. Spill Response Procedure (Low Hazard Spill Low Hazard and those less than 25 gallons/100 liters).

1. Check for hazards such as flammable materials, noxious fumes, cause of spill
2. If liquid is flammable, turn off engines and nearby electrical equipment. Any spark producing item can create a significant hazard, this includes cell phone usage.
3. If serious hazards are present, leave the area and follow the Emergency Spill procedure contained in the site specific emergency action plan and call 911.
4. When in doubt regarding the potential hazard of the spill, consult the SDS/ Safety Data Sheets for the product hazards.
5. Stop the source of the spill using the following techniques:
    - **a.** Plug hole.
    - **b.** Upright the container.
    - **c.** Shut off the appropriate valve.
    - **d.** De-pressurize the hydraulic system/equipment.
    - **e.** Call co-workers and supervisor/foreman for assistance and to make them aware of the spill and the potential dangers.
    - **f.** Stop the spill from entering any potential drain, by use of an absorbent or other material needed to close the drain, cover or plug drain.
    - **g.** Stop the spill from spreading by using absorbent or other material.
    - **h.** If spill has entered storm sewer, catch basin, or water stream contact the DEP to report the incident. Contact information is provided in Appendix 1.
    - **i.** Clean up spilled material/adsorbent with broom and shovel, do not flush the area with water.
    - **j.** If an outside clean-up service is required, phone your emergency spill contractor.

iv. Emergency Spill Procedure (High Hazard Spills and those larger than 25 gallons/100Liters)

1. In the event of a hazardous substance release that has the potential for fire, explosion or other human health hazard, the following procedure shall be implemented:

a. Summon help or alert others of the release including host employer representatives

b. Evacuate the area immediately, and provide care to any injured employee. Injured employees requiring first aid should be transported to a designated safe zone by volunteer first responders (Company First Aid Trained Employee).

c. If the potential for fire or explosion hazards exist initiate the facility or site specific emergency action plan. Call 911 immediately.

d. Respond defensively to any uncontrolled spill until relieved by emergency services.

e. Use appropriate PPE when responding to any spill

f. The employee should be fully trained in the response

g. The use, care, selection, and limitations of the PPE used to address the spill.

h. Should have the appropriate HAZWOPER Card if required by the contents of the spilled substance.

i. Attempt to shut off the source of the release; if safe to do so.

j. Eliminate sources of ignition; if safe to do so.

k. Protect drains by use of adsorbent, booms, or drain covers; if safe to do so.

l. Notify onsite emergency contacts.

i. Contacts are listed in the site-specific emergency action plans.

ii. Contract Owners/Host Employees require immediate notifications in areas such as oil/gas controlled facilities/sites.

iii. Notify other trained staff/or an emergency response contractor to assist with the spill response and clean up activities.

iv. Coordinate response activities with local emergency personnel; Fire Department.

v. Be prepared to provide SDS information to the fire department, EMT, hospital, or physician/OC Service

vi. Notify the DEP if a release has entered the environment using the phone numbers provided in APPENDIX 1.

d. Evacuation Procedures

i. In the event of a hazardous substance release that has the potential for fire, explosion, or other human health hazard, the follow procedure shall be implemented:

1. Management staff will be notified of evacuation by one or more of the following communications:

a. Verbal

b. Intercom

c. Portable Radio

d. Alarm

e. Other

2. Notification to emergency services will be performed by calling 911.

3. Employees will follow pre-determined evacuation routes and assemble at designated muster areas as determined by the site-specific emergency action plan.

4. Individuals responsible for coordinating the evacuation must confirm if the site has been completely evacuated, and account for all Burkholder's personnel and sub-contractors under our control.

5. Burkholder's employees will be made aware of the evacuation procedures and the pre-determined routes during site-specific orientation, JSA's and annually through trainings thereafter.

e. Spill Reporting

i. If a hazardous substance spill has been released to soil, surface water, drains, or air, the following notifications are to be performed within 24 hours.

1. Fire Department (any release that poses and immediate threat to human health.
2. County Health Department (if required in the county having jurisdiction).
3. Pennsylvania DEP (APPENDIX 1).
4. National Response Center (release of oil or fuel to surface water, or release of a chemical with an established RQ (reportable quantity).
5. Except of Required Reporting
6. Section 91.33 of the DEP Oil/Gas Act, If because of an accident or other activity or incident, a toxic substance which would endanger downstream users of the waters of this commonwealth, would otherwise result in pollution or create a danger of pollution of the waters, or would damage property, is discharged in to these waters, including sewers, drains, ditches or other channels of conveyance into the waters, or is placed so that it might discharge, flow be washed or fall in to them, it is the responsibility of the person at the time in charge of the substance or owning or in possession of the premises, facility, vehicle, or vessel from or on which the substance is discharged or placed to immediately notify the DEP by telephone of the location, nature of the danger, and if possible notify downstream users.
7. When reporting a release, prepare to provide the following information using the prepared sill form. Attachment 1.
    - **a.** Your name and telephone number.
    - **b.** Exact address of the release or threatened release.

c. Date, time, cause, and type of incident.

d. Material and quantity of the release, to the extent known.

e. Current condition of the site.

f. Extent of injuries, if any, and;

g. Possible hazards to public health/ or environment outside of the site.

