Safety Manual

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Safety Program Statement

The following policies and procedures have been developed to ensure the health and welfare of all our employees. In addition, they have been developed to comply with Federal, State and Local Regulations with particular emphasis on the Occupational Safety & Health Administration (OSHA) Act.

To encompass all standards within our policies and procedures would not be practical. The following policies and procedures are as they apply to our general line of business. They are to be used as reference material and as training tools.

If exposures exist that are not covered by the following, please notify the Safety Director so that the exposures can be eliminated or controlled to comply with standards other than the ones that apply to our general line of business.

Drug & Alcohol Policy and Procedure

Baker Group (hereinafter referred to as "The Employer" or "The Company") has a vital interest in maintaining a safe, healthy, and efficient working environment. Being under the influence of a drug or alcohol on the job poses serious safety and health risks to the user and to all of those who work with the user. The use, sale, purchase, transfer or possession of an illegal drug at the workplace, and the use, possession, or being under the influence of alcohol also imposes unacceptable risks for a safe, healthy, and efficient operation.

The Company and their Union Affiliates have a right and obligation to maintain a safe, healthy, and efficient workplace for all of its Employees and members, and to protect their property, information, equipment, operations, and reputation. The Company recognizes their obligation to other companies to provide services that are free of the influence of illegal drugs and alcohol, and will endeavor through this policy to provide drug and alcohol free services.

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The Company further express their intent through this policy to comply with federal and state rules, regulations or laws that relate to the maintenance of a workplace free from illegal drugs and alcohol. Should any dispute arise with respect to the application or implementation of this policy, such dispute shall be submitted through the grievance and arbitration provisions of the agreement.

Purpose

This policy implemented pursuant to Iowa's Private Sector Drug-Free Workplaces law (Iowa Code §730.5) and the Drug-Free Workplace Act of 1998.

This policy outlines the goals and objectives of The Company and provides guidance to supervisors and employees concerning their responsibilities for carrying out the program.

Scope

This policy applies to all departments, all Employees, and all job applicants, including bargaining and non-bargaining Employees, apprentices and pre-apprentices, classified workers, clerical, management, contract Employees and part time Employees.

Preface

Alcohol/substance abuse is recognized as a treatable illness. The desired result and preferred procedure is rehabilitation through a referral to a locally operated Employee Assistance Program (EAP). For information regarding the current EAP program contact The Employee Assistance Centre at 1-800-327-4692 or visit 505 Fifth Avenue Suite 600, Des Moines, Iowa. They should provide the Employee and the supervisor educational programming, individual and family counseling, as well as treatment and referral services.

Definitions

Alcohol means any beverage that contains ethyl alcohol (ethanol), isopropanol, or methanol, including but not limited to beer, wine, and distilled spirits.

Workplace, Company Premises, or Company Facilities means all property of the Employer, or place in which the Employer is providing services including, but not limited to, the offices, facilities, and surrounding

areas on Employer owned or leased property, parking lots, and storage areas. These areas also include Employer job sites. The terms also include Employer owned or leased vehicles and equipment wherever located.

Drug or Alcohol Testing means the scientific analysis of urine or breath for the purpose of detecting a drug or alcohol.

Illegal Drug means any drug which is not legally obtainable; any drug which is legally obtainable but has not been legally obtained; any prescribed drug not legally obtained; any prescribed drug not being used for the prescribed purpose; any over-the-counter drug being used at a dosage level other than recommended by the manufacturer or being used for a purpose other than intended by the manufacturer; and any drug being used for the purpose not in accordance with bonafide medical therapy. Examples of illegal drugs are cannabis substances, such as marijuana and hashish, cocaine, heroin, methamphetamine, phencyclidine (PCP), any so called designer drugs and look-alike drugs, or those substances included in Schedule I, II, III, IV or V under the Federal Controlled Substances Act, 21 U.S.C. §801 et seq.

Legal Drug means any prescribed drug or over-the-counter drug that has been legally obtained and is being used for the purpose of which prescribed or manufactured.

Probable Cause Drug or Alcohol Testing – means drug or alcohol testing based upon evidence that an Employee is using or has used alcohol or other drugs in violation of the Employer's written policy drawn from specific objective and articulable facts and reasonable inferences drawn from those facts in light of experience. For purposes of this paragraph, facts and inferences may be based upon, but not limited to, any of the following:

- Observable phenomena while at work, such as direct observation of alcohol or drug use, or abuse, or of the physical symptoms or manifestations of being impaired due to alcohol or other drug use
- Abnormal conduct or erratic behavior while at work or a significant deterioration in work performance.
- A report of alcohol or other drug use provided by a reliable and credible source.
- Evidence that an individual has tampered with any drug or alcohol tests during the individual's employment with the current Employer.
- Evidence that an Employee has caused an accident while at work which resulted in an injury to a person for which injury, if suffered by an Employee, a record or report could be required under Chapter 88 of the Iowa Code, or resulted in damage to property, including to equipment, in an amount reasonably estimated at the time of the accident to exceed $1,000.00.
- Evidence that an Employee has manufactured, sold, distributed, solicited, possessed, used, or transferred drugs while working or while on the Employer's premises, or while operating the Employer's vehicle, machinery, or other equipment.

Under the Influence means a condition in which a person is affected by a drug or by alcohol in a detectable manner. The symptoms of influence are not confined to those consistent with misbehavior, nor to obvious impairment of physical or mental ability, such as slurred speech or difficulty in maintaining balance.

Determination of being under the influence can be established by a professional opinion, a scientifically valid test, such as urinalysis or breath test and in some cases by the opinion of a lay person.

Use means consuming, possessing, selling, concealing, distributing or arranging to buy or sell, being under the influence and reporting for duty under the influence of alcohol or illegal drugs.

Employee Assisted Program (EAP) means a program designed to assist Employees with alcohol and/or substance abuse or other problems by means of counseling, treatment, or referral to more specific centers. The emphasis of the program is centered on the recovery of the individual, and to provide services designed to assist in recovery.

Employee means a person in the service of an Employer, and applies to all employees of all departments, bargaining and non-bargaining employees, apprentices and pre-apprentices, classified workers, clerical, management, contract employees and part time employees.

Work hours means all of the time in which an Employee is engaged in work duties or duties complimentary to work subject to Employer's control.

Under the influence of alcohol means a blood alcohol content of .04% or greater. Under the influence of a chemical or a chemical substance or drug means, the urine content determined to equal or exceed the levels approved by the United States Department of Health and Human Services (DHHS).

Pre-Employment screening – the screening of prospective Employees, which will include drug testing and may include alcohol testing, to ascertain whether or not Employee is capable of safely performing the duties and meeting the pre-requisites for the employment offered.

Good Faith means reasonable reliance on facts, for that which is held out to be factual, without the intent to be deceived, and without reckless, malicious or negligent disregard for the truth.

Medical Review Officer means a licensed physician, osteopathic physician, chiropractor, nurse practitioner, or physician assistant authorized to practice in any state of the United States, who is responsible for receiving laboratory results generated by an Employer's drug or alcohol testing program, and who has knowledge of substance abuse disorders, and has appropriate medical training to interpret and evaluate an individual's positive test result, together with individual's medical history and any other relevant biomedical information.

Prospective Employee means a person who has made an application, whether written or oral, to an Employer to become an Employee.

Minor means an individual who is under 18 years of age and is not considered by law to be an adult.

Parent means one biological or adoptive parent, a step parent or a legal guardian or custodian of the minor.

Required Testing of Employees for Drug and Alcohol

The Employer will require Employees to take drug and alcohol tests in the following circumstances:

- Employer may conduct drug or alcohol testing of Employees during, and after the completion of, drug or alcohol rehabilitation for up to one year.

- Employees will be tested for drug and/or alcohol if there is a probable cause that the Employee is under the influence of a drug or alcohol. Probable cause drug or alcohol testing is defined in Iowa Code §730.5(1)(h).
- When a Job Applicant seeks employment with Employer. This includes pre-apprentices who are about to become apprentices.
- Employee is involved in, or associated with, an accident that results or could result in the filing of a workers' compensation claim.
- An Employee is required, subject to drug and alcohol testing pursuant to federal law, regulations, or law enforcement.
- Site owner requires the Employer to have its Employees drug and/or alcohol tested prior to the Employer providing services at the site.
- Unannounced Testing. Testing that is conducted on a periodic basis, without advance notice of the test to employees and without individualized suspicion.
- Employees subject to "unannounced" testing. Any employees who are selected from the following pools of employees may be subject to unannounced testing.
- Entire employee population at a particular work-site with the exception of employees who are not scheduled to be at work at the time of the testing is to occur, because of the status of the employees (i.e. leave of absence, lay-off, different shift, etc) or who have been excused from work pursuant to the employer's policies prior to the time the testing is announced to employees.
- All employees at a particular work site who are in a pool of employees in a safety-sensitive position with the exception of employees who are not scheduled to be at work at the time the testing is to occur, because of the status of the employees (i.e. leave of absence, lay-off, different shift, etc) or who have been excused from work pursuant to the employer's policy prior to the time the testing is announced to employees.
- The Company reserves the right to amend this list of times in which an Employer will require drug and alcohol testing of Employees. Any amendment will be provided to the Employees in writing prior to its implementation.

Education

Selected supervisory personnel of Employer will attend a minimum of two hours of initial training and attend on an annual basis thereafter a minimum of one hour of subsequent training.

Training shall include but is not limited to information concerning the recognition of evidence of Employee alcohol or other drug abuse, the documentation and corroboration of Employee alcohol and other drug abuse, and the referral of Employees who abuse alcohol or other drugs to the Employee Assistance Program or to the resource file of Employee assistance services providers.

Employees are to be informed of:

- Dangers of drug and alcohol use in the workplace
- Local Employee Assistance Programs, and other drug abuse programs certified by the Iowa Department of Public Health, mental health providers, and other persons, entities, or organizations available to assist Employees with personal or behavioral problems.

- The provisions of this policy.

Prohibited Activities
Illegal Drugs and Alcohol:

- The use, sale, purchase, transfer, or possession of any illegal drug or alcohol by an Employee while on Employer's premises or while performing Employer business is prohibited.

Discipline
Any Employee who possesses, distributes, sells, attempts to sell, or transfers illegal drugs on Employer premises or while on Employer business will be discharged.

Any Employee who is found in possession of or under the influence of alcohol violates this policy and is subject to discipline up to and including discharge.

Any existing employee who is found through drug or alcohol testing to have in his or her body a detectable amount of an illegal drug or alcohol will be offered a one-time opportunity to enter and successfully complete a rehabilitation program that has been approved by the Employer. The Employee will be responsible to pay his/her portion of the cost of rehabilitation. This opportunity is not available to Job Applicants. During rehabilitation, the Employee will be subject to an unannounced drug or alcohol testing. Upon return to work from rehabilitation, the Employee will be subject to unannounced drug or alcohol testing for a period of one (1) year. Any test that is confirmed as positive during or following rehabilitation will result in discharge.

Drug and Alcohol Testing of Job Applicants
All Job Applicants who are conditionally offered employment subject to passing the drug test, including applicants for part time and seasonal positions and applicants who are former Employees, are subject to drug and alcohol testing.

A Job Applicant must pass the drug test to be considered for employment.

A prospective Employee will be provided written notice of this policy and by signature will be required to acknowledge receipt and understanding of the policy.

If a Job Applicant refuses to take a drug or alcohol test, or if evidence of the use of illegal drugs or alcohol by a prospective Employee is discovered, the pre-employment process will be terminated and the Job Applicant will not be hired. Applicant may re-apply after a term of six months.

Drug and Alcohol Testing of Employees
Employer will notify Employees of this policy by:

- Providing each Employee a copy of the written policy, and obtaining a written acknowledgement from each Employee that the policy has been received and read.
- Announcing the policy in various written communications and making presentations at Employee meetings.

An Employer may perform drug and alcohol testing:

- Of any Employee who manifests “probable cause” behavior
- Of any Employee who was involved in, or associated with, an accident that results or could result in the filing of a workers’ compensation claim
- Of any Employee who is subject to drug or alcohol testing pursuant to federal or state rules, or regulations or laws

Employee’s consent to submit to drug or alcohol testing is required as a condition of employment, and Employee’s refusal to consent may result in disciplinary action, including discharge, for a first refusal or any subsequent refusal.

Employee who is tested in a probable cause situation may be suspended pending receipt of written test results and whatever inquiries may be required. If the drug or alcohol test results are negative, employee will be reimbursed for all back pay that resulted from the suspension.

Employer will offer to provide transportation or pay reasonable transportation costs to Employees if drug and/or alcohol sample collection is conducted at a location other than Employee’s normal work site. If the Employee whose faculties appear to be impaired refuses transportation assistance and indicates an intention to drive from work or to the testing center, the supervisor or designee will document the refusal and will warn the Employee that proper authorities will be notified.

Testing procedures will follow all requirements as set forth in Iowa Code §730.5(7).

A confirmed positive drug or alcohol test, an altered test result or a diluted test result of a current Employee shall be provided to the Employee by the Employer in writing, by certified mail, return receipt requested. In that writing, the Employee will be told that he/she has the right to request and obtain a confirmatory test of the second sample collected at an approved laboratory of the Employee’s choice. The fees for such a confirmatory test shall be payable by the Employee. The employee will have seven (7) days after receipt of the letter to (a) request the test; (b) identify the laboratory to perform the test and (c) pay for the test.

If an Employee is a minor, any notice that is required to be given shall be provided to the parents of any minor Employee by certified mail, return receipt requested.

Any action taken against an Employee shall be based only on the results of the drug or alcohol test. If rehabilitation is required, the Employer shall not take adverse employment action against the Employee so long as the Employee complies with the requirements of rehabilitation and successfully completes rehabilitation.

Appeal of a Drug or Alcohol Test Result

An Employee or Job Applicant will be offered the opportunity to explain to the MRO the positive results. The purpose of this meeting will be to determine if there is any reason that a positive finding could have resulted from some cause other than drug or alcohol use. The decision of the medical review officer will be final.

An Employee whose drug or alcohol test is reported positive will be offered an opportunity to obtain an independent test at the Employee’s expense, of the remaining portion of the urine specimen which yielded the positive results and to obtain the written test result and submit it to an independent medical review officer at the Employee’s expense. All fees for such a confirmatory test shall be payable by the Employee.

The employee will have seven (7) days after receipt of the letter from the employer to (a) request the test; (b) identify the laboratory to perform the test and (c) pay for the test.

An Employee may contest the positive results by informing the Employer within 72 hours after receiving notice that he/she has had a positive test result for a prohibited substance and requesting that such confirmation test as set out in 12.2(a) be done at a laboratory of his/her choosing. The laboratory that the individual chooses must be a SAMSHA certified laboratory, and the testing limits must be at or below those required by this Policy.

During the period of an appeal and any resulting inquiries the employment status of an Employee may be suspended and the costs of second testing will be paid by the Employee.

If the Employee appeal is successful, the Employee will receive back pay for all time he or she was suspended and the costs of the second testing.

Any union Employee, subject to this policy, continues to have access to the usual protections provided as part of Union membership. Union members may request that a Union representative be available or present prior to any action taken by an Employer at any stage of the policy in its administration. If an individual is aggrieved by any action taken under this drug/alcohol policy and his or her complaint cannot be resolved, it may, if the individual or Union requests, be referred as a grievance under the grievance and arbitration provisions of the Union's collective bargaining agreement, Article X Grievances. In the event the matter is referred to Article X Grievances, the arbitrator shall be bound by the provisions of the drug/alcohol policy.

Rehabilitation and Employee Assistance
Rehabilitation assistance in lieu of discharge may be offered:

- To any Employee, with the exception of prospective Employees, who requested rehabilitation assistance, provided the request is unrelated to any identification of the Employee as a violator of this policy
- To any Employee, with the exception of prospective Employees, who has violated this policy, provided the violation does not involve selling or transferring illegal drugs, or serious misconduct

When an Employee tests positive for the first time for the presence of alcohol or illegal substance, the Employer shall take no disciplinary action against said Employee, due to the Employee's drug involvement if the Employee undergoes a substance abuse evaluation and if Employee successfully completes substance abuse treatment, if treatment is recommended by the evaluation. However, if an Employee fails to undergo substance abuse evaluation required under the results of the drug test, or fails to successfully complete substance abuse treatment when recommended by an evaluation, the Employee may be disciplined up to and including discharge.

Rehabilitation assistance given by the Employer will be:

- Limited to those medical benefits and cost sharing arrangements that may be available in the Employee's medical benefits plan
- Employee is responsible for all other payments for rehabilitation

- Employee will not be compensated for any time off for rehabilitation

Employer will provide to any Employee, upon request, and at no cost to the Employee, information concerning local resources that are available for treatment of drug and alcohol related problems. Baker will not share in any expense.

Inspections and Searches
When probable cause exists to believe an Employee has illegal drugs in his or her possession while at work, the Employer may conduct unannounced searches for illegal/unauthorized drugs, legal drugs, and alcohol at the Employer's premises, at sites in which the Employer is providing services and Employer's vehicles or equipment wherever located. Employees are expected to cooperate.

Such searches shall, however, include only property owned and issued by the Employer and shall not include the Employee's person, lunch box, purse or other personal property in the Employee's possession. Any Employee who fails to cooperate in a search will be subject to disciplinary action up to and including immediate termination.

An Employee's consent to a search is required as a condition of employment, and the Employee's refusal to consent may result in disciplinary action, including discharge, even for a first refusal.

Illegal drugs, drugs believed to be illegal, and drug paraphernalia found on Employer property or on sites where Employee is providing services will be turned over to the appropriate law enforcement agency and the full cooperation will be given in any subsequent investigation. Substance that cannot be identified as an illegal drug by a layman's examination will be turned over to a forensic lab for scientific analysis.

An Employee who is the subject of a drug related investigation by Employer or by a law enforcement agency may be suspended pending completion of the investigation.

Confidentiality
All information relating to drug or alcohol testing or the identification of persons as users of drugs and alcohol will be protected by the Employer as confidential, unless otherwise required by law, overriding public health and safety concerns, or authorized in writing by the persons in question.

The Employer shall select at least one and no more than two, designated representatives to handle all confidential matters regarding this policy. Only the designated representatives will be informed of the test results. The name(s) of the Employer's designated representative(s) will be communicated to the EAP in writing.

An Employee or Prospective Employee who is subject to the drug or alcohol tests conducted under this policy for whom a confirmed positive test result, altered test result or diluted test result is reported shall, upon written request, have access to any records relating to the Employee's drug or alcohol test, including records of the laboratory where the testing was conducted and any records relating to the results of any relevant certification or review by a medical review officer. However, a prospective Employee shall be entitled to records under this section only if the Prospective Employee requests the records within fifteen calendar days from the date the Employer provided the prospective Employee written notice of the results of a drug or alcohol test.

An Employer may use and disclose information concerning the results of a drug or alcohol test under any of the following circumstances:

- In an arbitration proceeding in accordance with Article X of a collective bargaining agreement, or administrative agency proceeding or judicial proceeding under worker's compensation laws or employment compensation laws or under common or statutory laws where action taken by the Employer based on the tests is relevant or is challenged
- To any federal agency or other unit of the federal government as required under federal law, regulation or order, or in accordance with compliance requirements or a federal government contract
- To any agency of this state authorized to license individuals if the Employee tested is licensed by that agency and the rules of that agency require such disclosure
- To a Union representing the Employee
- To a substance abuse evaluation or treatment facility or professional for the purpose of evaluation or treatment of the Employee

Safety and Health Responsibilities

It is the desire of Baker Group to protect employees from accidental injury and damage to health while working for our organization. This matter must receive top priority and attention from all levels.

Duties and responsibilities of all personnel under this firm's safety program are as follows:

Management Responsibilities

As leaders, it is management's responsibility to foster a sense of urgency for safety among employees. Each of the sections outlined in the Baker Group Program includes specific guidelines on accident/incident-prevention activities. If you require assistance, contact the safety department.

Management tasks include:

- Ensuring that each employee has measurable safety goals as part of their daily work procedure. Baker Group recommends the following safety activities be documented by management and the Safety Department be notified thereafter (within 24 hours).
    - Any preventable incident involving vehicle, injury, or property damage.
    - Attending safety meetings and training.
    - Driving complaints
    - Promptly address safety problems or issues that employees bring to their attention.
    - Implementing an incident review process when necessary.
    - Ensuring that sufficient employee time, adequate leadership resources, and appropriate funds are budgeted for safety.
    - Evaluating supervisors each year to make sure they are carrying out their responsibilities as described in this program.
    - Ensuring that incidents are fully investigated.
    - Taking preventative action to ensure that hazardous conditions or unsafe behaviors do not reoccur.
    - Ensuring that a record of injuries and illnesses is maintained and posted as described in this program.
    - Setting a good example by following established safety rules and attending required training.
    - Promptly addressing unsafe practices or conditions.
    - Utilize the policies and procedures set forth by Baker Group to resolve safety issues and administer disciplinary action.

Supervisor Responsibilities:

Safety is considered a critical function of the supervisor's job, not an additional duty. Supervisors will perform the following tasks as part of this function:

- Ensuring that each supervised employee has received an initial safety training/orientation before beginning work.
- Ensuring that each supervised employee is competent in the safe practices of their job tasks and receives training on safe operation of equipment before starting work on that equipment or task.
- When necessary, schedule retraining for employees who appear unfamiliar with safety concepts.
- Ensuring that each employee receives the required tools, associated training, and personal protective equipment (PPE) and associated training before starting a job task.
- Promptly addressing safety problems or issues that employees bring to their attention.
- Performing a daily safety-check of the work area (pre-task planning) and promptly correcting any hazards found.
- Performing safety observations on supervised employees as they work. Promptly correct any unsafe behavior. Providing on-the-spot training and take corrective action as necessary. Document employee safety observations.
- Setting a good example for employees by following safety rules and attending required training.
- Talking to management about changes to work practices, environment, or equipment that will improve employee safety.
- Promptly addressing unsafe practices or conditions.
- Utilizing the polices and procedures set forth by Baker Group to administer disciplinary action.
- Ensuring that incidents are fully investigated, and corrective action taken to prevent hazardous conditions or unsafe behaviors from reoccurring.

Employee Responsibilities:

Employees are responsible for:

- Adhering to safety rules and avoiding safety shortcuts. Employees are responsible for following the guidance of this safety program and performing all work safely so as not to injure themselves or someone else.
- Promptly reporting unsafe conditions or actions to their supervisor.
- Promptly reporting all injuries to their supervisor, regardless of how minor they may seem.
- Promptly reporting all near-miss incidents to their supervisor.
- Always using personal protective equipment (PPE) and tools in good working condition where it is required.
- Not removing or defeating any safety device or safeguard provided for employee protection.
- Encouraging co-workers by words and example to use safe work practices on the job.
- Making suggestions to their supervisor, safety committee representatives, or management about changes they believe will improve employee safety.
- Completing required safety training and utilizing necessary safety equipment while performing work.
- Adhering to manufacturer safety recommendations and limitations for tools, vehicles, and other equipment.
- Following established environmental policies and practices and properly disposing of hazardous wastes.