5. Training

a. Initial Training

i. Initial employee training shall be provided prior to starting any work activity.

ii. The training shall include, at a minimum, the following elements:

1. Proper chemical storage, including housekeeping requirements and spill prevention requirements

2. Proper chemical handling.

3. Proper set up for at-risk activities.

4. Proper response procedures for spilled materials.

5. Spill response kits – materials available for use, location and limitations.

6. Completion of the spill response and reporting form (ATTACHMENT 1)

7. Proper Waste Disposal.

8. Including any client specific requirements.

9. Communication/Notification for spill response.

10. Site-specific training covering host employer requirements.

b. Refresher Training

i. Annual refresher training shall be conducted for qualified employees in accordance with requirements as set forth in 29 CFR 1910.120 for HAZWOPER certification maintenance.

ii. Additional refresher training shall be conducted.

1. If investigation reveals that current training levels is inadequate

2. Employees are observed to be unfamiliar with the appropriate prevention and response techniques.

3. When changes occur to the contents or availability of the spill response kits.
4. When new chemical hazards are introduced into the work place, which require specific handing or disposal techniques not covered under the initial training.

Appendix 1 DEP Emergency Response numbers

Attachment 1 Spill Response and Reporting Form

Appendix 1
DEP Emergency Response Contact Numbers

Region	Emergency Phone Number	Region Headquarters	Counties Supervised
Southeast	**484-250-5900**	**2 East Main Street Norristown, Pa 19401**	**Bucks, Chester, Montgomery, Philadelphia**
Northeast	**570-826-2511**	**2 Public Square Wilkes-Barre Pa 18711**	**Carbon, Lackawanna, Lehigh, Luzerne, Monroe, Northampton, Pike, Schuylkill, Susquehanna, Wayne, Wyoming.**
South central	**877-333-1904**	**909 Elmerton Avenue Harrisburg, Pa 17110**	**Adams, Bedford, Berks, Blair, Cumberland, Dauphin, Franklin, Fulton, Huntingdon, Juniata, Lancaster, Lebanon, Mifflin, Perry, York**
North central	**570-327-3636**	**208 West Third Street Williamsport, Pa 17701**	**Bradford, Cameron, Centre, Clinton, Columbia, Lycoming, Montour, Northumberland, Potter, Snyder, Sullivan, Tioga, Union**
Southwest	**412-442-4000**	**400 Waterfront Drive Pittsburgh, Pa 15222**	**Allegheny, Armstrong, Beaver, Cambria, Fayette, Greene, Indiana, Somerset, Washington, Westmoreland**
Northwest	**814-332-6945**	**230 Chestnut Street Meadville, Pa 16335**	**Butler, Clarion, Crawford, Elk, Erie, Forest, Jefferson, Lawrence, McKean, Venango, Warren**

Attachment 1

BURKHOLDER'S Heating and Air Conditioning, Inc.

TIME of INVESTIGATION:	CUSTOMER:
DATE:	JOB #:
SITE NAME:	SITE ADDRESS:

TIME OF INCIDENT:	EQUIPMENT INVOLVED:
OPERATOR OF EQUIPMENT:	FLUID SPILLED:
QUANTITY SPILLED:	PERSON(s) NOTIFIED:

INCIDENT DESCRIPTION:

IMMEDIATE ACTION TAKEN AND PERSONS INVOLVED:

POSSIBLE CAUSES:

ADDITIONAL ACTION: (future preventative measures and employee lessons learned)

Reporting Person Name (print)	*Sign*	*Date*
EHS Department (print)	*Sign*	*Date*
Customer Representative (print)	*Sign*	*Date*

1. Purpose

a. Effective guarding of both power transmission and point-of-operation (area where the actual work of machine takes place) is essential. The most effective guards are those built through good design and ordered as an integral part of the equipment. If they are either not present or insufficient, then locally constructed guards shall be provided. Machine guarding protects against injury from several sources, including:

- **i.** Direct contact with moving parts of machinery
- **ii.** Work in process, such as sawing, grinding, or drilling
- **iii.** Mechanical failure
- **iv.** Electrical failure
- **v.** Human error

2. Machine Guarding

a. Machinery movements consist of rotary or reciprocating motion, or a combination of the two. Both types produce crushing and shearing actions which should be considered when searching for the danger points of any machine.