Subcontractor responsibilities:

The provisions of these safety responsibilities apply to lower-tier subcontractors and their employees working on projects for Baker Group.

The concern for our fellow employees must be communicated to our subcontractors working on our projects. It is imperative that we observe our subcontractors' operations and where deficiencies are located, identify them to the subcontractors as well as to our safety department. It is the responsibility of the project managers and foremen to do so.

All contracts initiated to subcontractors require that Federal and State Laws and Baker Group's policy concerning safety are observed by the subcontractor. Failure to fulfill this requirement is a failure to meet conditions of our contract. Safety on the project extends through all subcontractor operations, as one unsafe condition unattended generally encourages deficiencies in other areas.

Stop Work Authority

PURPOSE

Baker Group is committed to the prevention and/or reduction of incident and injury. This program has been developed to set forth practice requirements and procedures to protect Baker Group workforce and to initiate a stop work event.

SCOPE

This practice has been prepared for the Baker Group workforce and applies to all Baker Group employees.

ACRONYMS, DEFINITIONS, LANGUAGE

Throughout Baker Group defined and recommended practices, the following words have specific meanings:
"Shall" is used when a provision is required.
"Should" is used when a provision is preferred.
"May" is used when alternatives are equally acceptable

Stop Work: any event where an employee (field, shop, or office) questions, pauses, or stops work when a situation is perceived as unsafe and/or when it could result in an incident.

REQUIREMENTS AND PROCEDURES

All employees have the authority and obligation to stop any task or operation where concerns or questions regarding the control of risk exists.

No work will resume until all stop work issues and concerns have been adequately addressed.

Any form of retribution or intimidation directed at any individual or company exercising their right to issue a stop work authority will not be tolerated by the host facility.

Baker Group employees are responsible to initiate stop work intervention when warranted and management is responsible to create a culture where Stop Work Authority is exercised freely.

When an unsafe condition is identified, the Stop Work Intervention will be initiated, coordinated through the supervisor, initiated in a positive manner, notify all affected personnel and supervision of the stop work issue, correct the issue, and resume work when safe to do so.

All Stop Work Interventions shall be documented for lessons learned and corrective measures to be put into place.

It is the desired outcome of any stop work intervention that the identified safety concern(s) have been addressed to the satisfaction of all involved persons prior to the resumption of work. Most issues can be adequately resolved in a timely manner at the job site, occasionally additional investigation and corrective actions may be required to identify and address root cause.

Baker Group safety bulletin form is the preferred method of documentation, although an email to the safety department may also be completed.

TRAINING REQUIREMENTS

Baker Group employees shall receive Stop Work Authority training before initial assignment. The training must be documented including the employee name, the dates of training and the subject.

Hazard Prevention and Control

Eliminating Workplace Hazards

Baker group is committed to eliminating or controlling workplace hazards that could cause injury or illness to our employees. Baker Group will meet the requirements of federal, state, and local safety standards. Whenever possible, Baker Group will purchase, maintain, and design facilities and equipment to eliminate employee exposure to hazards. Where theses engineering controls are not possible, work rules will be written that effectively prevent employee exposure to the hazard. When the above methods of control are not possible or are not fully effective, employees will utilize PPE such as safety glasses, hearing protection, foot protection, hardhat, gloves, safety harness, and other protective equipment.

Safety Rules

Safety rules have been established to help make our company a safe and efficient place to work. These rules are listed in this safety program; the company safety handbook; other company material; training material; company policy; Original equipment manufacturer (OEM) instructions; or federal, state, and local standards. Failure to comply with these rules will result in corrective action up to and including termination.

- Horseplay is not allowed! This includes: running, throwing tools, scuffling, practical jokes, etc..
- Seatbelts must be worn at all times in company vehicles / equipment.
- Danger (red) tape can only be crossed after receiving permission from the person in charge of the work inside the barricade.
- Caution tape shall only be crossed after checking for hazards and deeming the area is safe to enter. You must understand the hazards prior to entering the area.
- OSHA Safety Posters are posted in the breakroom area of each facility.
- Baker Group and its employees shall follow all applicable OSHA standards.
- Baker Group employees shall follow all customer safety policies / procedures. If these differ from Baker Group policies / procedures the more stringent shall take precedence.
- Accidents / incidents / near misses shall be reported to your supervisor immediately.
- Any employee who is involved in an accident shall be required to go through any relative re-training. During the re-training the employee will receive the information again as well as evaluate the training to see where it can be improved.
- Smoking areas shall be allowed only in designated areas and not in company vehicles.
- Food shall not be kept or consumed in areas where there is a potential for chemical / health contamination.
- Employees must be well groomed, long hair must be maintained to ensure it does not become a safety hazard.
- Workplace violence including fighting, throwing objects, threatening, etc… will not be tolerated.
- Do not remove, tamper, or operate any tool / equipment without safety guards.
- Observe and follow all safety signage.
- No riding in or on any vehicle or equipment where there is not a seatbelt, or it is not intended for such use.
- All equipment / vehicles shall be inspected prior to use each day. Any deficiencies shall be reported and corrected prior to use.

- Baker Group will continue to investigate ways to reduce the chance of injury due to repetitive motion.
- Dispose of all products in accordance to manufacturer's recommendations and in appropriate containers.
- Safety will periodically evaluate work areas and worker techniques for injury potential.
- Customer's trade secrets shall remain confidential and not be disclosed.

Disciplinary Policy
Employees are expected to use good judgment when doing their work, and to follow established safety rules. Baker Group has established a corrective action plan to provide appropriate responses for failure to follow safety rules. This policy is not intended to be punitive, but rather to bring about desired changes in employee behavior. Baker Group corrective action process will be utilized as needed. Violations of safety practices will be addressed appropriately. Corrective actions will include coaching, and may involve disciplinary steps, up to and including termination.

Return to Work
If an employee has a condition/situation outside of work such as an injury, pregnancy, mental health, substance abuse issue:

- It is the employee's responsibility to discuss his/her job with a physician and determine if changes the employee can complete his/her duties with or without accommodations.
- Safety and the employee's supervisor must approve the return to work prior to employee resuming work.

Employees injured on the job will be given an appropriate modified/alternate duty while there are restrictions are placed on an employee's work pursuant due to the injury.

Employees with situations that originated outside Baker Group may not have restrictions that cannot be easily accommodated.

Management has the right to remove an employee from work if they are found to be emotionally, physically, or mentally unfit to perform their job.

Subcontractors
Subcontractors must be competent and capable and have appropriate licenses, registrations, and insurance to perform the required work in a safe and environmentally sound manner.

Prior to starting work, clear communication lines, roles, responsibilities, and an emergency action plan shall be established.

Subcontractors will be prequalified by reviewing safety programs, training documents, and safety statistics (TRIR, DART, Fatality Rate must be at or below the industry average).

Subcontractors shall be included in pre-job meetings and safety orientations.

EMERGENCY ACTION PLAN

General

The priority during every emergency is to protect personnel from further injury and to minimize property damage. Each person must know what to do if there is an emergency. As such this plan shall be made available to all employees for review. This plan shall also be reviewed with employees during initial assignment and any time the plan changes or the responsibility of the employees under the plan changes. This plan covers actions to be taken under specific emergency conditions such as fire, tornado, medical emergencies or other emergency, including release (spill) of, or substantial threats of release of, hazardous substances within the Baker Group facility.

Crisis Management Team

Baker Group Crisis Management Team			
NAME	**TITLE**	**CELL PHONE**	**DIRECT LINE**
Tracy Haus	Safety Director	515.208.3072	515.299.4024
Gary Bridgewater	CEO	515.208.2382	515.299.4070
Rob Cross	COO	515.208.3021	515.299.4186

Car Accident Plan

Baker Group vehicles are owned and maintained by Baker Group. With that said, if you are involved in a car accident while driving one of Baker Group's vehicles, please follow the following instructions.

- Take precautions necessary to protect the scene of the accident from further accidents.
- Call police and your supervisor. If someone is injured, request medical assistance.
- Be courteous. Answer police questions. Give identifying information to the other party involved.
- Compete the driver's report of accident. Do this before leaving the scene of the accident if possible.
- Hand any witness the witness card. Have them complete and return to you before they leave the scene.
- As soon as possible, report the accident to the proper authorities, Baker Group.

All Baker Group vehicles shall contain an envelope with the above instructions, a copy of Baker Group's insurance card, witness card, and Driver's Report. These are all forms you will utilize in the event of an accident.

The witness card is to be given to any witness at the scene of the accident. Ask them to complete the form and return to you before they leave the scene. This provides Baker Group with a third party account of the accident.

The Driver's Report is meant to be completed by the Baker Group employee driving the Baker Group vehicle. Make sure to complete as much of the report as possible. This will be used for insurance purposes.

Bomb Threat

Given below are a few standard procedures to follow should you receive a bomb threat over the phone.

- Keep the caller on the phone as long as possible and signal to someone else to notify the proper authorities that a bomb threat is being made.
- Try to get information about the bomb from the caller, such as the type of bomb and where it is located, but don't be pushy.
- Avoid excitement in your voice.
- Write down a detailed account of the call and deliver it to security immediately. The account should include: time of call, voice quality, an accent (if noted), and slurred speech, (suggesting influence of alcohol or drugs).
- Keep the call confidential, unless you are directed by security officers to do otherwise. Bomb threats, understandably, tend to make people panic.
- Report any suspicious looking devices to security. Explosive devices can have a variety of appearances, depending upon whether they are military (rare), commercial or homemade. Do not touch suspicious looking devices.

Follow and fill out Bomb Threat Checklist in the appendix.

Evacuation Plan

Baker Group shall maintain an instruction sheet for evacuation procedures which lists the meeting place once outside the building and the person responsible for taking roll. Baker Group supervisors should go over these procedures and practice exiting so that everyone will react quickly and will know exactly where to meet for roll call.

- If an alarm sounds or you are otherwise instructed to leave the building through the nearest exit. Do NOT return to your office.
- Close doors behind you, but do not lock them. If the door automatically locks when closed, leave it open.
- Remain calm as you leave the building – walk, do not run.
- Use stairwells. Use handrails. Do not push or shove.
- Police and/or fire emergency personnel will assist disabled and injured persons.
- Once outside the building, proceed to your designated safe place for roll call.
- Watch for emergency vehicles and equipment.
- Do not block exits, entrances, walkways, or driveways.
- Do not return to the building until the “all clear” is given.

Flood Plan

Flood/Water Emergency Plan

- Do not enter an area with standing water, “live” electrical wires, or other dangerous conditions until it has been approved for entry by the appropriate safety agency. Wet surfaces can be slippery and may be electrically charged. Be very careful if you must walk on or near a wet surface.
- If it does not threaten your safety, unplug electrical equipment and move items endangered by rising waters to higher shelves or to another safe area.
- Do not attempt to move wet materials unless you are instructed to do so.

Fire Emergency Operating Procedures

Supervisor's Action

- If anyone in the area determines the need for a fire emergency evacuation, a FIRE ALARM pull station will be activated. This is a loud, high-pitched, ear piercing pulsating alarm
- A 911 call will be executed and details of the fire and/or explosion will be provided to emergency response units
- "At no time will Baker Group Employees attempt to contain a fire that has progressed past the initial small stage."

Office and Shop Supervisors Responsibilities

- Lead Employees from work areas when evacuation alarm is sounded.
- Provide necessary assistance to any Employees with disabilities.
- Escort Employees to the designated assembly areas.
- Account for Employees at the designated assembly areas.
- Notify Human Resource of any Employees that are not accounted for.
- Provide control of Employees at assembly areas.

Employee Responsibilities

- Proceed quickly and calmly to nearest exit.
- Close interior doors as you leave your office to indicate the specific office/area is vacated.
- Once outside, proceed to your departments designated evacuation area for roll-call.

IF EVACUATION HAS BEEN DECIDED, NO ONE SHALL ENTER THE BUILDING UNTIL THE FIRE DEPARTMENT HAS GIVEN AN ALL CLEAR TO ALL SHOP AND OFFICE AREAS OR TO A SAFETY COMMITTEE MEMBER IN CHARGE.

Tornados and Severe Weather

Steps you can take if a tornado threatens while you are at a Baker Group Office.

- Advanced Warning
  - Remain calm
  - A supervisor will announce calmly that there is an emergency situation
  - Move to a safe area as instructed by emergency personnel or the public address system
- No Advanced Warning
  - Remain calm.
  - A Supervisor will announce calmly that there is an emergency situation
  - Seek shelter immediately as instructed by emergency personnel or the public address system
  - Do not walk through the building to assess damage

Steps that can be taken if you are away from a Baker Group office:

- If outdoors
  - If possible, get inside a building
  - If shelter is not available or there is no time to get indoors, lie in a ditch or low-lying area or crouch near a strong building. Be aware of the potential for flooding.
  - Use arms to protect head and neck.

- If in a car
    - Never try to out drive a tornado in a car or truck. Tornadoes can change direction quickly and can lift up a car or truck and toss it through the air.
    - Get out of the car immediately and take shelter in a nearby building. Overpasses are NOT safe.
    - If there is no time to get indoors, get out of the car and lie in a ditch or low-lying area away from the vehicle. Be aware of the potential for flooding. Do NOT try to outrun a tornado in an automobile.

Explosion

Emergency Plan

- Remain calm.
- Use the PA system and request that employees move away from windows and glass walls, seek shelter, or evacuate the building if told to do so by emergency personnel
- Be prepared for further explosions
- Seek shelter under your desk or a table.
- Watch for falling objects.
- Keep away from windows furniture that may fall (file or supply cabinets, for example) areas of shelving, electrical equipment
- Be prepared for fire, power failure, and/or water leaks as a result of the explosion(s).
- Do not use matches or cigarette lighters.
- Do not use telephones or computers.
- Do not move seriously injured persons unless they are in immediate danger from fire, building collapse, or falling debris.
- Follow all instructions from emergency personnel and the public address system.
- If instructed to do so, evacuate quickly and move away from the building.

Workplace Violence

- Weapons in Workplace
    - No weapons are allowed in our workplace. Weapons include firearms, knives, brass knuckles, martial arts equipment, clubs or bats and explosives.
    - Any employee found with an unauthorized weapon in the workplace will be subject to discipline, up to and including termination.
- Emergency or Life-Threatening Situations
    - In the case of an emergency or life-threatening situation, immediately call 911.
    - Responsibility to Report: Anyone witnessing or receiving a report of prohibited behavior, or possession, display or use of any weapon shall immediately notify the appropriate authority, as listed above.
    - Employees should mentally "map out" a personal survival strategy in the event of workplace violence.

- Workplace violence incidents will differ greatly, and each situation will dictate a different response. The circumstances of a given situation will suggest which of, and in which order, the following should occur:
    - Report to the Police by dialing 9-1-1 at the safest opportunity
    - Alert others
    - Secure surroundings, lock doors. If appropriate, evacuate employees/leave the area.

Death

Jobsite Emergency Plan

- Call 911
- Contact the Safety Director
- The Safety Director will contact the Senior Leadership
- Clear the area of spectators
- Secure the scene and do not touch or move anything
- Assist in directing emergency personnel to the scene
- Do not give out any information to the media

INCIDENT REPORTING, MANAGEMENT, AND RECORDKEEPING

PURPOSE

To set forth practice requirements and procedures to guide Baker Group's workforce for the proper notification and documentation of injury and other incident occurrences, including near misses.

SCOPE

This practice has been prepared for the Baker Group workforce and applies to work performed on Baker Group or customer premises. This practice may be superseded by equivalent or more stringent host employer, controlling contractor, or regulatory requirements.

ACRONYMS, DEFINITION, AND LANGUAGE

The following terms are used in the OSHA standard and/or this written program.

Incident – Any event where through the course of Baker Group business unwanted contact with or uncontrolled release of a source of energy/harm resulted in injury or illness to a person or damage was caused to equipment, material, vehicle, or structure.

Injury or illness – An injury or illness is an abnormal condition or disorder. Injuries include cases such as, but not limited to, a cut, fracture, sprain, or amputation. Illnesses include both acute and chronic illnesses, such as but not limited to, a skin disease, respiratory disorder, or poisoning.

Medical Treatment – Includes managing and caring for a patient for the purpose of combating disease or disorder. Medical treatment DOES NOT include the following, and these are not recordable: visits to a doctor or health care professional solely for observing or counseling; diagnostic procedures, including administering prescription medications that are used solely for diagnostic purposes; and any procedure that can be labeled first aid.

Near Miss – any unwanted contact with or uncontrolled release of a source of energy/harm event that did not result in injury, illness or damage – but had the potential to do so.

OSHA Recordable Injury or Illness – Any work-related fatality; any work-related injury or illness that results in loss of consciousness, days away from work, restricted work, or transfer to another job; any work-related injury or illness requiring medical treatment beyond first aid; any work-related diagnosed case of cancer, chronic irreversible diseases, fractured or cracked bones or teeth, and punctured eardrums; also special recording criteria for work-related cases involving: needle sticks and sharps injuries, medical removal, hearing loss; and tuberculosis.

LANGUAGE

Throughout Baker Group defined and recommended practices, the following words have specific meanings.

'Shall' is used when a provision is mandatory.
'Should' is used when a provision is preferred.
'May' is used when alternatives are equally acceptable.

RESPONSIBILITIES

All Baker Group Employees – Shall notify their supervisor and Safety Manager of any incident that occurs to them or that they witness as soon as effected employee(s) are out of harm's way. Employees should, and are encouraged to, report near miss events in the same manner.

Supervisor/Manager – Shall communicate to employees that they have the right to report work related injuries, illnesses, and near misses. Shall explain that there will be no discrimination or retaliation for reporting these events, and that they are encouraged to do so. Shall notify their safety manager of event occurrence as soon as they are notified, and a documented First Report submitted within 24 hours.

Safety Manager – Completing incident investigation shall become the manager's priority task until the event is at a point where it cannot be worked any further. Collect as much information as possible as soon as possible. They shall encourage the timely reporting of incidents and near miss events to Baker Group employees.

Safety Director – Shall communicate regularly to all Baker Group employees their right to report injuries and illnesses including procedures for reporting work-related injuries and illnesses promptly and accurately, that reporting is encouraged, and that no one will be discharged or discriminated against for reporting work-related injuries or illnesses. The Safety Director is responsible for signing the OSHA 300A.

The Safety Director shall keep record of all Baker Group occupational injuries and illnesses and post an annual summary at all Baker Group establishments. Records shall be maintained for 5 years. The annual summary shall be posted no later than February 1st and posted through April 30th.

Report all required injury or illness events to appropriate regulatory agencies and Baker Group's insurance company.

REQUIREMENTS AND PROCEDURES

Incident Reporting

Prompt incident reporting is crucial to the success of effective claims management, as well as the elimination of unsafe conditions. It is important that all injuries and incidents, including property damage, are verbally reported to the Safety Department as soon as affected individuals are out of danger. The written report must be submitted to the Safety Department within 24 hours of the occurrence. These two simple tasks, if consistently adhered to, will assist in preventing similar incidents from reoccurring and allow for prompt action to mitigate the current loss. If you have any questions regarding incident reporting, please contact a member of the Safety Department.

All employees' have the right to report injuries and illnesses without fear of any type of retaliation or discipline from Baker Group. In fact, all employees are encouraged to report these events as soon as possible for proper care of the employee and management of the event.

If an injury occurs, Baker Group is committed to getting the right amount of care for the severity and type of injury. We will aggressively manage and investigate injuries to prevent them from becoming more severe and to learn as much as possible from them including putting corrective actions into place.

If medical attention is necessary, your Safety Manager will guide you to an Occupational Health Clinic, which is preferable to a standard Urgent Care. This may be accomplished proactively making arrangements with clinics who specialize in Occupational Health, and recommending injured employees seek treatment there. Occupational health clinics are meant to promote and maximize safety, health, and productivity. If work restrictions are necessary during the recovery time after an injury Baker Group can and will accommodate any you may receive, to help you avoid lost time and keep you working.

It is Baker Group's goal to return employees to meaningful, productive temporary transitional work following an injury incident. We believe that injured employees benefit from maintaining a routine, keeping in contact with co-workers, staying connected to the job and will heal more quickly by staying active. If a work-related injury results in an employee receiving restrictions from their health care provider and they are unable to perform their routine work functions during the healing period, they should be offered temporary modified or alternative (light duty) work assignments that reasonably accommodate their restrictions in their current job (specifically the project/shop/home department where the injury occurred). Supervisors must be made aware of the restrictions to ensure the modified work meets the physician's orders.

Record of all incidents shall be maintained by the Safety Department.

External Reporting and Regulatory Recordkeeping
OSHA injury or illness recordkeeping and reporting for every injury or illness determined by the Safety Director to be an OSHA recordable, the event shall be recorded on the OSHA 300 Log and 301 Incident Report within seven calendar days of receiving information regarding occurrence.

Electronic Submission (beginning July 1st 2017) - Electronically submit OSHA 300A- Summary of Work-Related Injuries and Illnesses beginning July 1st, 2017 and 301- Injury and Illness Incident report annually beginning July 1st, 2018. Beginning March 2nd 2019 submit prior years OSHA 300, 300A and 301 annually.

Report all defined hospitalizations to OSHA **-** Within eight (8) hours of Baker Group notification of the death of any employee as a result of a work-related incident, Baker Group shall report the fatality to the Occupational Safety and Health Administration (OSHA), U.S. Department of Labor. Within twenty-four (24) hours of Baker Group notification of an in-patient hospitalization of one or more employees, or an employee's amputation, or an employee's loss of an eye, as a result of a work-related incident, you must report the in-patient hospitalization, amputation, or loss of an eye to OSHA.

Baker Group must report the fatality, inpatient hospitalization, amputation, or loss of an eye using one of the following methods:

- By telephone or in person to the OSHA Area Office that is nearest to the site of the incident.
- By telephone to the OSHA toll-free central telephone number, 1-800-321-OSHA (1-800-321-6742).
- By electronic submission using the reporting application located on OSHA's public Web site at *www.osha.gov*.

Corrective Actions and Lessons Learned
Corrective actions, both immediate and long term will be identified to prevent recurrence of similar incidents. Collaborate with team to identify possible corrective actions (temporary or permanent). Develop SMART corrective actions to prevent recurrence. Implement corrective actions.

TRAINING

All employees shall be made aware of the Incident Reporting Practice and its procedures. The safety department will determine acceptable methods of training. Training shall be documented as instructed within the Baker Group program. All employees shall be trained on how to properly report an incident.

SUPPORTING DOCUMENTS

ASSOCIATED DOCUMENTS & REFERENCES

The following standards are relevant to this practice.

- OSHA Standard – 29 CFR 1904
- OSHA Standard – 29 CFR 1910.41

First Aid, CPR, and AED

In the absence of a reasonably accessible clinic, hospital, or physician, a designated First Responder who has a valid certificate in first-aid, CPR, and AED training shall be available at the worksite to render first aid. First aid kits / supplies shall be located in all job trailers, gang boxes, and company vehicles and will be easily accessible to all employees. They will be inspected and restocked on a regular basis. In situations where a person may be exposed to injurious corrosive materials, suitable facilities for quick drenching or flushing shall be provided within the work area for immediate emergency use.

First Aid

Provisions shall be made prior to commencement of a project for prompt medical attention in case of serious injury.

- First responders shall be trained and qualified in first aid techniques to control the degree of loss during the immediate post-incident phase.
- In the absence of medical assistance within four minutes of the work site, a designated person with a valid training certificate in first aid, standards, or equivalent shall be available at work sites to render emergency first aid.
- Each jobsite shall have an adequate amount of first aid supplies readily available (i.e., gang box kit, foreman's truck, job site) First aid kits shall be available at all times.
- First aid kits shall consist of appropriate items determined to be adequate for the environment in which they will be used. Items shall be stored in a weatherproof container with individually sealed packages of each type of item (meet ANSI/ISEA Z308.1-2009 requirements.
- Kits shall be inspected quarterly to ensure that contents are stocked and current. Out of stock or expired material shall be replaced immediately.
- Procedures and suitable facilities shall be provided for quick drenching or flushing of eyes or body where they may be exposed to injurious corrosive materials.
- 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 provided.
- 9 1 1 shall be used as an emergency contact when ambulance service is needed. In an instance that a job location is outside of the 9 1 1 area of response, the numbers of physicians, hospitals, or ambulances shall be conspicuously posted.

CPR

Those individuals who decide to become trained in CPR must attend a CPR course provided by an accredited organization (i.e. American Heart Association, Red Cross or AHSI).

A first responder(s) shall be designated in each regional office. They must be familiar with CPR/First Aid procedures and be prepared and act quickly to ensure the health and well-being of each employee. Those who are knowledgeable and well-trained are prepared to protect the injured employee in their care.

First responders are responsible for keeping their cards current and not let them lapse (every 2 years). First responders with expired cards will no longer be considered a first responder.

It is recommended that all other employees who hold a first aid and/or CPR certification periodically update their skills (every 2 years).

AED

Sudden cardiac arrest occurs when the heart stops pumping blood to the body. This condition is most often due to an abnormal heart rhythm referred to as ventricular fibrillation. A normal rhythm can be re-established by providing an electrical shock to the heart. An automated external defibrillator (AED) is a device designed to analyze the victim's heart rhythm and notify the user when to deliver a potentially life-saving shock. If there is no heartbeat, the AED unit will not provide a shock and CPR must be administered immediately.

An employee who does not respond, or appears to be in distress, may have an abnormal heart rhythm that stops the heart from pumping blood. In such case, an AED may be used to provide aid to the victim.

Observe the following steps:

- Check to see if the scene is free of hazards such as
    - Electrical (downed power lines, electrical cords, etc…)
    - Chemical hazards (gases, liquids, solids, or fumes)
    - Suspicious individuals or anyone that could potentially harm a person
    - Traffic both vehicular and pedestrian that may harm the victim, and
    - Fire or flammable gases such as medical oxygen or cooking gas

Determine that the patient is:

- Unresponsive
- Not breathing
- Without a pulse

If patient is not responsive, immediately call 9 1 1 and retrieve or ask someone to retrieve the nearest AED unit.

Begin chest compressions and CPR, if trained and feel comfortable doing so until AED unit has arrived.

When the AED arrives:

- Stop CPR
- Follow voice prompts provided by the AED
- Place the pads on the patient's bare skin
- Follow voice prompts provided by the AED
- If advised, press the shock button and stay clear of the patient.
- Continue to follow voice prompts provided by the AED
- Continue until EMS arrives on site

AED Maintenance

The AED units require no calibration or verification of energy delivery. The units perform regular self-tests in order to ensure proper functioning. In order to ensure readiness for use, the status indicator of each AED should be checked for a flashing green indicator light. This symbol indicates that the unit is in proper working order. If anything other than flashing green light is displayed, notify the safety department.

Bloodborne Pathogens Exposure Control Plan

PURPOSE

Baker Group is committed to providing a safe and healthy workplace. This program was developed to minimize the exposures of bloodborne pathogens in the workplace.
Occupational exposure to blood and other potentially infectious body fluids constitutes a significant risk because these materials may contain pathogens. A pathogen is a microorganism that has the potential to cause disease. Since it is possible to become infected through a single exposure, opportunities for exposure to pathogens must be minimized. Contraction of infectious diseases by employees in an occupational setting is preventable.

Baker Group supports the protection of workers from the occupational risk of infectious disease, including Hepatitis B and Human Immunodeficiency Virus (HIV) through a coordinated and comprehensive infection control program. This program identifies the minimum requirements for the protection of employees with a reasonable potential for exposure to blood and other infectious materials.

SCOPE

The Baker Group Exposure Control Program is designed to eliminate or minimize occupational exposure to bloodborne pathogens and other potentially infectious materials and to outline the protocols established for employee protection, training, documentation, recordkeeping, and ongoing program evaluation.

The OSHA standard and Baker Group's program cover all employees who could be "reasonably anticipated" to be exposed to blood or other potentially infectious body fluids when in the process of carrying out their normal job duties. This does not include incidental exposures that are neither routine nor reasonably anticipated and that the worker is not required to incur in the normal course of employment. An occupational exposure consists of any skin, eye, mucous membrane, or parenteral contact with blood or body fluids during performance of an employee's duties.

ACRONYMS, DEFINITIONS, & LANGUAGE

DEFINITIONS

Bloodborne Pathogens - Microorganisms present in blood that cause disease. These include, but are not limited to, Hepatitis B Virus (HBV) and Human Immunodeficiency Virus (HIV).
Disinfect- Inactivation of virtually all pathogenic microorganisms on inanimate objects.
Engineering Controls - Controls that remove or isolate the hazard from the employee.
Exposure Incident- A specific eye, mouth, other mucous membrane, non-intact skin, or parenteral contact with blood or other potentially infectious materials that results from the performance of an employee's duties.
Infectious Waste - Blood and blood products, contaminated instruments, gloves, dressings, bandages, pathological, and microbiological wastes.
Occupational Exposure - "Reasonably anticipated" skin, eye, mucous membrane, or parenteral contact with blood of other potentially infectious materials that may result from the performance of an employee's job duties.
Other Potentially Infectious Materials - Body fluids, including semen, vaginal secretions, cerebrospinal fluid, synovial fluid, pleural fluid, pericardial fluid, peritoneal fluid, amniotic fluid, saliva in dental procedures, and any body fluid that is visibly contaminated with blood. Any unfixed tissue or organ (other than intact

skin) from a human (living or dead) and HIV or HBV containing cell or tissue cultures, organ cultures and culture medium are included.
Parenteral - Exposure occurring as a result of piercing the skin barrier.
Personal Protective Equipment (PPE) - Specialized clothing or equipment worn by an employee for protection from a hazard.
Sharps - Any object that can penetrate the skin including, but not limited to, needles, scalpels, and broken capillary tubes.
Sterilize - The use of a physical or chemical procedure to destroy all microbial life including highly resistant bacteria.
Universal Precautions - A method of infection control in which all blood and certain body fluids are treated as if known to be infectious for HIV, HBV, and other bloodborne pathogens.
Work Practice Controls - Controls that reduce the likelihood of an exposure by altering the manner in which a task is performed.

Exposure Determination
The Occupational Safety and Health Administration defines occupational exposure as the "reasonably anticipated" skin, eye, mucous membrane, or parenteral contact with blood or other potentially infectious materials that may result from the performance of an employee's duties.

LANGUAGE
Throughout Baker Group defined and recommended practices, the following words have specific meanings,

"Shall" is used when a provision is mandatory.
"Should" is used when a provision is preferred.
"May" is used when alternatives are equally acceptable.

REQUIREMENTS AND PROCEDURES
Job Classification
First Aid Providers:
- Respond to injuries.
- Administer first aid and/or CPR when needed.
- Use "clean-up kits" to clean contaminated areas.

Personal Protective Equipment (PPE)
All employees of Baker Group that have the potential for occupational exposure shall be provided with the necessary PPE. This includes, but is not limited to, gloves, gowns, laboratory coats, face shields or masks, eye protection, mouthpieces, resuscitation bags, pocket masks or other ventilation devices at no cost to the employee.

Personal Protective Equipment will be considered appropriate only if it does not permit blood or other infectious materials to pass through to or reach the employee's work clothes, street clothes, undergarments, skin, eyes, mouth, or other mucous membranes under normal conditions of use.

PPE Use and Disposal
The following discusses the different types of PPE, their use and disposal methods.

Gloves, Disposable and Utility

- **Use** - Disposable – Shall be put on prior to initiating tasks involving potential exposure. Double glove when possible.
- **Utility** - Shall be used for cleaning and maintenance work.
- **Disposal** - Discard after use. Immediately or as soon as feasible wash hands with running water and soap or antiseptic towelettes.

Face Shield/Goggles

- **Use** - Shall be used if blood or other infectious materials are likely to be splashed, sprayed or splattered.
- **Disposal** -Clean and disinfect.

Face Mask

- **Use** - Shall be used if blood or other infectious materials are likely to be splashed, sprayed or splattered in the mouth or nose.
- **Disposal** -Discard after use.

Gown/Apron

- **Use** - Shall be used if the task to be performed will likely involve contamination of clothing by infectious material.
- **Disposal** - Discard after use.

Head Coverings

- **Use** - Shall be used if the task to be performed is likely to contaminate hair.
- **Disposal** - Discard after use.

Shoe Coverings

- **Use** - When gross contamination can be reasonably anticipated.
- **Disposal** - Discard after use.

Medical Surveillance

Hepatitis B Vaccination

- Employees who have been identified as having occupational exposure to blood must have a Hepatitis B vaccination made available to them within 10 working days of assignment.
- Vaccinations must be given under the supervision of a licensed physician/licensed health care professional, at a reasonable time and place, at no cost to the employee, and according to the latest recommendations of the U.S. Public Health Service (USPHS).
- Prescreening may not be required as a condition of receiving the vaccine.
- Employees must sign a declination statement if they choose not to be vaccinated.
- If such employees choose to receive the vaccination at a later date they must be given the option at no cost to them.
- Should booster doses later be recommended by the USPHS, they must be offered to employees.

Post-Exposure Evaluation and Follow-up

- Employees who have had an exposure must receive a follow-up evaluation from a licensed physician, plus laboratory tests from an accredited laboratory, at no cost to the employee.
- The incident must be documented using a Baker Group Accident Report form.
- Follow-up must include an additional confidential medical evaluation that:
    - Documents the circumstances of the exposure.
    - Identifies and tests the source individual if feasible.
    - Tests the exposed employee's blood (with consent).
    - Provides post-exposure prophylaxis.
    - Provides counseling and evaluation of reported illnesses.

Medical Records

Records for each employee with occupational exposure must be kept for the duration of employment plus 30 years. Records must be kept confidential and include:

- The name of the employee.
- The social security number of the employee.
- The Hepatitis B vaccination status (including dates).
- The results of any examinations, medical testing, or follow-up procedures.
- A copy of the health care professional's written opinion.
- A copy of any information provided to the health care professional.

TRAINING AND COMPETENCY

Training program elements

- General explanation of the epidemiology and symptoms of bloodborne diseases
- Explanation of the exposure control plan and the means by which the employee can obtain a copy of the written plan.
- An explanation of the appropriate methods for recognizing tasks and other activities that may involve exposure to blood and other potentially infectious materials.
- An explanation of the use and limitations of methods that will prevent or reduce exposure including appropriate engineering controls, work practices, and personal protective equipment.
- An explanation that under any circumstances in which differential between body fluids is difficult or impossible, all body fluids will be considered potentially infectious.
- An explanation that either a hand washing facility shall be readily available at all work locations or that antiseptic hand wash/ towelettes will be available for use.

- Information on the types, proper usage, location, removal, handling, decontamination, and disposal of personal protective equipment.
- Information on how blood soaked bandages, etc. are to be placed in leak proof bags/containers for handling, storage and transport.
- Information on the Hepatitis B vaccine, including information of its efficacy, safety, method of administration, the benefits of being vaccinated, and that the vaccine will be offered free of charge.
- Information of the appropriate actions to take and persons to contact in an emergency involving blood or other infectious materials.
- An explanation of the procedure to follow if an exposure incident occurs, including the method of cleaning of equipment and surfaces, method of reporting the incident and the medical follow-up that will be made available.
- Information on the post-exposure evaluation and follow-up that is provided to employees following an exposure incident.

All affected employees will receive initial Bloodborne Pathogen training and on at least an annual basis if required for their job classification. All training will be in accordance with this policy and general requirements of the OSHA standard. All training and assessments must be documented and maintained. Assessments shall be used to determine whether the personnel have the knowledge and have demonstrated skills to safely perform their work assignments.

Retraining and testing shall be required for unsatisfactory/ unsafe performance of job assignments.

SUPPORTING DOCUMENTS

ASSOCIATED DOCUMENTS AND REFERENCE

The following standard is relevant to this practice:

- OSHA – 1910.1030 (Bloodborne pathogens)

Hazard Communication

PURPOSE

To set forth practice requirements and procedures to guide Baker Group's workforce during the handling, storage, and safe use of chemicals to which they are exposed. These requirements will also help to protect property owned by Baker Group and its customers and ensure compliance with applicable regulations.

SCOPE

This practice has been prepared for the Baker Group workforce and applies to work performed on Baker Group or customer premises. This practice may be superseded by equivalent or more stringent host employer, controlling contractor, or regulatory requirements.

ACRONYMS, DEFINITIONS, & LANGUAGE

LANGUAGE

Throughout Baker Group defined and recommended practices, the following words have specific meanings,

"Shall" is used when a provision is mandatory.

"Should" is used when a provision is preferred.

"May" is used when alternatives are equally acceptable.

DEFINITIONS

Absorption - Substance entering body through skin.

Acute exposure - Pertains to a single exposure to a chemical over a short period of time.

Chemical - Any substance, or mixture of substances.

Chemical manufacturer - An employer with a workplace where chemical(s) are produced for use or distribution.

Chronic exposure - Pertains to a repeated exposure over a long period of time.

Corrosives - Chemicals or materials that can burn or damage on contact with the body or in close proximity with the eyes; can also damage the lungs if inhaled (e.g., some cleaners, acids and caustics).

Flammables - Liquids that emit vapors that can ignite, and materials that burn; can also be gases or solids.

GHS – UN Globally Harmonized System of Classification and Labeling of Chemicals

Hazard statement - A statement assigned to a hazard class and category that describes the nature of the hazard(s) of a chemical, including, where appropriate, the degree of hazard.

Hazardous materials - "Any material which is a physical or health hazard, generally including only those materials to which employees may be exposed in their workplaces under normal conditions of use or in foreseeable emergencies."

HAZCOM (Hazard Communications (1910.1200) & (1926.59) – This OSHA standard is to ensure that the hazards of all chemicals produced or imported are evaluated, and that information concerning their hazards is transmitted to employers and employees. Means of communications consist of comprehensive hazard communication program, container labeling, safety data sheets, and employee training.
Immediate use - means that the hazardous chemical will be under the control of and used only by the person who transfers it from a labeled container and only within the work shift in which it is transferred.

Ingestion - Substance entering body through act of swallowing.

Inhalation - Substance entering body through breathing.

Injection - Puncture by an object contaminated with or containing a chemical

Label - An appropriate group of written, printed or graphic information elements concerning a hazardous chemical that is affixed to, printed on, or attached to the immediate container of a hazardous chemical, or to the outside packaging.

Label elements - The specified pictogram, hazard statement, signal word and precautionary statement for each hazard class and category.

Pictogram - A composition on labels containing a black hazard symbol on a white background surrounded by a red border. Eight pictograms are designated under OSHA for application to a hazard category.

Precautionary statement - A phrase that describes recommended measures that should be taken to minimize or prevent adverse effects resulting from exposure to a hazardous chemical, or improper storage or handling.

Product identifier - The name used for a hazardous chemical on a label or in the SDS.

Reactive - Materials that when mixed with certain other materials can react explosively or violently; reaction can cause fire, toxic vapors, or gases.

SDS (Safety Data Sheet) – Device used to inform employers and employees of current and potential hazards of a specific chemical/material.

Signal word - A word used to indicate the relative level of severity of hazard and alert the reader to a potential hazard on the label. The signal words used in this section are "danger" and "warning." "Danger" is used for the more severe hazards, while "warning" is used for the less severe.

Supplier – Business that furnishes or provides an establishment with manufactured products.

Toxics - May poison the body and cause harmful effects under improper exposure; effects can result from immediate or long-term overexposure.

Used - Chemicals that are packaged, handled, reacted, emitted, extracted, generated as a byproduct, or transferred.

RESPONSIBILITIES
Overall responsibility for HazCom, including maintenance, implementation and to review this practice's effectiveness for the organization:
Safety Department – Ankeny, IA
Other Specific Responsibilities of the safety department Include:
Reviewing new or updated SDSs received with product shipments for safety and health implications and compliance with HazCom, including ensuring SDSs are constructed in the proper 16-section GHS-aligned format and initiating communication with personnel who have responsibilities for ensuring employee safety in respective areas of the business.

Contacting the manufacturer to request an updated SDS and document the communication if a required SDS is not included in a shipment, arrives incomplete or inaccurate.

Maintaining and ensuring the system is up-to-date, including the chemical inventory list.

Reviewing the effectiveness of this practice, ensuring that individual labels are reviewed, and making updates as necessary. When updates are necessary, ensuring that employees are retrained on the revised practices.

Obtain SDS (safety data sheets) and maintain chemical inventory.

Provide training for effected employees

Shop Manager, Site Foreman, Purchasing:
Require all suppliers to provide safety data sheets for each chemical it provides Baker Group.
Ensure employees are trained.

Other employees know to approach the employees listed above regarding any issues with chemical container labeling.

Ensuring labels on shipped containers and secondary/workplace containers are accurately labeled in accordance with the requirements of 1910.1200(f) of OSHA's Hazard Communication Standard, and that they are updated and replaced as needed.

Employees:
Understand and follow requirements in the HAZCOM standard
Regularly inspect, read and understand all labels.

Label all secondary containers unless designated for immediate use, used by you alone and within that work shift.

It is the duty of designated Responsible Employees to ensure that whenever roles change, Responsible Employees leave, and/or others replace them, appropriate communication is made to inform employees of their changing role and to ensure that they are aware of this practice and its provisions, and are adequately prepared to implement it.

This Written HazCom Practice is evaluated at least annually and whenever a significant change occurs by the Responsible Employees listed at the beginning of this section, to ensure it is effective and in compliance with OSHA's Hazard Communication Standard.

In addition to scheduled reviews, any incidents, accidents, OSHA inspections, requests from employees or other such events may also trigger a review of the HazCom Practice if determined necessary by the Responsible Employees.

In the event that any review of this practice, annual or otherwise, results in the identification of deficiencies or areas for improvement that merit revision:

Revisions are made and implemented with the intent to not only assure compliance but also employee protection;

Employees are notified of changes and updates, and retrained on the provisions and contents of the revised practice as soon as possible after revisions are finalized;

Retraining is documented.

REQUIREMENTS AND PROCEDURES

Location of Company Hazard Communication Materials

This practice is made available to all employees and their designated representatives (such as union representatives) during work hours, and to representatives from OSHA and NIOSH. It is available both electronically on SDSBinderworks and in hard copy format, as well as by scanning the Binderworks QR codes or contacting the safety department. All Baker Group devices are loaded with the SDS Binderworks application.

Chemical Inventory List

A comprehensive inventory list of every on-site hazardous chemical is appended to the end of this Practice. It should be noted that this list, to the best of our knowledge, contains those chemicals that have been evaluated and subsequently determined or assumed to be hazardous, and does not contain those chemicals determined to be non-hazardous according to OSHA definitions.
This list is dynamic and is updated as needed to account for changes to the physical inventory or changes to the definitions and classifications of chemicals present in the inventory. When a new list is generated, it replaces the preceding list and is appended to the Written Practice. The list is generated using our SDS Binderworks Account. To further enhance the utility of the list, the specific location where a chemical is used or stored in the workplace is also provided.

The chemical inventory, which is accessible to all employees, has the following characteristics:

It includes chemicals used in the course of business, any chemicals used by ancillary departments (landscaping, maintenance, facilities, etc.), and chemicals that are not currently in use but still stored on-site.

It identifies all chemicals using identifiers that align with those on their corresponding SDSs and workplace container labels.

It includes all chemicals present, including those that are both stored and actively used.

It is updated whenever a new chemical is brought on-site or when a chemical is moved off-site.

It is updated to account for chemicals in the existing inventory that are newly found to be hazardous or not hazardous according to manufacturer, distributor or importer HazCom chemical classifications.

Safety Data Sheets

Safety data sheets are maintained for all hazardous chemicals present at Baker Group, and all employees covered by the Standard have unobstructed access to the necessary SDSs in their work areas, during their work shifts, satisfying employee right-to-know requirements.

Safety data sheets are managed electronically using cloud-based SDS Online chemical management software. Employee right-to-know access is provided through our SDS Binderworks Account via desktop web browser, or through hard copies that can be emailed or faxed to the location of the request. All employees have access to our library, referred to in our SDS Binderworks Account as the eBinder.

Our library backup is available through use of the SDS Online web-based service, and/or use of hardcopy printouts of SDSs, which are stored in binders and are accessible via email or fax to the location of the request.

Labeling

All containers with a shipped label shall retain their compliant shipped label unless otherwise removed and replaced with another shipped container label or compliant secondary / workplace label. Our secondary/workplace labeling system is based on or incorporates GHS schemes and elements.

SDS Binderworks is used to generate GHS-aligned secondary container labels using information derived from the HazCom compliant shipped labels and SDSs for the corresponding chemicals.

Secondary container labels are required to be affixed to every container where manufacturer-original shipped labels have become illegible, or removed and no replacement shipped labels are available, or where hazardous chemicals are being decanted or otherwise transferred from an original manufacturer-provided container into an alternative container. For example: Following the portable container labeling exemption of the Standard, secondary container labels are not required when containers and their contents will be used immediately by the individual performing the transfer, with no possibility of other employees encountering the unlabeled containers while hazardous chemicals are present inside.

Labels are prominently and clearly displayed in English Supplemental information in other languages, in addition to English is provided as needed to account for multilingual needs of our diverse workforce. Container labels are kept legible and are capable of being seen without additional visual aid (this excludes corrective lenses and contacts).