b. Machine guards constructed locally should be fabricated from substantial perforated, screened, expanded, latticed, or sheet metal. Under normal circumstances, wooden or plastic guards should not be used because of their lack of durability.

c. All power transmission apparatus, such as gears, belts and pulleys, chain drives, shafts, etc., 7' or less from the floor, shall be equipped with complete enclosure guarding. Also, moving parts, such as spokes and dangerous projections on moving parts, shall be completely enclosed or otherwise isolated.

d. Guards shall be free of sharp edges, burrs, or projections, which, in themselves, create accident hazards.

e. Where required, guards shall be designed to permit changing of drive belts or chains, making adjustments, or lubrication. To lessen maintenance time, machine guards should be designed with hinges or removable sections.

1. Purpose

a. To establish procedures to ensure that all job sites receive safety inspections on a routine basis.

2. Frequency of Inspections

a. Safety inspections should be held on a monthly basis.

3. Inspection Team

a. The inspection team should include the project or safety manager, the supervisor and at least one employee representative. The employee representatives should be rotated so as many employees as possible are active in the Safety Program.

4. Reporting

a. All inspections should be documented on the safety inspection form included at the end of this section. The human element which results in unsafe acts should be considered, as well as unsafe physical conditions. All deficiencies should be covered by formally submitted recommendations. Each recommendation should be numbered and dated. The date will provide a means of determining how long recommendations are outstanding. The inspection team should determine which recommendations continue to remain outstanding.

b. Upon completion of inspection and submission of recommendations, corrective action should be taken as soon as possible.

c. Inspection reports shall be maintained in Job File.

d. All office personnel need to perform a site wide inspection report during every visit.

e. This should include not only violations but safety successes.

INSPECTION REPORT

CONTACT INFORMATION

JOB SITE LOCATION	SURVEY COMPLETED BY
PERSON CONTACTED	TITLE OF CONTACT

BRIEF DESCRIPTION OF JOB

GENERAL	SAT	UNSAT	N/A	COMMENTS
Postings	☐	☐	☐	
Programs	☐	☐	☐	
Training	☐	☐	☐	
First Aid	☐	☐	☐	
Sanitation	☐	☐	☐	
Hazard Communication	☐	☐	☐	
PPE	☐	☐	☐	
Fire Protection	☐	☐	☐	
Flammable Liquids	☐	☐	☐	
LPG	☐	☐	☐	
Barricades/Traffic	☐	☐	☐	
Competent Person	☐	☐	☐	
Drug Cards	☐	☐	☐	

WALKING SURFACE	SAT	UNSAT	N/A	COMMENTS
Exterior	☐	☐	☐	
Excavations	☐	☐	☐	
Interior	☐	☐	☐	

FALL PREVENTION PROGRAM	SAT	UNSAT	N/A	COMMENTS
Iron Work	☐	☐	☐	
Roof	☐	☐	☐	
Scaffolds	☐	☐	☐	
Aerial Devices	☐	☐	☐	
Walkways	☐	☐	☐	
Ladders	☐	☐	☐	

FALL PROTECTION USEAGE	SAT	UNSAT	N/A	COMMENTS
Guardrails	☐	☐	☐	
Harness	☐	☐	☐	

Warning Lines	☐	☐	☐	
Controlled access	☐	☐	☐	

HAND POWER TOOLS	SAT	UNSAT	N/A	COMMENTS
Guards	☐	☐	☐	
Condition	☐	☐	☐	

ELECTRICAL	SAT	UNSAT	N/A	COMMENTS
GFCI	☐	☐	☐	
Extension Cords	☐	☐	☐	
Temporary Wiring	☐	☐	☐	

MATERIALS/HANDLING	SAT	UNSAT	N/A	COMMENTS
Chain/Sling	☐	☐	☐	
Stable Storage	☐	☐	☐	

LADDERS	SAT	UNSAT	N/A	COMMENTS
Extended	☐	☐	☐	
Secured	☐	☐	☐	
Feet	☐	☐	☐	
Condition	☐	☐	☐	

SCAFFOLD	SAT	UNSAT	N/A	COMMENTS
Base	☐	☐	☐	
Secured	☐	☐	☐	
Planking	☐	☐	☐	
Guard Rails	☐	☐	☐	
Access	☐	☐	☐	

CRANES	SAT	UNSAT	N/A	COMMENTS
Inspection	☐	☐	☐	
Swing Area	☐	☐	☐	
Stable	☐	☐	☐	
Electrical Clearance	☐	☐	☐	

EXCAVATION	SAT	UNSAT	N/A	COMMENTS
Shoring/Benching	☐	☐	☐	
Spoils	☐	☐	☐	
Egress	☐	☐	☐	
Protection	☐	☐	☐	