Baker Group is responsible for ensuring that all jobsite containers and shipped containers of chemicals that belong to Baker Group are properly labeled in the new GHS format. All labels will be easy to read, and prominently displayed. Each label will include all six elements of a GHS label:

- Product Identifier
- Signal Word
- Pictograms

- Hazard Statements
- Precautionary Statements
- Manufacturer Information

Hazardous Non-routine Tasks

Occasionally, employees are required to perform non-routine tasks. These are generally tasks that don't occur frequently. Tasks can still count as non-routine even if a specific employee is assigned to handle them. (For example, once a year an employee might have to go in and clean a sand filter, or an employee might be required to fix a pump seal whenever it breaks, which might occur at infrequent, random times.) Prior to starting work in areas with hazards posed by non-routine tasks, each employee is given information about the hazards of the area or procedure. This information includes:

- Specific chemical hazards
- Protection/safety measures the employee can take to reduce risk while performing the task
- Measures the company has taken to eliminate or control the hazard, including, where applicable:
- Air monitoring
- Ventilation requirements
- Use of attendants to observe procedures
- Emergency procedures

Examples of non-routine tasks that may be performed (such as infrequent repair activities, equipment-specific chemicals, oils, lubricants, etc.)

It is the policy of Baker Group that no employee begin performance of a non-routine task without first receiving appropriate safety and health training. Training content and methods are outlined in the "Training" section of this practice.

Pipes and Piping Systems

Information on the hazardous contents of pipes and piping systems (if any) is identified by: label, sign, placard or other clearly identifiable means.

Visiting Employees, Contractors and Temporary Workers

It is the policy of Baker Group that no visiting employees, contractors and temporary workers are to begin working at Baker Group until they have satisfactorily completed training in the hazards of the chemicals they will be working with, and in general safety policies of Baker Group. This will be accomplished through web-based/etraining, or in-person training. Records of said training will be maintained by the Safety Department.

All employees, including any visiting employees, contractors or temporary workers, are informed of how to access SDSs, container labeling system(s) in place, the workplace chemical hazards present, and the relevant precautionary measures to take related to chemical safety and HazCom compliance using SDS Binderworks.

Whenever visiting employees bring hazardous chemicals requiring an SDS onto the premises, that hazard information and corresponding SDS shall be obtained in advance of the chemical(s) arriving on-site by the

supervisor of that particular facility or jobsite and may be added to a temporary, site-specific inventory list, and subsequent employee training is provided as needed.

Multi – employer work sites

Each employer on a multi-employer work site will receive a copy of Baker Group hazard communication program and will invite each employer to access SDS at any time through either SDS Binderworks site or our QR code that directs them to our SDS database including the location of our SDS on the jobsite. When accessing our SDS database, not limited to the following but may include, methods to inform other employers on the labeling process and what precautionary measures need to be taken to protect other employees during normal operations.

The hazard communication program states that affected employers can access Baker Group SDS. Baker Group shall also request from other employers on site a copy of their hazard communication program, including their chemical information list.

TRAINING AND COMPETENCY

Employees at Baker Group are trained on all required elements of the HazCom Standard, Written HazCom Practice, SDSs, workplace labels, and in the proper storage, handling and use of chemicals in their work environments. Chemical training covers detection and symptoms, safety procedures, required PPE, and all physical and health hazards associated with the chemical(s). Training also covers the 16-section format of SDSs and relevant information found in each section, the components of a compliant shipped label, the workplace labeling system, and the pictograms adopted by OSHA following alignment of its HazCom Standard in 2012 with the United Nations' GHS. Table 1 HCS Pictograms & Hazards, shows the GHS pictograms and corresponding hazards adopted by OSHA. Employees are trained on these pictograms and the hazards they represent, and are retrained as needed. This can be found in Appendix A of this written practice.

Specific training is also provided to those employees who receive shipments of hazardous chemicals, requiring them to check that an SDS is provided for each new or next shipment received from a supplier, and that any SDS received from a supplier is accurate and complete, and that procedures described in the "SDS" section of this HazCom Written Practice are followed if it is determined that a document is inaccurate or missing from a shipment.

SUPPORTING DOCUMENTS

ASSOCIATED DOCUMENTS AND REFERENCE

The following practices contain relevant content to this practice and should be consulted to support the implementation of the requirements outlined in this practice.

OSHA Hazard Communication Standards 1910.1200 and OSHA 1926.59.

OSHA Hexavalent Chromium Standards 1910.1026 and 1926.1126.

UN GHS

Hazardous Materials

PURPOSE

This policy and procedure apply to all Baker Group employees, subcontractors, and lower-tier subcontractors that work for our company who may be exposed to asbestos, lead(paint), silica, hexavalent chromium (Cr VI) Beryllium, and cadmium. Where states OSHA agencies may have more stringent requirements; contact the safety department to address these specific requirements.

SCOPE

This practice has been prepared for the Baker Group workforce and applies to work performed on Baker Group or customer premises. This practice may be superseded by equivalent or more stringent host employer, controlling contractor, or regulatory requirements. This program applies when employees may be exposed to asbestos, lead (paint), silica, and hexavalent chromium (Cr VI), Beryllium, and cadmium due to the following examples:

- Potential asbestos or lead exposure activities include the demolition or removal of piping, insulation, ceiling tile, floor tiles, and disturbing painted surfaces, etc. in buildings built prior to 1970.
- Potential silica exposure while cutting, chipping, or drilling silica containing material such as concrete, brick, or stone.
- When performing hot work, such as welding on stainless steel or Cr VI painted surfaces, paint removal containing Cr VI, or soil disturbance activities, such as drilling or from heavy equipment moving on soils containing Cr VI soils.

These are only a few examples, contact the safety department if you have questions or concerns regarding hazardous materials.

ACRONYMS, DEFINITIONS AND LANGUAGE

LANGUAGE

Throughout Baker Group defined and recommended practices, the following words have specific meanings:
"Shall" is used when a provision is required.
"Should" is used when a provision is preferred.
"May" is used when alternatives are equally acceptable

DEFINITIONS

Asbestos – a fibrous incombustible magnesium and calcium silicate used in thermal insulation; its dust causes asbestosis and acts as an epigenetic carcinogen for pleural mesothelioma.
Asbestos containing material (ACM) – any material containing more than one percent asbestos.
TWA – time weighted average
Authorized Person – means any person authorized by Baker Group and required by work duties to be present in regulated areas.
Building / facility owner – the legal entity including a lessee who exercises control over management and record keeping functions relating to a building and/or facility in which activities covered by this standard take place.
Certified Industrial Hygienist (CIH) – an individual certified in the practice or industrial hygiene by the American Board of Industrial Hygiene.
Competent Person – any employee who is capable of identifying existing hazards in the workplace and selecting the appropriate control strategy for hazard material exposure, who has the authority to take prompt corrective measures to eliminate them.

Lead – metallic lead, all inorganic lead compounds, and organic lead soaps. Excluded from this definition are all other organic lead compounds.
Regulated area – an area established by Baker Group to demarcate areas where class I, II, and III asbestos work is conducted, and any adjoining area where debris and waste from such asbestos work accumulate; and a work area within which airborne concentrations of asbestos exceed or there is a reasonable possibility they will exceed the permissible exposure limit.
Removal – all operations where hazardous material is taken out or stripping from structures or substrates, and includes demolition operations.
Renovation – the modifying of any existing structure or a portion of the structure.
Repair – overhauling, rebuilding, reconstructing, or reconditioning of structures or substrates including encapsulations.
Fiber - a particulate form of asbestos, 5 micrometers or longer, with a length-to-diameter ratio of at least 3 to 1.
Employee exposure – exposure to airborne particulates / fumes would occur if the employee were not using respiratory protective equipment.
Equipment Room (change room) – a contaminated room located within the decontamination area that is supplied with impermeable bags or containers for the disposal of contaminated protective clothing and equipment.
Decontamination Area – means an enclosed area adjacent and connected to the regulated area and consisting of an equipment room, shower area, and clean room, which is used for the decontamination of employees, materials, and equipment that are contaminated with a hazardous material.
Demolition – the wrecking or taking out of any load-supporting structural member and any related razing, removing, or stripping of hazardous products / materials.
Lead action level – exposure to a level of airborne contamination that requires an employer to implement some, but not all, of the surveillance and control activities of an OSHA standard. The action level is usually equal to one-half of the permissible exposure level. An exception is the action level for lead, which is 30 micrograms per cubic meter of air as compared to the permissible exposure limit of 50 micrograms per cubic meter of air.
Silica Dust – a type of dust from silica (crystalline quartz) that causes breathing problems in workers in the fields of mining, stone cutting, quarrying (especially granite), blasting, road and building construction industries that manufacture abrasives, and farming. Breathing the dust causes silicosis, a severe disease that can scar the lungs.
Silica dust PEL - .05 milligrams per cubic meter of air in an eight-hour period.
Cr VI – hexavalent chrome
Cr VI Action Level (AL) – the action level for implementation of this program is a concentration of airborne Cr VI of 2.5 micrograms per cubic meter (2.5µg/m^3) of air calculated as an 8-hour time weighted average.
Chromium VI or Hexavalent Chrome – chromium with a valence of positive six, in any form and in any compound.
Emergency Cr VI release – any activity that results or is likely to result in an uncontrolled release of Cr VI. If an incidental release of Cr VI(measured at or below the Permissible Exposure Limit) can be controlled at the time of release by workers in the immediate release area, it is not an emergency.
Worker exposure – the exposure to airborne Cr VI that would occur if the worker was not using respiratory protection.
High-Efficiency Particulate (HEPA) Filter – Filter that is at least 99.97 percent (%) efficient in removing mono-dispersed particles of 0.3 micrometers (µg) in diameter or larger.
Historical Monitoring Data – hexavalent chromium exposure assessment monitoring conducted prior to May 30 2006, obtained during work operation conducted under workplace conditions closely resembling the

processes, types of material, control methods, work practices, and environmental conditions in the employer's current operations.
Objective Data – information such as air monitoring data from industry-wide surveys or calculations based on the composition or chemical and physical properties of a substance demonstrating the worker exposure to Cr VI associated with a particular product or material or a specific process, operation, or activity. The data must reflect workplace conditions closely resembling the processes, types of material, control methods, work practices, and environmental conditions in the employer's current operations.
Permissible Exposure Limit Cr VI (PEL) – the level of worker exposure to an airborne concentration of Cr VI, without regard to the use of respirators at 5 micrograms per cubic meter of air (5μg/m^3) calculated as an 8-hour time weighted average that cannot be exceeded.

REQUIREMENTS AND PROCEDURES

Asbestos

In the construction industry, asbestos is found in installed products, such as shingles, floor tiles, cement pipe and sheet, roofing felts, insulation, ceiling tiles, fire-resistant drywall, and acoustical products. Very few asbestos-containing products are currently being installed. Consequently, most worker exposures occur during the removal of asbestos and the renovation and maintenance of buildings and structures containing asbestos.

Asbestos fibers enter the body by the inhalation of ingestion of airborne particles that become embedded in the tissues of the respiratory or digestive systems. Exposure to asbestos can cause disabling or fatal diseases, such as asbestosis, an emphysema like condition; lung cancer; mesothelioma, a cancerous tumor that spreads rapidly I the cells of membranes covering the lungs and body organs; and gastrointestinal cancer. The symptoms of these diseases generally do not appear for 20 or more years after initial exposure.

In 1994, OSHA revised its asbestos standard for the construction industry. This revision lowered the PEL to 0.1 fibers per cubic centimeter of air. This means that Baker Group must ensure that no employee is exposed to an airborne concentration of asbestos in excess of 0.1 fibers per cubic centimeter of air as an 8-hour time weighted average. OSHA also established a short-term exposure limit (STEL) for asbestos. Baker Group must ensure that no employee is exposed to an airborne concentration of asbestos in excess of 1 fiber per cubic centimeter of air as averaged over a sampling period of 30 minutes.

It is Baker Group policy not to engage in any asbestos removal "abatement". If an employee encounters an asbestos exposure or potential exposure, they are to report it immediately to their foreman, who in-turn will report it directly to the safety department and project manager. The project manager will notify the owner and/or general contractor. Once the asbestos of potential asbestos is recognized, all work in that immediate area will be discontinued until the Baker Group safety department gives written approval. We are not to subcontract any asbestos removal unless the safety department and/or division manager approves it it is the responsibility of the owner or general contractor to provide for asbestos abatement.

Exposure

Baker Group must provide a medical surveillance program for all employees:

- Who for a combined total of 30 or more days per year – engage in class I, II, or III work or are exposed at or above a PEL or STEL; or who wear negative-pressure respirators.
- A licensed physician must perform or supervise all medical exams and procedures, provided at no cost to employees and at a reasonable time.

Baker Group will make medical exams and consultations available to:

- Employees prior to employee assignment to an area where negative-pressure respirators are worn.
- At least annually thereafter; when the examining physician suggests them more frequently.
- If an employee was examined within the past 12 months and that exam meets the criteria of the standard; another medical exam is not required.

Medical exams will include:

- A medical work and work history
- Completion of a standardized questionnaire with the initial exam and an abbreviated standardized questionnaire with annual exams.
- A physical exam focusing on the pulmonary and gastrointestinal systems.
- Any other exams or test suggested by the examining physician.

Baker Group will provide the examining physician:

- A copy of OSHA's asbestos standard and its appendices
- A description of the affected employee's duties relating to the exposure
- The employee's representative exposure level or anticipated exposure level
- A description of any personal protective equipment and respiratory equipment used
- Information from previous medical exams not otherwise available

It is the responsibility of Baker Group to obtain the physician's written opinion, containing results of the medical exam and:

- Any medical conditions of the employee that increase health risks from asbestos exposure
- Any recommended limitations on the employee or protective equipment used.
- A statement that the employee has been informed of the results of the medical exam and any medical conditions resulting from asbestos exposure.
- A statement that the employee has been informed of the increased risk of lung cancer from the combined effect of smoking and asbestos exposure.
- The physician must not reveal in the written opinion specific findings or diagnoses unrelated to occupational exposure to asbestos. Baker Group will provide a copy of the physician's written opinion to the affected employee within 30 days after receipt.

Recordkeeping

Baker Group shall keep records of all employee exposure monitoring for at least 30 years, including:

- The date of measurement
- The operation involving asbestos exposure that was monitored.
- Sampling and analytical methods used and evidence of their accuracy
- The number, duration, and results of samples taken
- The type of protective devices worn
- The name, social security number, and exposures of the represented employees
- Baker Group shall make exposure records available, when requested, to affected employees, former employees, their designated representatives, and/or OSHA's assistant secretary.

Baker Group will keep all medical surveillance records for the duration of the employee's employment plus 30 years, including:

- The employee's name and social security number

- The employee's medical exam results, including the medical history, questionnaires, responses, test results, and physician's recommendations.
- The physician's written opinions
- Any employee medical complaints related to asbestos exposure
- A copy of the information provided to the examining physician
- Employee medical surveillance records shall be available to the subject employee, anyone having specific written consent of that employee, and/or OSHA's assistant secretary
- Baker Group shall maintain all employee training records for one year beyond the last date of employment for each employee.

Lead

Lead adversely affects numerous body systems and causes forms of health impairment and disease that arise after periods of exposure as short as days (acute exposure) or as long as several years (chronic overexposure). A short-term dose of lead exposure can lead to acute encephalopathy, a condition affecting the brain that develops quickly into seizures, coma, and death from cardiorespiratory arrest. Short term occupational exposures of this type are highly unusual, but not impossible. Similar forms of encephalopathy, however, may arise from extended chronic exposure to lower doses of lead. Consequently, there is no sharp distinction between rapidly developing acute effects of lead and longer chronic effects.

Long-term overexposure to lead may result in severe damage to the blood-forming, nervous, urinary, and reproductive systems. Damage to the central nervous system in general and the brain in particular is one of the most severe forms of lead poisoning. It can also significantly impair the reproduction systems in both men and women.

If an employee suspects potential exposure, they are to report it immediately to the foreman, who will in-turn report it directly to the project manager, who in turn contacts the safety department. It is the project manager's responsibility to notify the owner and/or general contractor. Once the lead or the material that looks like lead is recognized, all work in the immediate area shall discontinue until the material can be tested. This does not include the exposure of pouring lead joints.

If we are required to disturb any lead-based paint, Baker Group will implement engineering and work practice controls in order to reduce and maintain employee exposure to lead at or below the permissible exposure limit. Where the above controls are not sufficient to reduce the employee exposure, these controls shall be supplemented by the use of personal protective equipment.

Lead abatement

Baker Group will NOT perform lead abatement activities.
Lead abatement activities will include any of the following:

- Demolition or salvage of structures where lead or materials containing lead are present
- Removal or encapsulation of materials containing lead

In the event a project requires lead abatement activities, the project manager will find an appropriate vendor, licensed in the state where the work will be performed, as required to conduct the abatement.

Installation of materials containing lead

Baker Group will make every attempt to not install materials containing lead.

In the event this is not possible, the project manager will notify the safety department of upcoming work requiring materials made of lead. The project manager and safety department will develop a protection plan to ensure no employee is exposed to lead concentration greater than 40µg/m^3.

Incidental Exposure
In the event a Baker Group employee is found to have been exposed to lead above 40µg/m^3, the exposed employee will be referred to an appropriate medical facility for medical evaluation. The medical evaluation will include, at a minimum, the following examinations:

- A medical examination to include detailed work and medical histories, with particular attention to past lead exposure (both occupational and non-occupational), personal habits (e.g. smoking and hygiene), and past gastrointestinal, hematological, renal, cardiovascular, reproductive, and neurological problems.
- A thorough physical exam with particular attention to gums, teeth, gastrointestinal, hematological, renal, cardiovascular, reproductive, and neurological systems.
- A blood pressure measurement
- A blood sample and analysis to determine blood lead level, hemoglobin, and hematocrit determinations, red cell indices and an exam of peripheral smear morphology, zinc protoporphyrin, blood urea nitrogen, and serum creatinine.
- A routine urinalysis with microscopic exam
- Other tests as determined by the physician

The exposed employee will be re-evaluated after two months:

- In the event the blood lead level is below 40µg/dl, no further re-evaluation is needed.
- If the blood lead level remains above 40µg/dl, the exposed employee will be re-evaluated every six months thereafter until a blood test reveals a blood lead level of below 40µg/dl.

The Baker Group safety director will provide all treating physicians with a copy of the OSHA Lead standard.

Disposal of Lead Containing Materials and Waste
Baker Group shall coordinate with local and/or state authorities to determine the proper procedures for disposal of lead containing materials. All lead waste shall be stored in properly marked, sealed containers in accordance with local jurisdiction requirements while awaiting transportation.

Working in Regulated Areas
Per State and Federal laws, areas where children reside must be protected against potential lead exposure during renovation activities. These areas include, but are not limited to, residences (including apartments), preschool facilities, and kindergarten schools. The project manager must notify the safety department prior to any work in these facilities which may disturb more than six square feet of paint.

Silica

Recognizing potential hazards is key in preventing and minimizing the effects of silica exposure. Long-term exposure to crystalline silica can lead to silicosis, which is a disabling, nonreversible and sometimes fatal lung disease. This section of the policy highlights these hazards and addresses specific requirements that all Baker Group employees must follow.

Probable use of silica
In construction, worker exposure to silica is of particular concern because silica is the primary component of many construction materials. Some commonly used construction materials containing silica include:

- Abrasives used for blasting
- Brick, refractory brick
- Concrete, concrete block, cement, mortar
- Granite, sandstone, quartzite, slate
- Mineral deposits
- Rock and stone
- Sand, fill dirt, top soil
- Asphalt containing rock or stone

Many construction activities can generate airborne silica-containing dust. Activities that generate airborne dust include, but are not limited to, the following:

- Chipping, hammering, and drilling of rock
- Crushing, loading, hauling and dumping of rock
- Sawing, hammering, drillings, grinding, and chipping of concrete or masonry structures
- Demolition of concrete and masonry structures
- Dry sweeping or pressurized air blowing of concrete, rock, or sand dust
- Sweeping, cleaning, and dismantling equipment
- Tunneling, excavation, and earth moving of soils with high silica content

Prevention / Protection
Baker Group employees are required to use engineering controls when possible while performing tasks that create silica exposure. Engineering controls include:

- Wet down the dust with a water hose at point of generation
- Install local exhaust ventilation
- Install dust collection systems onto machines or equipment that generates dust (e.g. HEPA filter).
- Use concrete/masonry saws and coring machines that provide water to the blade.

When engineering controls don't offer adequate protection, contact the safety department. Employees may have to be fitted with a respirator and have a site specific safety training.

Employee knowledge
Baker Group employees shall be trained to recognize potential hazards associated with Silica. Guidelines for the training shall include:

- Identification
- Prevention
- Disposal

<u>Hexavalent Chrome</u>
Baker Group employees can potentially be exposed to hexavalent chromium in many different scenarios. Industrial uses of hexavalent chromium compounds include chromate pigments in dyes, paints, inks, and plastics; chromates added as anticorrosive agents to paints, primers, and other surface coatings; and chromic acid electroplated onto metal parts to provide a decorative or protective coating.

Hexavalent chromium can be formed when performing “hot work”, such as welding on stainless steel or melting chromium metal. In this situation, the chromium is not originally hexavalent, but the high temperatures involved in the process result in oxidation that converts the chromium to a hexavalent state.

Occupational exposures occur mainly among employees who handle pigments containing dry chromate, spray paints and coatings containing chromate, operate chrome plating baths, and weld or cut metals containing chromium, such as stainless steel.

Baker Group employees who breathe hexavalent chromium compounds at their jobs for many years may be at increased risk of developing lung cancer. Breathing high levels of hexavalent chromium can irritated or damage the nose, throat, and lungs. Irritation or damage to the eyes and skin can occur if hexavalent chromium contacts these organs in high concentrations or for prolonged periods of time.

Exposure determination

- Initial exposure monitoring must be conducted to document worker breathing-zone exposures over the course of a full shift.
- A representative eight-hour TWA sample shall be collected to determine employee exposure for each job classification in each work area.
- Air monitoring will be performed at the beginning of each job task.
- Exposure determinations must follow the current, accepted sampling and analytical method equivalent to that used by OSHA.
- Sample media used for Cr VI monitoring will be analyzed using an industrial hygiene laboratory accredited by the American Industrial Hygiene Association (AIHA). An equivalent laboratory accreditation can be substituted in countries that do not have and AIHA-accredited industrial hygiene laboratory.
- Periodic monitoring of workers is required at least every six months when the initial monitoring indicates TWA results are equal to or greater than the Action Level (AL) but below the PEL.
- When initial monitoring results are greater than the PEL, additional periodic monitoring, at least quarterly, for each worker involved is required.
- Periodic monitoring every six months or quarterly may be halted when two consecutive samples take at least seven days apart are equal to or below the AL.
- When monitoring results fall below the AL, monitoring may be suspended.
- Additional monitoring is required when there has been a change in production process, control equipment, personnel, or work practices that may result in new or additional exposures.
- A performance-oriented option may be used to determine the initial eight-hour TWA exposure for each worker on the basis of any combination of air monitoring data, historical monitoring data, or objective data sufficient to accurately characterize exposure to Cr VI.
- Workers shall be informed in writing of exposure monitoring results within five working days after receipt of the results.
- When the PEL has been exceeded, notification to the affected worker shall include the control measures utilized to reduce the exposure to below the PEL.

Methods of Compliance

Engineering and work practice controls must be applied to reduce the Cr VI worker exposure level to below the OSHA PEL unless it can be demonstrated that such controls are not feasible. Rotating employees to different jobs shall not be used to achieve compliance with the PEL. Methods of compliance in the hierarchy of controls include the following:

- Substitution – gas tungsten arc welding (GTAW) instead of shielded metal arc welding (SMAW) or flux cored arc welding (FCAW).
- Engineering Controls – mechanical ventilation to remove fumes from the breathing zone.
- Administrative Controls – safe work practices for the worker on proper positioning to minimize fume trail in their breathing zone, either through positioning upwind in an open area or in proper alignment with ventilation controls.
- Personal Protective Equipment (PPE) – use of respiratory protection as the last resort in reducing exposure or as an interim measure until substitution can be applied or engineering controls installed.

Respiratory Protection

Where engineered controls are infeasible, respiratory protection will be provided by Baker Group and worn by the worker sufficient to reduce the exposure to below the Cr VI action level. Respiratory protection will be used only as a last resort to endure that worker exposure to Cr VI is maintained below the action level, or as an interim measure while applying substitution of materials or processes, implementation of work practice controls, or installation of mechanical ventilation. When employee exposures are above the PEL for no more than 30 days per year (12 Consecutive months) from a particular process or task, respiratory protection can be primarily relied upon to ensure employee exposure is maintained below the PEL. The elements of the respiratory protection program must comply with Baker Group's respiratory protection policy.

Personal Protective Equipment (PPE) and Working Clothing

Personal protective equipment and work clothing shall be provided to workers where an eye or skin hazard may exists to Cr VI at no cost to them. The elements of the PPE and work clothing program must comply with Baker Group's PPE Policy and eye and face protection. Key elements for an appropriate protective work clothing program are highlighted in Baker Group's PPE policy and procedure.

Hygiene Areas and Practices

Where work clothing is required to be worn in place of street clothing to prevent skin exposure to Cr VI, change rooms and washing facilities must be provided. Change rooms must include separate storage facilities for work clothing and for street clothes. Washing facilities must be readily accessible to workers, and must be used by them at the end of the work shift and prior to eating, drinking, smoking, chewing tobacco or gum, applying cosmetics, or using the toilet. An area on the worksite must be designated to be free of Cr VI for workers to consume food or beverages.

General Work Practices and Housekeeping

Work areas or project sites where Cr VI can potentially expose workers must implement and follow work practices to maintain acceptable housekeeping conditions to minimize contact or exposure. General work practices and housekeeping must include the following:

- All surfaces must be maintained as clean as practicable to minimize accumulation of Cr VI containing substances, dust, or particles.
- All spills and releases of Cr VI containing material must be cleaned up promptly.
- Surfaces contaminated with Cr VI must be cleaned with HEPA-filter vacuuming or equivalent methods or practices that minimize the potential for worker exposure.
- Avoid using compressed-air, dry shoveling, dry sweeping, or dry brushing, and use only when a HEPA-filter vacuum system or equivalent method has been tried and found to be not effective.

- Collection of waste, scrap, debris, or other materials contaminated of containing Cr VI must be in impermeable containers or bags and labeled meeting hazard communication requirements described in Baker Group's hazard communication.

- Waste containing significant amounts of chromium may be subject to hazardous waste regulations and the corresponding generation, treatment, and disposal requirements.

Medical Surveillance

Employees who are or will be potentially exposed to Cr VI above the action level for at least 30 days per year, without regard to respirator use, will participate in Baker Group's Cr VI medical surveillance program. Further participation in periodic Cr VI medical surveillance will be based on exposure conditions (such as an emergency or when a worker shows signs or symptoms of exposure),conducted annually, or within a specified frequency determined by a consulting physician (or equivalent), and at termination of employment.

Subcontractors are responsible for their workers receiving medical surveillance for Cr VI as required by regulatory requirements, contract, or their own company's requirements.

Training Requirements

Workers who may be exposed to airborne Cr VI above the action level (or anticipate working on projects where they could be exposed to airborne Cr VI above the action level), or to soil that contains elevated levels of Cr VI, must complete initial Cr VI exposure training. This training covers the following information:

- Where Cr VI is typically encountered at Baker Group projects
- The regulatory requirements, exposure limits, potential hazards including toxicity and physical characteristics, and medical monitoring requirements.
- For site-specific Cr VI hazards, discussion on the location and tasks associated with potential exposure and associated control measures.
- Information contained in the site-specific health, safety, and environmental protection plan or job hazard analysis created for the project.
- Quantity, location, manner of use, storage, sources of exposure, and the specific nature of operations that could result in exposure to Cr VI, as well as any necessary protective steps.
- Purpose, proper use, and limitation of respirators
- Purpose and a description of the medical surveillance program
- Engineering controls and work practices associated with the employee's job assignment.
- A review of this program
- Each worker must be provided with a copy of the OSHA Chromium Standard (general industry and/or construction) and appendices if requested.

Beryllium

Beryllium parts will and shall be transported/stored in containers labeled with Beryllium (Beryllium Oxides) or contains Beryllium. Cutting, grinding, hot work or other operations that will oxidize, or make airborne shall require the use of a respirator and gloves. Acute exposure to high concentrations of beryllium can result in chemical pneumonia. Long-term exposure can result in shortness of breath, chronic cough, and significant weight loss, accompanied by fatigue and general weakness. Contact Safety Team prior to working with Beryllium to be trained in hazards of exposure.

Cadmium
A respirator is required for hot work when using cadmium containing rods/wire or when working on cadmium plated parts. Spaces for hot work with cadmium or operations that create airborne cadmium must be evaluated by safety prior to starting work. Dust must be vacuumed or wet mopped. Acute exposures to high concentrations of cadmium fumes can produce sever lung irritation. Long-term exposure to low levels of cadmium in air can result in emphysema (a disease affecting the ability of the lung to absorb oxygen) and can damage the kidneys. Contact Safety Team prior to working with Cadmium to be trained in hazards of exposure.

Hazardous Material Recordkeeping
An accurate record of all worker personal air sampling and other air monitoring related to determining Hazardous Material exposure for Baker Group employees must be completed and maintained that includes the following:

- Industrial hygiene sampling surveys
- Specific information on the sample date, worker(s) sampled, job classification, process or task sampled, materials used, PPE worn, sample duration, air sampling, and analytical method.

For historical monitoring data, an accurate record of the determination must include the following information:

- Confirmation that the data was collected using acceptable sampling and analytical methods
- Description of the process that matches the task, conditions, materials, equipment, an process for which the exposure is being determined

For objective data, an accurate record of information that is relied upon to determine worker exposure must include the following information:

- The type of hazard containing material
- Description of the process, activity, or operation

Exposure assessment records related to hazardous materials highlighted in this program, including worker personal air sampling, historical monitoring data, and objective data must be maintained for a minimum of thirty years. Copies of exposure assessment records for Baker Group employees are to be forwarded to Baker Group's safety department. Medical monitoring records to hazardous materials must be maintained for each employee for thirty years beyond their duration of employment. Medical monitoring records will be retained in the employee's medical file and maintained by Baker Group's safety department.

Benzene Awareness

PURPOSE

The following awareness level Benzene Safety Program has been established by Baker Group to guide Baker Group's workforce engaged in activities that might expose workers to Benzene and to comply with applicable local, state, and federal regulations. This written program is available for affected employee or employee representative inspection, and upon request for examination or copying by an auditing or regulatory agency.

SCOPE

This program has been prepared for the Baker Group workforce and applies to work performed at Baker Group Facilities (Fabrication Shops) or Jobsites (customer premises). This program may be superseded by equivalent or more stringent host employer, controlling contractor, or regulatory requirements.

ACRONYMS, DEFINITIONS, & LANGUAGE

DEFINITIONS

Benzene (C_6H_6) – Liquefied or gaseous benzene. It includes benzene contained in liquid mixtures and the benzene vapors released by these liquids. It does not include trace amounts of unreacted benzene contained in solid materials.

Permissible Exposure Limit (PEL) – Time weighted average limit (TWA). The employer shall assure that no employee is exposed to an airborne concentration of benzene in excess of one part of benzene per million parts of air (1 ppm) as an 8-hour time weighted average.

Short-term exposure limit (STEL) – the employer shall assure that no employee is exposed to an airborne concentration of benzene in excess of five (5) ppm as averaged over any 15 minute period.

LANGUAGE

Throughout Baker Group defined and recommended practices, the following words have specific meanings,

"Shall" is used when a provision is mandatory.

"Should" is used when a provision is preferred.

"May" is used when alternatives are equally acceptable.

REQUIREMENTS AND PROCEDURES

Benzene (C_6H_6) is a highly flammable, colorless liquid with a sweet odor. Because of the distinctive smell and related compounds, the benzene family is classified as "aromatic"; thus, the name aromatic hydrocarbon. Benzene vapors are heavier than air and may travel to a source of ignition and flash back. The vapors are readily dispersed by wind movement and/or air currents. Benzene evaporates into the air very quickly and dissolves slightly in water. Its highly flammable liquid property allows benzene to accumulate static electricity. Fire extinguishers must be readily available for use and all sources of ignition must be controlled.

Storage

Hydrocarbon liquids and vapors, such as Benzene, are normally contained by designed closed systems consisting of reactors, towers, process piping, vessels, or stored in closed tanks, drums, barrels, cylinders, bottles, and cans in cool well-ventilated areas. Smoking shall be prohibited in areas where benzene is stored or used.

Locations

Benzene can be found in: Refineries, Tank gauging, and oil and gas related field operations including maintenance work tasks. Industries that make or use benzene such as; petrochemicals, petroleum refining, and coke and coal chemical manufacturing, rubber tire manufacturing, and storage or transport of benzene and petroleum products containing benzene.

Prior to any Baker Group employee entry into an assigned work location, the host-facility operator will have conducted tests to determine the actual presence of benzene, or identified a potential area where benzene could be reasonably expected to be encountered. Baker Group management is accountable for informing employees of the location of potential benzene exposures. The host-facility is accountable for identifying the locations where benzene containing materials are used and for informing employees of their contingency plans along with the awareness of general plant safety rules, including evacuation.

Toxicity

Airborne the maximum time-weighted average (TWA) exposure limit is 1 part of benzene vapor per million parts of air (1ppm) for an 8-hour workday and the maximum short-term exposure limit (STEL) is 5 ppm for any 15-minute period. Dermal contact with liquid benzene may lead to irritation.

Health Effects

Benzene is harmful to the eyes, skin, airway, nervous system, and lungs.

Overexposure effects include:

- Short-term (Acute): overexposed to high concentrations of benzene, well above the levels where its odor is first recognizable, may feel breathless, irritable, euphoric, or giddy. May experience irritation in eyes, nose, and respiratory tract. Symptoms such as headache, dizziness, nausea, and feeling of intoxicated my develop. Severe exposures may lead to convulsions and loss of consciousness.
- Long-term (chronic): Repeated or prolonged exposure to benzene, even at relatively low concentrations, may result in various blood disorders, ranging from anemia to leukemia, an irreversible, fatal disease. Many blood disorders associated with benzene exposure may occur without symptoms.

First – Aid Measures

- Inhalation – immediately remove from further exposure. Get immediate medical assistance.
- Skin contact – wash contact areas with soap and water. Remove contaminated clothing. Launder contaminated clothing before reuse.
- Eye contact – flush thoroughly with water for at least 15 minutes. Get medical assistance.
- Ingestion – Seek immediate medical attention. Do NOT induce vomiting.

Personal Protective Equipment (PPE)

Personal protective equipment selections vary based on potential exposure conditions such as applications, handling practices, concentration, and ventilation. Information on the selection of protective equipment for use with this material, as provided below, is based upon intended, normal usage.

Respiratory Protection: if engineering controls do not maintain airborne contaminant concentrations at a level which is adequate to protect worker health, an approved respirator may be appropriate. Respiratory respirators to be considered for this material include half-face filter respirator. For high airborne concentrations, use an approved supplied-air respirator, operated in positive pressure mode. Supplied air respirators with an escape bottle mat be appropriate when oxygen levels are inadequate, gas/vapor warning properties are poor, or if air purifying filter capacity / rating may be exceeded.

Hand Protection: Glove suitability and breakthrough time will differ depending on the specific use conditions. Contact the glove manufacturer for specific advice on glove selection and breakthrough times for your use conditions. Inspect and replace worn or damaged gloves. The types of gloves to be considered for this material include: Chemical / hydrocarbon - resistant gloves. If contact with forearms is likely wear gauntlet style gloves.

Eye Protection: Chemical goggles and/or full face-shield are recommended.

Skin and Body Protection: The types of clothing to be considered for this material include Chemical / oil resistant clothing / suit / coveralls. Chemical / oil resistant over-shoes / boots.

Specific Hygiene Measures: Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Discard contaminated clothing and footwear that cannot be cleaned. Practice good housekeeping.

Medical Surveillance

Baker Group employees do not work in areas that have exposure to benzene. In the event that a contract was formed with an owner/customer where benzene exposure would occur a job site specific plan would be created and implemented dealing with the requirements necessary to work in areas with benzene exposure. Medical surveillance being a component of the site-specific plan when employee's benzene exposure levels exceed the established permissible exposure limit and meet the qualifying guidelines such as;

- Employees are or may be exposed to benzene at or above the action level of 0.5 ppm for 30 or more days per year.
- Employees are exposed to a PEL or greater for 10 or more days per year.
- Employees who have been exposed to more than 10ppm of benzene for 30 or more days in a year prior to the effective date of the standard when employed by a former employer.

TRAINING AND COMPETENCY

When Baker Group employees are exposed to systems containing benzene, the appropriate training based on the job and potential hazards related to benzene shall be provided to all applicable employees. Documentation of training, assessments, and retraining shall be kept. Assessments shall be used to determine whether the personnel have the knowledge and have demonstrated skills to safely perform their work assignments.

Retraining and testing shall be required for unsatisfactory/ unsafe performance of job assignments.

SUPPORTING DOCUMENTS

ASSOCIATED DOCUMENTS AND REFERENCE

https://www.cdc.gov/niosh/idlh/71432.html

https://www.cdc.gov/niosh/npg/npgd0049.html

https://www.atsdr.cdc.gov/phs/phs.asp?id=37&tid=14#bookmark01

https://www.osha.gov/pls/oshaweb/owadisp.show_document?p_id=10042&p_table=STANDARDS

Hydrogen Sulfide (H_2S)

PURPOSE

To establish minimum requirements for hydrogen sulfide (H_2S) safety, where hydrogen sulfide is present or is recognized as being potentially present. Health effects of H_2S include eye irritation and/or may affect nerve centers of the brain which control breathing and respiratory issues.

SCOPE

This program has been prepared for the Baker Group workforce and applies to work performed at Baker Group Facilities (Fabrication Shops) or Jobsites (customer premises). This program may be superseded by equivalent or more stringent host employer, controlling contractor, or regulatory requirements.

ACRONYMS, DEFINITIONS, & LANGUAGE

LANGUAGE

Throughout Baker Group defined and recommended practices, the following words have specific meanings,

"Shall" is used when a provision is mandatory.
"Should" is used when a provision is preferred.
"May" is used when alternatives are equally acceptable.

DEFINITIONS

Acute Exposure – generally, exposure to a substance for a less than 24 hours.

Chronic Exposure – generally, exposure to a substance for a period of more than 3 months.

Contingency Plan – a site specific written document that provides an organized plan for alerting and protecting the public within an area of exposure following the accidental release of all potentially hazardous atmospheric concentrations of hydrogen sulfide.

Exposure Level – permissible exposure level of hydrogen sulfide is 10ppm for an 8-hour time weighted average.

Gas Detector Instrument – an instrument / detector to measure levels of H_2S. instruments may be electronically or manually operated.

Hydrogen Sulfide (H_2S) – is an extremely deadly, toxic gas that in its pure state is colorless and is heavier than air. It is the second most toxic gas known to man, ranking behind hydrogen cyanide and ahead of carbon monoxide.

- It has the odor of rotten eggs at extremely low concentrations, less than 2ppm
- It is soluble in water
- It is flammable
- Higher concentrations rapidly paralyze the olfactory nerves (sense of smell)
- Poses a definite threat of explosion if not handled properly

Parts per million (ppm) – parts of vapor or gas per million parts of contaminated air by volume.

Personal H_2S monitor – an electronic instrument worn on the person that is set to alarm at 10ppm of H_2S.

Venting – the process of discharging a material to the atmosphere through a series piping and/or venting devices, to facilitate the proper and safe dispersion of toxic materials and to minimize personnel exposure.

RESPONSIBLITIES

Managers / supervisors are responsible:

- For ensuring that all employees who are assigned to work at locations where hydrogen sulfide is known to be present, or suspected to be present in any concentration, have been trained in hydrogen sulfide safety within the last 12 months.
    - **NOTE**: If employees do not regularly work in H_2S environments training shall be completed immediately prior to beginning work.
- The training and equipment required shall be provided by a competent third party.
- To ensure employees have been trained in Cardiopulmonary Resuscitation (CPR) and First Aid.
- To ensure employees have been trained and familiar with personal H_2S monitors and gas detection instruments.
- To have been provided with the client's safety procedures and must be aware of site specific contingency / emergency plans.
- That each employee has been provided with a copy of this program.

Employees are responsible:

- To comply with this program.

REQUIREMENTS AND PROCEDURES

Each person entering a H_2S location, regardless of the concentration, shall wear a personal H_2S monitor (or 4-gas monitor with H_2S sensor) that is set to alarm at 10ppm. Possible locations where employees may be exposed to H_2S during their job functions include but are not limited to:

- Sewers
- Digesters
- Paper Mills

When work requires opening any equipment on location that has concentrations of H_2S over 10ppm, the area must not be accessed and must be evacuated until fresh air ventilation returns the atmosphere to a safe state.

After the equipment has been locked and tagged out, opened and the H_2S concentration has been cleared to less than 10ppm, the stand-by person will no longer be required.

Work may then be performed without respiratory equipment, except for the required 5-minute escape pack.

Safe work procedures:

- Maintain compliance with permit requirements of Baker Group and any requirements by our customer.
- Verify that proper safety equipment is available, functioning properly and remain aware of wind conditions and direction.
- Perform a thorough check of the downwind area prior to the start of any potentially hazardous work activity.
- Check for other personnel and ignition sources.
- Ventilate work areas by venting and purging lines and vessels prior to beginning any work activities.
- Keep all non-essential personnel away from work areas.
- If H_2S monitor alarm is sounded, personnel will vacate the area immediately.

The following equipment shall be provided and used as required by this program:

- Personal H_2S monitor set to alarm at 10ppm.
- Portable H_2S gas testing instrument, either electronic or manual pump operated, capable of testing the suspected concentrations of H_2S.

- Each testing instrument must be capable of testing the suspected concentrations of H_2S by using the manufacturer's recommended calibrated tube or other means of measuring the concentration of gas.
- Testing instruments shall be calibrated periodically according to the manufacturer's recommendation through the Baker Group tool crib and/or safety department.
- 5-minute escape pack

TRAINING AND COMPETENCY

Employees required to wok near potentially dangerous levels of H_2S will complete a hydrogen sulfide training program and must be made aware of site specific contingency/emergency plans.
Training shall consist of:

- Physical and chemical properties of H_2S
- Sources of H_2S
- Human physiology
- Signs and symptoms of H_2S exposure, acute and chronic toxicity
- Symptomatology of H_2S exposure
- Medical evaluation
- Work procedures
- Persona protective equipment required working around H_2S
- Use of contingency plans and emergency response
- Burning, flaring, and venting of H_2S
- H_2S release dispersion models
- Rescue techniques, first aid, and post exposure evaluation
- Use, care, and calibration of personal monitors and gas detection instruments
- Respirator inspections

Each employee will complete a First Aid and CPR training course and maintain the certification by attending the required periodic refresher training and re-certification required by the organization certifying the training. Employees and other personnel visiting locations with potentially high H_2S concentrations who will not be involved in the work shall be briefed on the following prior to entering:

- Site-specific sources of H_2S
- Health hazards of H_2S
- Routes of egress
- Emergency assembly areas
- Applicable alarm signals; and
- How to respond in the event of an emergency

Non-Entry / Self Rescue:

- Each employee shall plan and become familiar with self-escape procedures when working alone, to include being aware of wind direction and obstacles to avoid when exiting the work area.

- Employees working under the buddy system shall pre-plan an emergency rescue and/or evacuation procedure prior to commencing work and arrange for periodic communications with his/her supervisor.

Monitors and gas detector calibration:

- Each personal H_2S monitor that does not require calibrating shall be bump checked with calibration gas, to test alarms, monthly or prior to use if not used routinely.
- A factory-authorized representative, according to the manufacturer recommendations, will calibrate other portable gas detection equipment regularly, but not to exceed six months.

Physical characteristics and effects of hydrogen sulfide:

- Do not rely on smell to detect H_2S – rely strictly on instruments designed to measure concentrations of H_2S.
- Hydrogen sulfide is a very dangerous and deadly gas – it is colorless and heavier than air.
- It can accumulate in low places.
- In small concentrations it has a strong, pungent, somewhat distasteful odor similar to rotten eggs.
- In higher concentrations, it can deaden the sense of smell (olfactory nerve).
- Exposure to certain concentrations of H_2S can cause serious injury or death.

Concentration	Physical Effects
.01 ppm	Can smell odor
10 ppm	Obvious and unpleasant odor. Beginning eye irritation. ANSI permissible exposure level for 8 hours (enforced by OSHA).
100 ppm	Immediately dangerous to life or health (IDLH). Kills smell in 3-15 minutes; may sting eyes and throat. May cause coughing and drowsiness. Possible delayed death within 48 hours.
200 ppm	Kills smell shortly, stings eyes and throat. Respiratory irritation. Death after 1-2 hours exposure.
500 ppm	Dizziness; breathing ceases in a few minutes. Need prompt rescue breathing (CPR). Self-rescue impossible because of loss of muscle control.
700 ppm	Unconscious quickly; death will result if not rescued promptly.
1000ppm	Unconscious at once; followed by death within minutes

SUPPORTING DOCUMENTS

ASSOCIATED DOCUMENTS AND REFERENCE

- 29 CFR 1910.1000 Air contaminates

Ammonia Awareness

PURPOSE

To set forth practice requirements and procedures to guide Baker Group's workforce engaged in activities which might expose workers to ammonia and to comply with applicable regulations.