GENERAL	SAT	UNSAT	N/A	COMMENTS
Conditions/Housekeeping (Refers to avoidable hazard associated with operations, methods of handling and processing systems, job layout, housekeeping)	☐	☐	☐	

	Burkholder's Heating and Air Conditioning, Inc.	Issue Date:	02/01/19
		Revision Date:	
		Next Review Date:	02/01/20
20.0 Safety Inspections			

Unsafe Practices (refers to the violation of safety rules, safe practices and established procedures)	☐	☐	☐	

OVERALL JOBSITE: ☐ Excellent ☐ Good ☐ Fair ☐ Unsatisfactory

1. Purpose
   a. The purpose of this program is to minimize the potential for an injury, illness, or property loss due to the improper storage or handling of flammable liquids.
      i. The following system is used to identify flammable containers:
         1. Red: Gasoline
         2. Yellow: Diesel
         3. Blue: Kerosene
2. Scope
   a. This program covers the storage and handling of flammable and combustible liquids in all areas.
3. Responsibilities
   a. The administration and enforcement of this program will be the responsibility of the safety manager.
   b. All employees are responsible and will be held accountable for complying with this program.
4. Definitions
   a. "Combustible Liquid" - Any liquid having a flash point at or above 100oF (37.8oC).
   b. "Flammable Liquid" - Any liquid having a flash point below 100oF (37.8oC).
   c. "Safety Can" - An approved closed container of not more than five gallons' capacity, having a flash-arresting screen, spring-closing lid, and spout cover so designed that it will safely relieve internal pressure when subjected to fire exposure.
5. Storage of Flammable Liquids
   a. Designated Storage - Flammable and combustible liquids not in use will be stored in the designated storage areas.
   b. Electrical Equipment - The electrical equipment in the flammable liquid handling areas was designed for Class I hazardous locations and should not be altered or defeated. No new electrical equipment should be introduced into these areas unless it is designed and properly installed for Class I hazardous locations.
   c. Smoking - Smoking is only permitted in the lunch, locker and designated rooms.
   d. Ventilation - Ventilation in flammable liquid areas should be maintained in good working order and should be used for removal or dilution of vapors presenting potential health and/or flammability hazards.

e. Storage of Dispensing Drums - Dispensing drums stored on metal racks should be positioned with end bung openings toward the front aisle and side bung openings on top. Dispensing drums may also be stored outside in a curbed storage area.

f. Bung Vents, Faucets, and Drip Cans - All active drums should be equipped with safety bung vents and self-closing safety faucets. Safety drip cans should be placed under all dispensing faucets.

g. Stacking of Containers - Containers over 30 gallons' capacity should not be stacked one upon the other.

h. Grounding - All tank and drum storage should be properly grounded at all times. Continuity ground testing will be conducted annually to assure the integrity of the ground.

i. Verification Equipment - Verification equipment should be maintained in good working condition and should be immediately accessible when dispensing, transferring, or handling flammable and combustible liquids.

6. Dispensing of Flammable Liquids

a. Dispensing System - Dispensing should be by approved pump or self-closing faucet only.

b. Bonding - Flammable liquid dispensing and receiving containers should be electrically interconnected (bonded) before pouring to reduce voltage potential that can result in static electrical sparks capable of igniting flammable vapors. Bonding wires and clips should be used instead of trying to make direct contact between the dispensing and receiving containers. Bonding should be used between all containers, including mixers, safety cans, drums, etc.

c. Spills - All flammable and combustible liquid spills should be contained and cleaned up immediately. Packaging, labeling, and disposal of waste should comply with all applicable environmental regulations. Spill kits must be available on each project.

d. Disposal - All solvent waste, oily rags, and flammable liquid waste should be kept in fire-resistant, covered containers until removed from the job site.

7. Handling of Flammable Liquids

a. Safety Cans - Only approved containers (safety cans) should be used for transferring and handling of flammable and combustible liquids in the work area. For quantities

one gallon or less, only the original container or approved metal safety can should be used for handling of flammable liquids.

b. Open or Glass Containers - Open or glass containers are not permitted to be used for the transferring or handling of flammable liquids.

c. Covered Containers - Flammable and combustible liquids should be kept in covered containers when not in use.

d. Color Identification - All flammable and combustible liquids transferred through the jobsite should be in safety cans colored: Red; Gasoline, Yellow; diesel, Blue; kerosene.

e. Labeling - The contents of all safety cans should be clearly identified with yellow lettering.

f. Areas of Use - Flammable and combustible liquids should be used where there are no open flames or other ignition sources within the possible path of vapor travel.

g. Waste - Combustible waste materials and residues should be kept to a minimum, stored in approved, closed metal waste containers, and disposed of in accordance with applicable environmental regulations.