SCOPE

This practice has been prepared for the Baker Group workforce and applies to work performed at Baker Group facilities (fabrication shops) or jobsites (customer premises). This practice may be superseded by equivalent or more stringent host employer, controlling contractor, or regulatory requirements.

ACRONYMS, DEFINITIONS AND LANGUAGE

Ammonia – a colorless gas under normal conditions. It can be a liquid under pressure. It has pungent, suffocation odor. Anhydrous ammonia is attracted to water and at ambient temperature is mainly a gas.

PEL – Permissible exposure limit, which is the maximum amount of ammonia an employee may be exposed to during a full work shift. The PEL for ammonia is TWA 50ppm (35 mg/m^3).

RESPONSIBILITIES

REQUIREMENTS AND PROCEDURES

Hazard Recognition

Ammonia can be found in: Agricultural applications, chemical process industries, pollution control, refrigeration (pressurized receiver, compressors, piping), water treatment and metal treatment. The most recognizable property of ammonia is smell. Ammonia's strong, suffocating, pungent and irritating smell gives early and positive warning that ammonia is present.

Rule of Exposure

- 5ppm – You can smell it
- 50ppm – It can harm you – long term exposure
- 300ppm – IDLH – Immediate Danger to Life and Health
- 5000ppm – It can kill you

If you can smell ammonia, be concerned. Move out of the ammonia cloud as soon as possible and notify others. Move upwind of the ammonia cloud.
Employees shall be aware of provisions of site-specific contingency/emergency plans. Learn signs of release, first aid procedures, and have an emergency action plan when entering facilities containing ammonia.
Exposure to liquid anhydrous ammonia or high concentrations of ammonia vapor can cause:

- Blindness
- Burning of the eyes
- Coughing
- Chest pain
- Dehydration of body tissue
- Chemical burns
- Frostbite

First aid for ammonia
Ammonia can cause harm if inhaled and/or it comes into contact with your eyes or skin. Large quantities of water (15 minutes of continued flushing) are recommended for washing contaminated skin areas or eye contact.

Inhalation:
- Remove from exposure
- Administer artificial respiration or oxygen (if available and trained) if breathing hasstopped
- Seek medical aid

Skin contact:
- Immediately flush with large quantities of water and continue for 15 minutes. Do not remove clothing if frozen to skin
- Seek medical aid

Eye contact:
- Immediately flush with large quantities of water. Hold the eyelid open and continue to flush for 15 minutes
- Seek medical aid

Ingestion:
- Do NOT induce vomiting. Give 1-2 glasses of milk or water
- Seek medical aid

Personal Protective Equipment requirements for ammonia
Employees shall be provided with and required to use impervious clothing, gloves, face shields, and other appropriate protective clothing necessary to prevent any possibility of skin contact with liquid anhydrous ammonia or aqueous solution of ammonia containing more than 10% weight of ammonia. Precautions shall also be taken to prevent skin from becoming frozen from contact with vessels containing liquid anhydrous ammonia.

- Rubber gloves
- Eye protection
- Face shield
- Long sleeve shirt

TRAINING AND COMPENTENCY
When Baker Group employees are exposed to systems containing ammonia, the appropriate training based on the job and potential hazards related to ammonia shall be provided to all applicable employees. Documentation of training, assessments, and retraining shall be kept, assessments shall be used to determine whether the personnel have the knowledge and have demonstrated skills to safely preform their work assignments.
Retraining and testing shall be required for unsatisfactory/unsafe performance of job assignments.

SUPPORTING DOCUMENTS

ASSOCIATED DOCUMENTS AND REFERENCES
Respiratory protection policy
Hazard communication policy

RESPIRATORY PROTECTION

PURPOSE

The purpose of this policy is to establish a respiratory protection program for Baker Group that ensures workers are provided with the necessary information, training, and equipment to protect themselves from harmful vapors and oxygen deficient respiratory hazards in the workplace. The program is designed to comply with OSHA, ANSI, and other applicable standards and regulations.

POLICY

It is management's responsibility to implement this program at no cost to the workers and it is the worker's responsibility to comply with all aspects of this program. Any voluntary use of respiratory protection equipment by workers shall be governed by the provisions of this program, also at no expense to the workers.

RESPONSIBILITIES

Management

Management has the responsibility of overseeing the implementation of this policy and assigning program administrators for each site location. These administrators must be suitably trained and have the appropriate accountability and responsibility to fully manage the site respiratory program. The program administrator will report, at least annually, on the effectiveness of the program to management, and be authorized to make appropriate changes to the site program. The administrators will be identified by name in the specific site program.

Supervisory

It is the responsibility of the supervisor to ensure that all workers under their control are completely knowledgeable of the respiratory requirements of this program. Supervisors are to ensure that workers have been trained and are medically fit to use respiratory equipment safely. It is the supervisors' duty to monitor the workers' diligence in following procedures and take appropriate action when deficiencies are observed.

Workers

It is the responsibility of the worker to be aware of and practice the information presented in the training. Specifically, worker responsibilities are to report equipment malfunctions, seal check their respirator before every use, and to report medical or physical changes that could affect respirator use.

PROCEDURES

Hazard Assessment

Respiratory hazard determination starts at the planning stage of a job. Baker Group will identify all known hazards as required by the hazard communication standard. Evaluation of the hazards consists of exposure duration, potential for contact, and known or potential concentrations. When the hazard is a federally controlled substance, that hazard shall be assessed and monitored as dictated by that specific standard. A respiratory hazard may not have an established OSHA permissible exposure limit documented; however, all provisions of this program will be enforced to protect the health of the workers.

Acceptable methods for estimating respiratory hazards include:

- Worker exposure monitoring is the most reliable and accurate method to determine exposure.
- Use of objective data – This is the use of data obtained from industry studies, trade associations or from tests conducted by chemical manufacturers. The objective data shall represent the highest contaminant exposures likely to occur under reasonably foreseeable

conditions of processing, use or handling. If objective data is used for assessment, the data must be documented as part of the written program.

- Mathematical Approach – The use of physical and chemical properties of air contaminates, combined with information on room dimensions, air exchange rates, contaminant release rates, and other pertinent data including exposure patterns and work practices to estimate maximum exposure levels in the workplace.
- Where worker exposure cannot be identified or reasonably estimated, the atmosphere will be considered immediately dangerous to life and health (IDLH). Also, atmospheres that are oxygen deficient will be treated as IDLH conditions.
- Accidental release or emergency response must be a consideration when estimating hazard exposure.

Hazard Control

Engineering Controls: This should be the first consideration when evaluating hazard exposure.

- Substitution of a less or non-toxic substance to replace a more harmful one. Example: Sandblasting with black grit instead of silica sand.
- Isolation or encapsulation of the process. Example: To spray asbestos insulation with glue paste to lessen exposure levels.
- Ventilation to remove contamination from the work area before exposure. Example: Mechanical dust collection system installed to capture contaminants and reduce buildup.

Administrative Controls:

- Especially effective for repetitive stress and heat stress control, crew rotation could increase productivity in contaminated atmospheres.
- Adjust the length of the work shift. Instead of two 12-hour shifts, it may be more effective to have three 8-hour shifts.
- Change scheduled work to limit the number of workers exposed. The scheduling of other work near the exposure area could be limited until exposure is gone.

Personal protective devices for the control of respiratory hazards are to be used as a last resort, and only when other means of control are not practical or feasible. Respiratory equipment will be provided for workers use against harmful vapors & oxygen deficient atmospheres. Respiratory protection may be required while implementing engineering controls, or in conjunction with other control methods. Engineering controls may only lessen the exposure but are required to be implemented along with personal protective devices. Respirators shall be provided which are applicable and suitable for the purpose intended.

Respirator Selection

Selecting the proper respirator can be very complex and is critical in having an effective respiratory program. The program administrator must solicit information from all available professional resources concerning exposure controls.

Factors that must be considered include:

- The nature of the hazardous operation or process
- The type of respiratory hazard (including physical properties, oxygen deficiency, physiological effects on the body, concentration of toxic material or airborne radioactivity level, established exposure limits for the toxic materials, established permissible airborne

concentration for radioactive material, and established immediately dangerous to life or health concentration for toxic material)
- The location of the hazardous area in relation to the nearest area having respirable air
- The period of time for which respiratory protection must be worn
- The activities of workers in the hazardous area
- The physical characteristics and functional capabilities and limitations of the various types of respirators
- Respirator-assigned protection factors listed in Attachment I, Table 1

Respirators for use under IDLH conditions:

The required respiratory protection for IDLH conditions caused by the presence of toxic materials, or a reduced percentage of oxygen, is a combination full face piece pressure demand supplied air respirator (SAR) with auxiliary self-contained air supply. For rescue applications, a full-face piece pressure demand SCBA certified by National Institute for Occupational Safety & Health (NIOSH) for a minimum service life of thirty minutes is acceptable.

When respirators are worn under IDLH conditions, at least one standby person shall be present in a safe area. The standby person shall have the proper equipment available to assist the respirator wearer in case of difficulty. Communications (visual, voice, signal line, radio, or other suitable means) shall be maintained between the standby person and the wearer. While working in the IDLH atmosphere, the wearer shall be equipped with safety harness and safety lines to permit removal to a safe area, if necessary. Provisions for rescue other than safety harness and lines may be used if equivalent.

Breathing Air Quality
Workers using supplied breathing air equipment shall be thoroughly trained in its use.

Breathing air is typically supplied from cylinders or via a compressor. Appropriate measures shall be taken to ensure that all compressed breathing air meets at least the requirements for Grade D breathing air described in ANSI/Compressed Gas Association Commodity Specification for Air, G-7.1-1989, to include:

- Oxygen content (v/v) of 19.5-23.5%.
- Hydrocarbon (condensed) content of 5 milligrams per cubic meter of air or less.
- Carbon monoxide (CO) content of 10 ppm or less.
- Carbon dioxide content of 1,000 ppm or less; and
- Lack of noticeable odor.

Suppliers of breathing air cylinders shall provide Baker Group with a certificate of analysis with each delivery certifying that the breathing air meets the requirements for Grade D breathing air; and that the moisture content in the cylinder does not exceed a dew point of -50 degrees F (-45.6 degrees C) at 1 atmosphere pressure. The certificate shall have the name of the breathing air supplier, the testing technician and date of test.

Breathing air cylinders shall be tested and maintained as prescribed in the Shipping Container Specification Regulations of the Department of Transportation (49 CFR part 173 and part 178).

Breathing Air Compressors

Compressors used to supply breathing air to respirators shall be constructed and situated so as to:

- Prevent entry of contaminated air into the air-supply system.
- Minimize moisture content so that the dew point at 1 atmosphere pressure is 10 degrees F (-5.56 degrees C) below the ambient temperature.
- If required to ensure delivery of Grade D air to the user, provide suitable in-line air-purifying sorbent beds and filters. All filters, cartridges and canisters shall be labeled, and color coded with the NIOSH approval label and the label shall remain legible. Sorbent beds and filters shall be maintained and replaced or refurbished periodically following the manufacturer's instructions. A tag containing the most recent change date and the signature of the person authorized by the employer to perform the change shall be attached to the equipment.
- For compressors that are not oil-lubricated, Baker Group shall ensure that carbon monoxide levels in the breathing air do not exceed 10 ppm.
- For oil-lubricated compressors, Baker Group shall use a high-temperature or carbon monoxide alarm, or both, to monitor carbon monoxide levels. If only high-temperature alarms are used, the air supply shall be monitored at intervals sufficient to prevent carbon monoxide in the breathing air from exceeding 10 ppm.
- The air shall be routinely tested to ensure that it meets Grade D requirements.

In addition, a stand-by attendant shall be on watch anytime workers are using breathing air supplied directly by a compressor.

Breathing air couplings shall be incompatible with outlets for non-respirable worksite air or other gas systems. No asphyxiating substance shall be introduced into breathing airlines.

Training

To protect workers from exposure to respiratory hazards using OSHA and ANSI standards as minimum guidelines, all workers who will wear respiratory protection will be trained on this policy. Training will be provided prior to job assignment where respirator equipment is required, and annually thereafter. Additional training is required when there are deficiencies in the worker's knowledge/skills or when there is a change in the workplace or respiratory equipment that renders previous training obsolete. The training will include the following:

- Responsibilities of workers and supervisors
- How, why and for what jobs we use respirators
- Hazard assessment including limitations of respirators
- Hazard control
- Respirator selection
- Medical evaluation
- Respirator fit test
- Maintenance, care, and storage
- Medical surveillance
- Program evaluation

All training shall be conducted in a way that is understandable to the worker and is documented.

- Why use respiratory protection
    - The nature, extent, and effects of respiratory hazards

- Consequences of improper fit, usage and maintenance on respirator effectiveness

- Limitations and capabilities of the respirator
  - Air purifying respirators that filter either particles, or absorb vapors and gases
  - Air supplying respirators that supply air from an uncontaminated source
  - Limitations of respirators in IDLH atmospheres and for emergency use only

- How respirators are inspected, donned, removed, seal checked and worn
  - What to do if respirators have defects
  - Who to report problems to during use
  - Proper technique for donning and removing the respirator, and how to store it when not in use
  - How to seal check using the positive and/or negative pressure method

- Methods of maintenance and storage
  - Visual inspection of parts for worn or defective items
  - How to keep the issued respirator clean and sanitary
  - Requirement to disinfect and sanitize before reissue to other workers
  - Proper storage in a cool, clean, and dry location, placing them in a clean, sealed plastic bag after drying

- Medical signs and symptoms that may limit or prevent the effective use of respirators
  - An awareness of physical conditions that may indicate warning signs
  - An obligation to report signs and symptoms and the opportunity for medical reevaluation
  - Changes in weight (gain or loss)
  - Physical changes in facial structure
  - Changes in endurance, stability, or general health
  - Medication for illness

Medical Evaluation

All workers whose job classification may require the use of respiratory protection shall be evaluated and certified by a physician or a licensed health care professional (PLHCP) as being "medically fit" to wear a respirator. For new hires, the medical evaluation shall be made before any use of respiratory equipment. Thereafter, the evaluation shall occur at a minimum annually. The medical evaluation consists of, at a minimum, the administration of a health questionnaire meeting federal guidelines or provisions for a physical examination by a PLHCP that elicits the same information as the questionnaire. The PLHCP shall be provided with supplemental information by the employer on the description of the job classification, possible work conditions and any additional personal protective equipment. that may be required of the worker while using respiratory equipment. Also, a copy of this program will be given to the PLHCP for reference along with the OSHA standard.

The administration of the health questionnaire will be done during work hours and at no cost to the worker. The information on the questionnaire shall remain confidential between the PLHCP and the worker. The worker must have access to the PLHCP for discussion and asking questions concerning their medical evaluation. The Company will only receive a recommendation of the worker's ability to wear respiratory equipment.

If a worker is restricted by the PLHCP from wearing a negative pressure respirator, but otherwise physically able to perform duties with a powered air respirator, then reasonable accommodations will be made by the program administrator not to have this restriction limit the worker's ability to perform his job.

Respirator Fit Test

Respirator fit testing is required of all workers prior to using a positive or negative tight-fitting respirator. The fit test will be specific for respirator manufacturer, model, and size. This test is to be repeated annually, or if there is a change in the respiratory equipment. Some substance specific standards may call for more frequent testing and dictate a specific protocol, which would take precedence over this program. A change in the worker's physical appearance can affect the seal of a respirator and may require re-testing. If the respirator is unacceptable to the worker due to comfort, irritation, or inability to get a seal, the worker will be offered a reasonable selection for an alternate choice of respirators.

The worker will be asked to wear the proposed respirator for a period of time to become familiar with the feel and fit. No obstacles can be between their face and the sealing surface of the respirator, including facial hair of 24 hours or more growth, sideburns that extend into the sealing surface or hair that is long enough to prevent proper function of the respirator. Jewelry, caps, hats, scarves, and certain safety gear must be evaluated as part of the fit test if the worker is permitted or required to wear them during work. OSHA did not restrict the use of contact lens with respirators but did mandate that the use of corrective lens shall not interfere with the seal of the respirator. Any adaptive devices for vision correction with respiratory equipment will be supplied at no cost to the worker. The worker will be instructed on how to field check respiratory equipment. The positive and negative seal check methods of verifying a good seal shall be required before every entry into a respiratory hazard area. These seal checks are not to be considered a fit test.

Positive Seal Check

A positive seal check is accomplished by effectively sealing the exhalation valve and slowly exhaling. This should create a slight, positive pressure inside the face piece for a short period of time. The participant must be careful not to exhale too fast or small leaks can be nullified and/or large leaks artificially created.

Negative Seal Check

A negative seal check is accomplished by effectively sealing the inhalation ports of the respirator and inhaling slowly. The participant should be able to create a negative pressure inside the respirator and hold it for a short period of time. Inhaling too fast may nullify small leaks and/or artificially create other leaks.

Fit Test (See Attachment V, Table 2 for "Acceptable Fit-Testing Methods")

- Qualitative fit test – a pass/fail test that relies on the subject to detect a challenge agent and is predicated on an individual's sensory response.
- Quantitative fit test – uses an instrument to measure the challenge agent inside the respirator and gives a numerical value to the test data.

If qualitative testing is used, the worker should be informed of the exposure limitations. A limit of 10 times the permissible exposure level for an 8-hour duration is the maximum exposure for either a half mask, or full-face piece negative pressure respirator.

For OSHA guidelines, refer to Attachment V, Table 2 for Acceptable Fit Test Methods.

Irritant Smoke Protocol

Irritant smoke protocol for qualitative fit testing is very effective, since it is the only challenge agent that does not rely on a voluntary response. This type of test requires that the tester be well trained in the correct and safe use of the irritant smoke tubes. The smoke tubes can be a health hazard if not used properly and in a well-ventilated room. Specific step by step procedures are referenced in Attachment III.

Maintenance and Care

Baker Group will provide for the cleaning and disinfecting, storage, inspection, and repair of respirators that are issued to their workers. There are specific guidelines to follow in Attachment IV to ensure the respirators are clean and disinfected. Respirators designated for the exclusive use of a worker shall be the responsibility of that worker to maintain and keep in a sanitary condition. Respirators issued to more than one worker shall be cleaned and disinfected before being worn by different individuals. Respirators maintained for emergency, training, or fit testing use shall be cleaned and disinfected after every use.

Storage

Respirators shall be stored to protect them from damage, contamination, dust, sunlight, extreme temperatures, excessive moisture, and damaging chemicals. They shall be packed or stored to prevent deformation of the face piece. Emergency respirators shall, in addition, be kept accessible to the work area and stored in easily identifiable coverings. Reference the manufacturer's instructions for other recommendations.

Inspection

Respirators are inspected on a regular basis and workers are instructed on how to inspect their respirator. All respirators used on a routine basis shall be inspected before each use and during cleaning. All emergency respirators shall also be inspected at least monthly. Respirator inspection shall include the tightness of connections and the condition of various parts including, but not limited to, the face piece, head straps, valves, gaskets, connecting tubes, cartridges, canisters, and filters. Also, check all elastic parts for deterioration and pliability. Inspection of self-contained breathing apparatus shall be done only by trained technicians competent with that specific brand, make and model of respiratory equipment. The technician conducting the inspection shall certify the inspection by attaching a signed and dated tag or label to the equipment.

Repairs

Equipment that is defective, broken or otherwise in need of repair shall be identified immediately by attaching a red tag and stating the reason it is out of service. Repairs to respirator equipment shall be made by competent workers and only with the manufacturers' recommended replacement parts. Absolutely no substitution of parts is allowed that is not authorized by the NIOSH approval.

Medical Surveillance

Workers should be aware of medical conditions that would prevent or limit their use of respiratory equipment. Supervisors shall be informed when workers experience medical difficulties that may affect or be a result of respirator use. Substance specific hazards may require a specific medical monitoring procedure that requires biological testing. Workers will be required to complete a medical questionnaire initially, and then further evaluation at the frequency determined by the medical evaluator.

Program Evaluation

The supervisor will monitor the work site for acceptance of and compliance with the written respiratory program. The supervisor will address issues where workers have had deficient respiratory issues, i.e.,

cartridge breakthrough and the respirator effectiveness. Workers will be asked questions about the effectiveness of the program and encouraged to offer suggestions for improvement including how the fit test protocol was performed, the maintenance procedures for care and storage of respirators and overall program. Periodic audits will be documented and reviewed by the program administrator. The program administrator will report, at least annually, to the management on the effectiveness of the total program.

Attachment I
Table 1: Assigned Protection Factors

Type of respirator	Respiratory inlet covering	
	Half Mask [1]	**Full Facepiece**
Air purifying	10	100
Atmosphere supplying		
SCBA (demand) [2]	10	100
Airline (demand)	10	100

Type of respirator	Respiratory inlet covering			
	Half mask	**Full Face**	**Helmet/ hood**	**Loose-fitting facepiece**
Powered air purifier	50	1000 [3]	1000 [3]	25
Atmosphere supplying airline				
Pressure demand	50	1000	-	-
Continuous flow	50	1000	1000	25
Self-contained breathing apparatus				
Pressure demand	-	[4]	-	-
Open/closed circuit				

1) Includes ¼ mask, disposable half masks, and half masks with elastomeric facepieces.
2) Demand SCBA shall not be used for emergency situations such as firefighting.
3) Protection factors listed are for high-efficiency filters and sorbents (cartridges and canisters). With dust filters, an assigned protection factor of 100 is to be used due to the limitations of the filter.
4) Although positive-pressure respirators are currently regarded as providing the highest level of respiratory protection a limited number of recent simulated workplace studies concluded that all users may not achieve protection factors of 10,000. Based on this limited data, a definitive assigned protection factor could not be listed for positive-pressure SCBA's. For emergency planning purposes where hazardous concentrations can be estimated, an assigned protection factor of no higher than 10,000 should be used.

NOTE: Assigned protection factors are not applicable for escape respirators. For combination respirators, e.g., airline respirators equipped with an air-purifying filter, the mode of operation in use will dictate the assigned protection factor to be applied.

Attachment II
Respirator Selection

Logic Guide: Reference ANSI 288.2 – 1992 7.2.2.

Respirator selection involves reviewing each operation to (a) determine what hazards may be present (hazard determination) and (b) select which type or class of respirators can offer adequate protection.

Hazard Determination Steps

The nature of the hazard shall be determined as follows:

Determine what contaminant(s) may be present in the workplace.

Determine whether there is a published Threshold Limit Value, Permissible Exposure Limit, or any other available exposure limit or estimate of toxicity for the contaminant(s). Determine if the IDLH concentration for the contaminant is available.

Determine if there is a comprehensive health standard (e.g., lead, asbestos) for the contaminant(s). If so, there may be specific respirators required that influence the selection process.

If the potential for an oxygen-deficient environment exists, measure the oxygen content.

Measure or estimate the concentration of the contaminant(s).

Determine the physical state of the contaminant. If an aerosol determines or estimates the particle size. Determine if vapor pressure of the aerosol is significant at the maximum expected temperature of the work environment.

Determine whether the contaminant(s) present can be absorbed through the skin, produce skin sensitization, or be irritating or corrosive to the eyes or skin.

Determine for a gas or vapor contaminant(s) if a known odor, taste, or irritation concentration exists.

Selection Steps

The proper respirator shall be selected as follows:

If unable to determine what potentially hazardous contaminant may be present, the atmosphere shall be considered IDLH.

If no exposure limit or guideline is available and estimates of the toxicity cannot be made, the atmosphere shall be considered IDLH.

If a specific standard exists for the contaminant, follow those guidelines/requirements.

If there is an oxygen-deficient atmosphere, the type of respirator selected depends on the partial pressure and concentration of oxygen and the concentration of the other contaminant(s) that may be present.

If the measured or estimated concentration of the contaminant(s) is considered IDLH, reference "Respirators for use under IDLH conditions" at the end of this guide.

Divide the measured or estimated concentration of each contaminant by the exposure limit or guideline to obtain a hazard ratio. When two or more substances are present, consideration needs to be given if there is a synergistic or combined effect of exposure rather than considering each substance individually. Select a respirator with an assigned protection factor greater than the value of the hazard ratio, as listed in Attachment I, Table 1.

If the contaminant(s) is a gas or vapor only, select a device with an assigned protection factor that is greater than the hazard ratio. The concentration shall also be less than the maximum use concentration of the cartridge/canister.

If the contaminant is a paint, lacquer, or enamel, select a respirator approved specifically for paint mists or an atmosphere-supplying respirator. (Approval label or regulatory provision may preclude use for some paints.)
If the contaminant is a pesticide, select a respirator and filtration system specifically approved for pesticides or an atmosphere-supplying respirator. (Approval label may preclude use for some pesticides.)
If the contaminant is an aerosol with an unknown particle size, or less than 2 um (MMAD), a high-efficiency filter shall be used.
If the contaminant is a fume, use a filter approved for fumes or a high-efficiency filter.
If the contaminant is an aerosol with a particle size greater than 2 um (MMAD), any filter type (dust, fumes, mist, or high efficiency) may be used.
If the contaminant is a gas or vapor and has poor warning properties, the use of an atmosphere-supplying respirator is generally recommended.
When atmosphere-supplying respirators cannot be used because of the lack of a feasible air supply, or the need for worker mobility, air-purifying devices should be used only if:

- The air-purifying respirator has a reliable end-of-service-life indicator that will warn the user prior to contaminant breakthrough or,
- A cartridge change schedule is implemented based on cartridge service data including desorption studies (unless cartridges are changed daily), expected concentration, pattern of use, duration of exposure, and the chemical does not have a ceiling limit.

Respirators for use under IDLH atmospheres:

- The required respiratory protection for IDLH conditions caused by the presence of toxic materials, or a reduced percentage of oxygen, is a combination full face piece pressure demand supplied air respirator (SAR) with auxiliary self-contained air supply. For rescue applications, a full-face piece pressure demand SCBA certified by NIOSH for a minimum service life of thirty minutes is acceptable.
- When respirators are worn under IDLH conditions, at least one standby person shall be present in a safe area. the standby person shall have the proper equipment available to assist the respirator wearer in case of difficulty. Communications (visual, voice, signal line, intercom, radio, or other suitable means) shall be maintained between the standby person and the wearer. While working in the IDLH atmosphere, the wearer shall be equipped with a safety harness and lifeline to permit removal to a safe area, if necessary. Provisions for rescue other than harness and lifeline may be used if equivalent.

- Special considerations for confined space entry into IDLH conditions are not addressed in this policy.

Use and duration of cartridges

Contaminant (1)	Maximum Concentration	Maximum Use Time (2) (Hours)
1,3 Butadiene	50	1
Ammonia	100	4
Benzene	10	8
Benzene	50	4
Chemicals not specified (3)	NA	1
Naphtha	100	4
Naphtha	500	2
Particulates (including dust, mists, welding fumes)	NA	8
Sulfur Dioxide	50	8
Total Hydrocarbons (as n-hexane)	100	4
Total Hydrocarbons (as n-hexane)	500	1

- If more than one contaminant is present, use the lowest maximum use time.
- Cartridges should be changed out if the contaminant can be detected inside the respirator mask, regardless of the maximum use time.
- Cartridges for chemicals not listed should be used for only 1 hour. This will err on the side of safety. If specific information is needed on a particular chemical, consult with the SDS or your supervisor.

Attachment III
Fit Testing

If the test subject is not familiar with using a particular respirator, the test subject shall be directed to don the face piece several times and to adjust the straps to become adept at setting the proper tension on the straps.

Assessment of comfort shall include a review of the following points with the test subject and allowing the test subject adequate time to determine the comfort of the respirator:

- Position of the mask on the nose
- Room for eye protection
- Room to talk
- Position of mask on face and cheeks

The following criteria shall be used to help determine the adequacy of the respirator fit:

- Chin properly placed
- Adequate strap tension, not overly tightened
- Fit across nose bridge
- Respirator of proper size to span distance from nose to chin
- Tendency of respirator to slip
- Self-observation in mirror to evaluate fit and respirator position

The test subject shall conduct a user seal check, utilizing the negative and positive pressure seal check methods. Before conducting the negative and positive pressure checks, the subject shall be told to seat the mask on the face by moving the head from side-to side and up and down slowly while taking a few slow deep breaths. Another face piece shall be selected and retested if the test subject fails the user seal check tests.

- The test shall not be conducted if there is any hair growth between the skin and the face piece sealing surface, such as stubble beard growth, beard, mustache, or sideburns which cross the respirator sealing surface. Any type of apparel, which interferes with a satisfactory fit, shall be altered or removed.

- If the worker finds the fit of the respirator unacceptable, the test subject shall be given the opportunity to select a different respirator and to be retested.

Exercise regimen: Prior to the commencement of the fit test, the test subject shall be given a description of the fit test and the test subject's responsibilities during the test procedure. The description of the process shall include a description of the test exercise that the subject will be performing. The respirator to be tested shall be worn for at least 5 minutes before the start of the fit test.
The fit test shall be performed while the test subject is wearing any applicable safety equipment that may be worn during actual respirator use, which could interfere with respirator fit.

Test exercises: The following test exercises are to be performed for all fit testing methods. The test subject shall perform exercises, in the test environment, in the following manner:

- Normal breathing: In a normal standing position, without talking, the subject shall breathe normally.
- Deep breathing: In a normal standing position, the subject shall breathe slowly and deeply, taking caution so as not to hyperventilate.
- Turning head side to side: Standing in place, the subject shall slowly turn his/her head from side to side between the extreme positions on each side. The head shall be held at each extreme momentarily so the subject can inhale at each side.
- Moving head up and down: Standing in place, the subject shall slowly move his/her head up and down. The subject shall be instructed to inhale in the up position (i.e., when looking toward the ceiling).
- Talking: The subject shall talk out loud slowly and loud enough to be heard clearly by the test conductor. The subject can be read from a prepared text such as the Rainbow Passage, count backward from 100, or recite a memorized poem or song.

Rainbow Passage
When the sunlight strikes raindrops in the air, they act like a prism and form a rainbow. The rainbow is a division of white light into many beautiful colors. These take the shape of a long round arch, with its path high above, and its two ends apparently beyond the horizon. There is, according to legend, a boiling pot of gold at one end. People look, but no one ever finds it. When a person looks for something beyond reach, his friends say he is looking for the pot of gold at the end of the rainbow.

- Bending over: The test subject shall bend at the waist as if he/she were to touch his/her toes. Jogging in place shall be substituted for this exercise in those test environments that do not permit bending over at the waist.
- Normal breathing: Same as exercise (H,1).

Each test exercise shall be performed for one minute. The test subject shall be questioned by the test conductor regarding the comfort of the respirator upon completion of the protocol. If it has become unacceptable, another model of respirator shall be tried. The respirator shall not be adjusted once the fit test exercises begin. Any adjustment voids the test, and the fit test must be repeated.

Irritant Smoke Protocol
This qualitative fit test uses a person's response to the irritating chemicals released in the "smoke" produced by a stannic chloride ventilation smoke tube to detect leakage into the respirator.

General Requirements and Precautions

- The respirator to be tested shall be equipped with high efficiency particulate air (HEPA) or P100 series filter(s).
- Only stannic chloride smoke tubes shall be used for this protocol.
- No form of test enclosure or hood for the test subject shall be used.

- The smoke can be irritating to the eyes, lungs, and nasal passages. The test conductor shall take precautions to minimize the test subject's exposure to irritant smoke. Sensitivity varies, and certain individuals may respond to a greater degree to irritant smoke. Care shall be taken when performing the sensitivity screening checks that determine whether the test subject can detect irritant smoke to use only the minimum amount of smoke necessary to elicit a response from the test subject.
- The fit test shall be performed in an area with adequate ventilation to prevent exposure of the person conducting the fit test, or the build-up of irritant smoke in the general atmosphere.

Sensitivity Screening Check

- The test operator shall break both ends of a ventilation smoke tube containing stannic chloride and attach one end of the smoke tube to a low flow air pump set to deliver 200 milliliters per minute, or an aspirator squeeze bulb. The test operator shall cover the other end of the smoke tube with a short piece of tubing to prevent potential injury from the jagged end of the smoke tube.
- The test operator shall advise the test subject that the smoke can be irritating to the eyes, lungs, and nasal passages and instruct the subject to keep his/her eyes closed while the test is performed.
- The test subject shall be allowed to smell a weak concentration of the irritant smoke before the respirator is donned to become familiar with its irritating properties, and to determine if he/she can detect the irritating properties of the smoke. The test operator shall carefully direct a small amount of the irritant smoke in the test subject's direction to determine that he/she can detect it.

Irritant Smoke Fit Test Procedure

- The person being fit tested shall don the respirator without assistance and perform the required user seal check(s).
- The test subject shall be instructed to keep his/her eyes closed.
- The test operator shall direct the stream of irritant smoke from the smoke tube toward the face seal area of the test subject, using the low flow pump or the squeeze bulb. The test operator shall begin at least 12 inches from the face piece and move the smoke stream around the whole perimeter of the mask. The operator shall gradually make two more passes around the perimeter of the mask, moving to within six inches of the respirator.
- If the person being tested has not had an involuntary response and/or detected the irritant smoke, proceed with the test exercises.
- The exercises identified in section H of this attachment shall be performed by the test subject while the respirator seal is being continually challenged by the smoke, directed around the perimeter of the respirator at a distance of six inches.
- If the person being fit tested reports detecting the irritant smoke at any time, the test is failed. The person being retested must repeat the entire sensitivity check and fit test procedure.
- Each test subject passing the irritant smoke test without evidence of a response (involuntary cough, irritation) shall be given a second sensitivity screening check with the smoke from the same smoke tube used during the fit test, once the respirator has been removed, to determine whether he/she still reacts to the smoke. Failure to evoke a response shall void the fit test.
- If a response is produced during this second sensitivity check, then the fit test is passed.

Attachment IV

Respirator Cleaning Procedures

These procedures are provided as a guideline when cleaning respirators. They are general in nature, and the administrator as an alternative may use the cleaning recommendations provided by the manufacturer of the respirators used by their workers, provided such procedures are as effective as those listed here. Equivalent effectiveness simply means that the procedures used must accomplish the objectives set forth (i.e., must ensure that the respirator is properly cleaned and disinfected in a manner that prevents damage to the respirator and does not cause harm to the user).

- Remove filters, cartridges, or canisters. Disassemble face pieces by removing speaking diaphragms, demand and pressure-demand valve assemblies, hoses, or any components recommended by the manufacturer. Discard or repair any defective parts.
- Wash components in warm water (110° F maximum), with mild detergent or cleaner recommended by the manufacturer. A stiff bristle (not wire) brush may be used to facilitate the removal of dirt.
- Rinse components thoroughly in clean, warm (110° F maximum), preferably running water. Drain.
- When the cleaner used does not contain a disinfecting agent, respirator components should be immersed for two minutes in one of the following:

    - Hypochlorite solution (50 ppm of chlorine) is made by adding approximately one milliliter of laundry bleach to one liter of water at 110° F, or,
    - Aqueous solution of iodine (50 ppm iodine) made by adding approximately 0.8 milliliters of tincture of iodine (6-8 grams ammonium and/or potassium iodide/100cc of 45% alcohol) to one liter of water at 110°F, or,
    - Other commercially available cleansers of equivalent disinfectant quality when used as directed if their use is recommended or approved by the respirator manufacturer.

- Rinse components thoroughly in clean, warm (110° F maximum), preferably running water. Drain. The importance of thorough rinsing cannot be overemphasized. Detergents or disinfectants that dry on face pieces may result in dermatitis. In addition, some disinfectants may cause deterioration of rubber or corrosion of metal parts if not completely removed.
- Components should be hand-dried with a clean lint-free cloth or air-dried.
- Reassemble face piece, replacing filters, cartridges, and canisters where necessary.
- Test the respirator to ensure that all components work properly.

Attachment V
Table 2: Acceptable Fit-Testing Methods

	QLFT	QNFT
Half-Face, Negative Pressure, APR (<100 fit factor)	Yes	Yes
Full-Face, Negative Pressure, APR (<10 fit factor) Used in atmospheres up to 10 times the PEL	Yes	Yes
Full-Face, Negative Pressure, APR (>100 fit factor)	No	Yes
PAPR	Yes	Yes
Supplied-Air Respirators (SAR), or SCBA used in Negative Pressure (Demand Mode) (>100 fit factor)	No	Yes
Supplied-Air Respirators (SAR), or SCBA used in Positive Pressure (Pressure Demand Mode)	Yes	Yes

PERSONAL PROTECTIVE EQUIPMENT (PPE)

PURPOSE

Baker Group is committed to providing a safe and healthy workplace. This program was developed to provide various types of Personal Protective Equipment (PPE) for employee use. The employee is responsible for wearing appropriate personal protective equipment in operations where there is exposure to hazardous conditions or where the need is indicated to reduce hazards. Personal Protective Equipment (PPE) includes safety glasses, splash proof goggles, face shields, hard hats, fall protection, protective gloves, aprons, hearing protection, respiratory protection, appropriate footwear, and other specialized equipment designed to protect Baker Group employees from hazards that cannot be controlled through engineering, administrative, or other work practice means.

SCOPE

This policy has been prepared for the Baker Group workforce and applies to work performed at Baker Group facilities or on customer premises. This practice may be superseded by equivalent or more stringent host employer, controlling contractor, or regulatory requirements.

ACRONYMS, DEFINITIONS, & LANGUAGE

LANGUAGE

Throughout Baker Group defined and recommended practices, the following words have specific meanings,
"Shall" is used when a provision is mandatory.
"Should" is used when a provision is preferred.
"May" is used when alternatives are equally acceptable.

REQUIREMENTS AND PROCEDURES

Inspection and Condition

All PPE is to be inspected by the user prior to wearing it at the beginning of his/her shift to ensure it is in good condition. Any damaged PPE is to be replaced immediately. All PPE shall be kept clean and in good repair. PPE must also be properly stored after being used. This includes high voltage gloves, fall protection, harnesses, arc flash gear, face shields, etc. Inspections, repair, replacement per manufacturer guidelines.

PPE Items

Hard Hats / Safety Helmets (Type II)

- Hard hats must be worn on all construction sites.
- Employees working in areas where there is a possible danger of a head injury from impact, or from electrical shock or burns, shall be protected by hard hats.
- All hard hats are provided by Baker Group and meet the most current American National Standards Institute Standards.
- Hard hats will be replaced per manufacturer recommendations.

Eye and Face Protection

- All Baker Group employees while on the construction sites or in fabrication shops, and while operating equipment must wear safety glasses with side shields.
- Employees who forget their prescription safety glasses must wear over the glasses safety glasses over their street type glasses.

- All eye protection must meet the most current American National Standards Institute Z87.1 2010 OSHA standard.
- Baker Group will furnish each employee with approved eye protection. However, prescription specific glasses will be the responsibility of the wearer. Over glasses are provided by the employer.
- Visitors entering shops where production activities are taking place will be provided safety glasses and, are expected to wear them in posted or designated areas.

Hand Protection

- When task specific gloves are not applicable, a minimum ANSI cut level 2 gloves will be worn.
- Jobsite specific requirements may be more stringent thus the more stringent policy is to be followed.

Foot Protection

- Each employee is responsible for his or her own footwear.
- All employees entering the construction site must wear suitable footwear. It is recommended that this type of footwear be leather type construction boots with ankle support. Baker Group will not allow any type of open toe, side, high heel, or tennis shoes to be worn on construction sites.

Hearing Protection

- Disposable ear plugs are available on the job.
- Hearing protection should be worn any time the noise level in your work area is such that you cannot carry on a normal conversation without raising your voice or where required by the general contractor or owner.
- Visitors entering shops where production activities are taking place will be provided hearing protection (e.g. ear plugs). Visitor exposure is limited, thus hearing protection may be worn on a voluntary basis.

Clothing

- Long pants and shirts with 4” sleeves are required on all construction sites and fabrication areas.
- Shorts and sleeveless shirts are prohibited.
- The wearing of torn, ragged, or loose-fitting clothing is prohibited on our construction sites and fabrication areas.
- Fire resistant (FR) and arc flash rated (AR) PPE will be provide to employees based on employee exposure.

Respiratory Protection

- Please refer to the Baker Group’s Respiratory Protection Program.

TRAINING AND COMPETENCY

Baker Group employees shall receive Personal Protective Equipment training to include selection, use, care and proper fit before initial assignment. The training must be documented including the employee name, the dates of training and the subject. Initial PPE training is conducted during Safety Orientation Training. All training will be document in Baker Group's learning management system, Training Vault. Additional training on PPE is conducted through Toolbox Talks, monthly training topics and anytime deficiencies are found.

SUPPORTING DOCUMENTS

- Baker Group Policy: Respiratory Protection

ASSOCIATED DOCUMENTS AND REFERENCE

The following standard is relevant to this practice:

- OSHA – 1910.132 Subpart I (Personal Protective Equipment)

NOISE EXPOSURE / HEARING CONSERVATION

Noise, or unwanted sound, is one of the most pervasive occupational health problems. It is a by-product of many industrial processes.
Repeated exposure to high levels of noise causes hearing loss and may cause other harmful health effects as well. The extent of hearing loss depends on the frequency and intensity of the noise and on the duration of exposure. Noise-induced hearing loss can be temporary or permanent.
Temporary hearing loss, also called temporary threshold shift, results from short-term exposures to noise, with normal hearing returning after a period of rest. Generally, prolonged exposure to high noise levels over a period of time causes permanent hearing loss. A person who regularly sustains noise-induced temporary threshold shifts eventually will suffer a permanent threshold shift.
Hearing loss is particularly insidious because it occurs very gradually over time. In fact, for a long time the worker may not notice any change in hearing acuity until the hearing loss begins to interfere with everyday communication.
Noise induced hearing loss is not reversible and cannot be treated medically.
Engineering controls are the most effective defense against the hazards of noise. In many instances, however, the application of engineering controls is not feasible due to the configuration of equipment or the tasks being performed. When noise controls are not feasible, or until controls can be installed, an effective hearing conservation program must be emphasized.

PURPOSE

When employee noise exposures equal or exceed the action level of 85 dB, Baker Group shall administer an effective and continuing hearing conservation program. The major mandatory elements for such programs include noise exposure monitoring, audiometric testing, use of hearing protection, and employee training.

The primary objectives of the programs shall be to:
Evaluate noise levels and exposures in the workplace.
Identify job positions with noise exposures equal to or exceeding the action level (85 dBA as an 8-hour time-weighted average), and positions with noise exposures exceeding the permissible exposure limit (90 dBA as an 8-hour time-weighted average).
Provide an effective audiometric testing program for all employees exposed to noise at or above the action level.
Reduce noise exposures that exceed the permissible exposure limit through use of engineering and/or administrative controls when feasible.
Ensure the availability and use of hearing protectors in areas where noise levels exceed 85 dBA, and in job positions exposed at or above the action level, to reduce noise exposures and protect employee hearing capabilities.
Provide an effective training program for all employees exposed to noise at or above the action level.

ACRONYMS, DEFINITIONS, & LANGUAGE

DEFINITIONS

Medical Pathology - A disease or disorder, other than noise-induced hearing loss, that affects the ear and should be treated by a physician.

Presbycusis - Naturally occurring hearing loss that results from aging.

Recordable Hearing Loss - Defined by OSHA in a memorandum dated June 4, 1991 as a work-related change in hearing threshold, relative to the baseline audiogram, of an average of 25 dB or more at 2000, 3000, and 4000 Hz in either ear.

Standard Threshold Shift (STS) - Defined by OSHA as a permanent change in hearing threshold, relative to the baseline audiogram, of an average of 10 dB or more at 2000.

LANGUAGE

Throughout Baker Group defined and recommended practices, the following words have specific meanings,
"Shall" is used when a provision is mandatory.
"Should" is used when a provision is preferred.
"May" is used when alternatives are equally acceptable.

RESPONSIBILITIES

Safety Department

The Safety Department has overall responsibility for the Hearing Conservation Program, and shall ensure that management receives the technical assistance needed to carry out the program effectively.

Management

The management of Baker Group is responsible for ensuring that the Hearing Conservation Program is implemented and administered effectively. This includes assurance of compliance of hearing protection requirements and other aspects of the program.

Employees

The employees' responsibilities are to follow all requirements of hearing protection set forth by this program. Other responsibilities would be to assist management and the Safety Department with recommendations for a safer workplace.

REQUIREMENTS AND PROCEDURES

Noise Exposure Monitoring

Purpose

Sound level measurements and exposure monitoring are necessary to identify high noise areas, employees who must be included in the hearing conservation program, and job positions for which noise controls must be implemented. These activities also enable the proper selection of hearing protectors when they are required.

Procedures

Sound level measurements generally are to be made using standard calibrated sound level meters. However, at times, meters equipped with octave band filter sets may be needed to measure sound levels at specific frequencies as well as impact noises. The information obtained through sound level measurements should be used to support noise exposure monitoring data, identify noise sources, and develop noise control strategies.

Noise exposures should be determined through the use of calibrated audio dosimeters, which are worn by the employees. This approach is referred to as personal monitoring. The audio dosimeters continuously measure and integrate sound levels during the work shift. At the end of the monitoring period, the audio dosimeters are removed from the employees, and the time-weighted average noise exposures are determined.

When it is more expedient to do so, daily noise exposures may be determined using sound level meters and an area monitoring approach. Generally this is done when employees are exposed to relatively constant noise levels throughout the day or to noise levels predominantly below 85 dBA.

If employees work for extended periods of time (e.g., 10 hour shift), the measured noise exposures must be adjusted accordingly.

Frequency of Testing
Following initial assessment, personal noise exposure monitoring should be performed as often as necessary to keep the data current and representative of the existing conditions. In addition, personal exposure monitoring should be performed within 60 days of any significant changes in production, process, equipment, or controls causing increased noise exposures such that: (1) additional employees may be exposed at or above the action level, or (2) the attenuation provided by hearing protectors being used in the area may be rendered inadequate.

Observation of Monitoring
When noise exposure monitoring is performed, employees or their representative must be afforded an opportunity to observe the monitoring procedures.

Notification of Results
Noise exposure monitoring results are to be reported to management in writing. All affected employees must be informed of the results by their supervisor. The results should be shown by job position. A copy of the results also should be provided to the Medical Department or other group responsible for scheduling audiometric testing.

Records Retention
Noise exposure monitoring and sound level measurement records shall be retained for a minimum of five years.

Audiometric Testing and Follow Up

Purpose
Audiometric testing is performed to evaluate employee hearing acuity and confirm that employees are being protected from the potential adverse effects of occupational noise exposure. Audiometric testing ultimately reflects the effectiveness of Baker Group's Hearing Conservation Program.

Scope
All employees who are exposed occupationally to noise at or above the action level (e.g., 85 dBA as an 8-hour time-weighted average) must be tested for hearing acuity. Audiometric testing is available to any employee upon request.

Qualifications
Audiometric tests shall be performed only by a technician certified by the Council of Accreditation in Occupational Hearing Conservation.

Baseline Audiogram
The requirements for establishing baseline audiograms are as follows:

The baseline audiogram is to be established during the pre-placement physical examination, or at the next earliest opportunity if that is not possible.

Each employee shall be required to complete a hearing history questionnaire when the baseline audiogram is established.

Baseline audiometric testing must be performed only when the test period has been preceded by at least 14 hours without exposure to high workplace noise. Hearing protectors may be used to prevent exposure to high noise levels prior to the test. Otoscopic examination should be performed after the audiogram is done.

Subsequent Audiograms
Affected employees must be tested at least annually following establishment of their baseline audiogram or inclusion in the Hearing Conservation Program.

Audiogram Review
The audiometric technician will review each audiogram with the employee in the following manner.

So long as a STS has not occurred with respect to the baseline audiogram, an audiogram showing no hearing thresholds greater than 20 decibel at any frequency may be described as "appears to be essentially normal."

An audiogram with a hearing threshold greater than 20 dB in any frequency may be described as "not normal". The technician may discuss possible causes for the loss, but should not attempt to give a diagnosis or state a cause of the loss.

Audiograms with no change from the baseline audiogram greater than 5 dB in any frequency may be identified as "shows no change."

Any audiogram that shows 20 dB or greater shift at any frequency except 6000, when compared with the previous year's audiogram, shall be repeated, immediately if possible. If the employee shows a threshold shift greater than 10 decibels at any frequency except 6000 and has not been using hearing protection, the technician should schedule a repeat audiogram within 30 days. If the change is confirmed, the audiogram will be referred to the Safety Department for review.

Employees with questions about the explanation(s) for hearing loss should be referred to the Safety Department.

The employee is to sign the audiogram after it has been shown.

Retest
When the employee tested shows a threshold shift, the audiometric technician should schedule a repeat audiogram within 30 days. The employee scheduled for such retest must be tested either when there has been no occupational noise exposure for 14 hours prior to the test or the employee has been wearing hearing protection during the previous 14 hour period. Generally there is no need for such retest if two successive audiograms are essentially identical.

Medical Evaluation and Follow-up
The technician shall forward any audiogram showing an abnormality or a standard threshold shift to the employee’s physician and Safety Department for evaluation. The audiometric technician shall not make a diagnosis with reference to abnormal hearing but should refer all questions to the physician. The physician shall evaluate the audiogram and determine if the audiogram is valid and if a standard threshold shift has occurred. The audiogram shall be corrected for presbycusis (age-induced hearing loss).

Medical Referral
After the examination and evaluation, the employee's physician shall refer the employee for a clinical audiological evaluation or an otological examination, as appropriate, if additional testing is deemed necessary or if the physician suspects that a medical pathology of the ear is caused or aggravated by the wearing of hearing protectors. The Company will pay for such evaluation and examination; however, it is the employee's responsibility to make the appointment.

If the physician suspects that a medical pathology of the ear is unrelated to the use of hearing protectors, he shall inform the employee of the need for an otological examination.

STS Notification
If there is a standard threshold shift, the employee shall be informed of this in writing within 21 days of the audiometric test. Also, the employee shall be requested to make an appointment with a physician for an examination. If subsequent testing of the employee shows that the STS is not persistent and the employee's daily average noise exposure is less than 85 dBA, the employee shall be informed of the new audiometric interpretation and may discontinue the required use of hearing protectors in areas where noise levels are less than 85 dBA.

Revised Baseline Audiogram
If a STS is determined to be persistent, the annual audiogram that first shows the STS shall be substituted for the baseline audiogram in order to avoid continually identifying the same shift. An annual audiogram also may be substituted for a baseline audiogram when a significant improvement in hearing capability is indicated.

Recordable Hearing Loss
Facilities in the U.S. are required by OSHA regulations to record occupational hearing loss on the occupational injury and illness log Form OSHA No. 200, and to complete the supplementary record Form OSHA No. 101. As defined at the beginning of this program, recordable hearing loss is a work-related permanent change in hearing threshold, relative to the baseline audiogram, of an average of 25 dB or more at 2000, 3000, and 4000 Hz in either ear.

When such loss is identified (after adjustment for presbycusis), the audio technician should refer the audiogram to the employee's physician. The physician should review the employee's medical record, review the work history and interview the employee when it is suspected the hearing loss may not be work-related. If the work history and applicable noise monitoring results provide strong and clear indication that the hearing loss is not work-related, it is not necessary to record the case. Simply retain the documentation supporting this decision. However, lacking such strong evidence, a log entry should be made.

Audiometer Requirements
Audiometers shall meet the specifications of American National Standard Specification for Audiometers, S3.6-1969. In addition, pulsed-tone and self-recording audiometers shall meet the specifications shown in 29 CFR 1910.95, Appendix C (Audiometric Measuring Instruments). All audiometric tests shall be pure tone, air conduction, hearing threshold examinations with test frequencies at 500, 1000, 2000, 3000, 4000 and 6000 Hz as a minimum. Each ear shall be tested separately.

Audiometer Calibration and Maintenance
The functional operation of the audiometer shall be checked before each day's use. This may be done by testing a person with known, stable hearing thresholds or by using an electroacoustic ear. A deviation of 10 decibels or greater requires an acoustic calibration of the audiometer. Also, the audiometer's output shall

be checked each day to ensure it is free from distorted or unwanted sounds. A log of the daily checks or the printed output from the electronic testing device shall be kept to prove compliance with this requirement.

At least annually, audiometer calibration shall be checked acoustically. This shall be done in accordance with the specifications shown in 29 CFR 1910.95, Appendix E (Acoustic Calibration of Audiometers). A deviation of 15 decibels or more requires an exhaustive calibration of the audiometer.

At least every two years, the audiometer shall undergo an exhaustive calibration meeting the specifications in sections (4.1.2), (4.1.3), (4.1.4.3), (4.2), (4.4.1), (4.4.2), (4.4.3), and (4.5) of the American National Standard Specification for Audiometers, S3.6-1969.

Audiometric Test Room Requirements

The room or booth in which audiometric tests are performed shall meet the specifications shown in 29 CFR 1910.95, Appendix D (Audiometric Test Rooms). Permanently situated booths shall be checked for compliance with a sound level meter every two years at the time of the exhaustive audiometer calibration. Mobile test booths shall be checked each time they are moved to a new location. In addition, a check shall be made whenever conditions in the area change such that noise levels inside the booth may increase. Test rooms and booths shall not be used unless in compliance.

Records Retention

Audiometric testing program records shall be kept as follows:
Audiograms shall be retained for at least the duration of the affected employee's employment plus 30 years. These records must include:

- Name and job classification of the employee
- Date of the audiogram
- The examiner's name
- Date of the last acoustic or exhaustive calibration of the audiometer
- Employee's most recent noise exposure assessment

Results of background sound pressure level measurements made in the audiometric test room shall be maintained at least 10 years.

Documentation of all audiometer calibrations, including daily functional operation checks, shall be maintained for at least 10 years.

Copies of employee STS notifications shall be maintained for the duration of employment plus 30 years.

Hearing Protection

Purpose

Hearing protectors are used to prevent noise-induced hearing loss when engineering controls (e.g., silencers, enclosures, etc.) are either not effective or feasible.

Scope

Hearing protectors shall be made available to all employees who request them at no cost to the employees. Employees shall be required to wear hearing protectors in all areas where noise levels equal or exceed 85 dBA. Employees are also required to wear hearing protectors when working in job positions that have noise exposures at or above 85 dBA as an 8-hour average.

Selection
Baker Group will provide hearing protection. Employees shall be offered a variety of hearing protectors from which to choose a style that is effective and comfortable. Generally, these will include expanding foam inserts, molded plastic inserts, and ear muffs.

Suitability
When required to be used, hearing protectors must attenuate an employee's noise exposure to an 8-hour time-weighted average below 85 dBA. Therefore, proper selection of a hearing protector, when required, ultimately will depend on that hearing protector's effectiveness in the employee's specific noise environment.

When personal noise exposure monitoring results show that hearing protectors are necessary, the minimum acceptable effectiveness for these devices shall be determined on a job position-specific basis.

Fitting, Use, and Care
Every employee who uses hearing protectors must receive adequate training on their fitting, use, and care.

Compliance
Where hearing protectors are required to be used, it is the responsibility of supervision to ensure that all affected employees comply with the requirement.

TRAINING AND COMPETENCY

Purpose
Training is provided to enhance the knowledge of employees regarding occupational noise exposure, personal protection, and audiometric testing, as well as to promote employee participation in the hearing conservation program.

Scope
All employees who are exposed to noise at or above an 8-hour time-weighted average of 85 dBA (the action level) must receive training.

Frequency
Each affected employee must be trained before initial assignment at least annually thereafter. Additionally, training will be updated as if/when PPE requirements and work processes change requiring additional instruction on the proper use and fit of hearing protectors.

Content
As a minimum, employee training must cover the following:

- The effects of noise on hearing.
- An explanation of the purpose and procedures for audiometric testing.
- The purpose of hearing protectors.
- The advantages, disadvantages, and attenuation of various types of hearing protectors.
- Instructions on the selection, fitting, use, and care of hearing protectors.

Documentation
Training must be documented in writing to prove that it was done. The employee’s signature should appear on the documentation form.

The Hearing Conservation Program should be audited periodically to ensure that all aspects are being carried out properly. Audits should cover such things as noise exposure monitoring efforts, audiometric testing and training frequency, audiometric test equipment calibration and maintenance, hearing protection use, and records retention. This will be done by the Safety Department. If deficiencies are found, it is extremely important to correct them quickly and document their resolution.

SUPPORTING DOCUMENTS
ASSOCIATED DOCUMENTS AND REFERENCE

Confined Space Entry

PURPOSE

To set forth practice requirements and procedures to guide Baker Group's workforce engaged in confined space entry (CSE) activities and comply with applicable regulations. CSE can be a high risk activity.

SCOPE

This practice has been prepared for the Baker Group workforce and applies to work performed at Baker Group facilities (fabrication shops) or jobsites (customer premises). This practice may be superseded by equivalent or more stringent host employer, controlling contractor, or regulatory requirements.

ACRONYMS, DEFINITIONS AND LANGUAGE

Throughout Baker Group defined and recommended practices, the following words have specific meanings:

'Shall' is used when a provision is mandatory.
'Should' is used when a provision is preferred.
'May' is used when alternatives are equally acceptable

Acceptable entry conditions – conditions that must exist in a space, before an employee may enter that space, to ensure that employees can safely enter into, and safely work within, the space.

Blanking or blinding – the absolute closure of a pipe, line, or duct by the fastening of a solid plate that completely covers the bore and that is capable of withstanding the maximum pressure of the pipe, line, or duct with no leakage beyond the plate.

Confined Space – a space that: (1) is large enough and so configured that an employee can bodily enter and perform assigned work; (2) has limited or restricted means for entry or exit; (3) is not designed for continuous employee occupancy.

Control – action taken to reduce the level of any hazard inside a confined space using engineering methods (for example, by ventilation), and then using these methods to maintain the reduced hazard level. Personal protective equipment is not a control.

Engulfment – the surrounding and effective capture of a person by a liquid or finely divided solid substance that can be aspirated to cause death by filling or plugging the respiratory system or that can exert enough force on the body to cause death by strangulation, constriction, crushing, or suffocation.

Entry – the action by which a person passes through an opening into a permit-required confined space. Entry includes ensuing work activities in that space and is considered to have occurred as soon as any part of the entrant's body breaks the plane of an opening into the space.

Entry Permit – the written or printed document that is provided by the employer to allow and control entry into a permit space.

Entry Rescue – occurs when a rescue service enters a permit space to rescue one or more employees.

Hazardous atmosphere – an atmosphere that may expose employees to the risk of death, incapacitation, impairment of ability to self-rescue, injury, or acute illness from one or more of the following causes: (1) flammable gas, vapor, or mist in excess of 10% of its lower flammable limit (LFL); (2) Airborne combustible

dust at a concentration that meets or exceeds its LFL; (3) atmospheric oxygen concentration below 19.5% or above 23.5%; (4) atmospheric concentration of any substance for which a dose or a permissible exposure limit is published in subpart D or Z. (5) any other atmospheric condition that is immediately dangerous to life or health.

Immediately Dangerous to life or Health (IDLH) – any condition that poses an immediate or delayed threat to life or that would cause irreversible adverse health effects or that would interfere with an individual's ability to escape unaided from a permit space.

Monitor or Monitoring – process used to identify and evaluate the hazards after an authorized entrant enters the space. This is a process of checking for changes that is performed in a periodic or continuous manner after the completion of the initial testing or evaluation of that space.

Non-entry Rescue – occurs when a rescue service, usually the attendant, retrieves employees in a permit space without entering the permit space.

Non-permit Confined Space – a confined space that meets the definition of a confined space but does not contain the hazards associated with a permit-required confined space.

Permit-required Confined Space – a confined space that has one or more of the following characteristics: (1) contains or has the potential to contain a hazardous atmosphere; (2) contains a material that has the potential for engulfing an entrant; (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; or (4) contains any other recognized serious safety or health hazard.

Permit System – the employer's written procedure for preparing and issuing permits for entry and for returning the permit space to service following termination of entry.

Rescue – Retrieving and providing medical assistance to one or more employees who are in a permit space.

Rescue Service – the personnel designated to rescue employees from the permit spaces.

Testing – the process by which the hazards that entrants may confront in a permit space are identified and evaluated prior to entering the space. Testing includes specifying the tests that are to be performed in the permit space.

RESPONSIBILITIES

Baker Group Confined Space Entry Responsibilities

Competent Person – before beginning work a competent person must identify and evaluate all confined spaces in which employees are directed to perform work. The competent person has the authority and shall determine a space to be classified as 1) permit required confined space; 2) non-permit required confined space; 3) alternate entry space; 4) or at any time reclassify the space. The competent person must be capable of identifying existing and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has the authorization to take prompt corrective measures to eliminate them.

Entry Supervisor – a competent person responsible for determining if acceptable entry conditions are present at a permit space where entry is planned. The entry supervisor organizes and supervises all entry operations, including termination of entry. Responsibilities include obtaining equipment for safe entry,

ensuring 4 gas air monitors are calibrated, communication devices are in place, permits are completed, and reassess conditions throughout entry.

Attendant – a qualified person who shall be stationed outside of the space, understand the hazards associated with the space, maintain communication with the entrant, contact rescue service if necessary, perform non-entry rescue and perform no duty that may interfere with the duty to monitor and protect the entrants.

Authorized Entrant – a qualified person shall be trained in confined spaces, able to identify hazards in these spaces, and competency in use of equipment during entries, properly use all required equipment, communicate with the attendant and exit from the permit space as directed or when a prohibited condition arises.

Exposed Employees – employees that work in areas where confined spaces are present shall be aware of the existence, location and hazards posed by confined spaces, but are unauthorized to enter.

Additional responsibilities when performing work at sites with multiple employers (Baker Group may be one and/or more of the following roles)

Host Employer (typically the customer) – the employer that owns or manages the property where the construction work is taking place. Host employer shall inform the controlling contractor of any and all confined spaces they are aware of. Known hazards and experiences associated with these spaces shall also be part of that communication. The host employer shall notify Baker Group of any precautions or procedures that their employees have implemented for the protection of Baker Group's employees in or near permit spaces where Baker Group employees will be working. Entry operations shall be coordinated with Baker Group, when both the owner's employees and Baker Group's employees will be working in or near the permit space as required. The host employer shall be debriefed by Baker Group at the conclusion of the entry operation on the permit space program followed in regards to hazards confronted or created in permit spaces during entry operations.

Controlling Contractor (typically general contractor or construction manager, may be Baker Group)- the employer that has overall responsibility for construction at the worksite. Information regarding the space must then be communicated to the entry employer. If Baker Group is the controlling contractor, we shall obtain any information regarding permit space hazards and entry operations from the owner.

Entry Employer (typically Baker Group) – an employer who decides that an employee it directs will enter a permit space. Entry employer shall train authorized entrants of the hazards before work begins. If Baker Group is the entry employer, we shall obtain information regarding permit space hazards and entry operations from the owner or controlling contractor. We shall inform the controlling contractor of the permit space program that we will follow. Classification, testing, and monitoring shall be done by Baker Group, unless the host employer or controlling contractor requires an alternative, more stringent procedure. Once work is completed, if any additional hazards are found, they shall be reported back to the controlling contractor or owner.

REQUIREMENTS AND PROCEDURES

Pre-Task Plan Risk Assessment

Prior to entering a confined space, perform pre-task planning: hazard identification; risk assessment; safety conversation with affected team members to discuss job task(s), the hazard(s) associated with them, and

the preventative and control measures resulting from the risk assessment; including identifying confined spaces and designating the classification (non-permit, alternate entry, or permit required).

Controlling Access to the Space

Controlling of access to the space needs to be considered at all times while under Baker Group control. The space should be identified and protected from unauthorized entry. The opening shall be immediately guarded by a railing, temporary barrier (cover, barricade) or other adequate means. The entrant's safe access to the space shall be considered and maintained.

Securement of the Space

Confined space work in active roadways may require additional steps to protect the space and employees.

Spaces in an elevated position (pipe spools, duct, and tanks) must be evaluated for adequate support and securement (hangers, pipe stand, rigging, and platforms) of the space prior to entry.

Atmospheric Testing and Continuous Monitoring

Each employee involved with confined space entry shall be trained and qualified to operate monitoring equipment. Before entry into a confined space, the atmospheric conditions shall first be checked to ensure that acceptable entry conditions exist in the space. Only approved and calibrated direct-reading monitoring equipment shall be used to test for 1) oxygen; 2) combustible gas and vapors; 3) toxic gases and vapors. Continuous air monitoring shall be performed to ensure acceptable conditions are maintained during the course of entry. Calibration shall occur per manufacturer's requirements, for example the BW Quattro requires calibration every 180 days. Inspection of the monitoring equipment is conducted before the equipment is distributed for use and before every use.

Determining Classification of Space

All confined spaces shall be evaluated by a competent person through monitoring and inspection to be accurately classified as one of the following:

1. Non-permit space
2. Alternate entry space
3. Reclassified space
4. Permit-required space

Regardless of classification, all spaces shall have documentation of space determination, whether it is a permit, a reclassification form or documentation in daily pre-task planning (for non-permit and alternate entry).

Alternate Entry Procedure

An alternate entry procedure occurs when after evaluation the only existing or potential hazard is atmospheric and can be controlled through forced air ventilation. Continuous forced air ventilation alone is sufficient to maintain the space safe for entry. If ventilation stops, work stops. The atmosphere within the space must be continuously monitored and show that ventilation is controlling the hazard.

Reclassified Space

A reclassified space is a space that has no actual or potential atmospheric hazard and all hazards in space can be corrected without entry, testing, and inspection during entry shows hazards in the space have been

eliminated. If the permit-required space is to be reclassified to non-permit, the hazards that are identified and eliminated shall be documented on the confined space reclassification form. If at any time a hazard returns, all personnel shall evacuate the space, and the space shall be reevaluated and classified as a permit-required space.

Permit-Required Confined Space Entry

A permit required confined space contains one or more of the following characteristics:

1. An actual or potential hazardous atmosphere
2. Material that has the potential for engulfing an entrant
3. An internal configuration that could trap or asphyxiate an entrant
4. Any other recognized serious safety or health hazards (hazards that are immediately dangerous to life or health and interfere with ability to escape unaided)

The following requirements apply to permit-required entries.

Pre-entry briefing and space preparation (PRCS)

All PRCS, require the need for training of all participants to enter the space. The training shall cover controlling atmospheric and engulfment hazards, surveying surrounding areas for monitoring, test of the atmosphere, entry procedures and rescue operations. All spaces shall also maintain a written copy of tasks to be performed, non-entry or entry rescue procedures, and permits for the duration of the work. Before entering, the controlling contractor shall obtain from the Host Employer the location of the known confined spaces and hazards associated with them. Those hazards shall be communicated to the entry team. The entry team will then go through the Baker Group permitting process.

Permitting Process

Permitting starts once the space is determined to be a permit required space entry. The permit shall be filled out and signed by the entry supervisor. The permit shall identify all known hazards as discussed with the controlling contractor. The controlling contractor shall initial permit to show hazards have been communicated to the entry supervisor. The supervisor should be in communication with the crew to ensure practices are being followed. At all times during a confined space entry, there shall be continuous monitoring of the air.

If additional atmospheric hazards are introduced causing monitor to alarm, allow for ventilation of the space to occur before retesting the atmosphere for entry. If a customer requests the use of their permit for confined space entries, as long as it meets all requirements of Baker Group's confined space entry, you may fill out the customers permit in place of Baker Group's. contact your safety manager to see if both permits contain similar information.

Isolation

Any physical hazards within the space – moving parts, pipes, pumps, or lines that could cause contaminants to flow into space shall be disconnected, shut down and locked out, physical barrier set in place, blanking and bleeding, disconnecting mechanical drives, or otherwise effectively isolated. This allows for the space to be isolated from any additional hazards within the space while work is performed.

Early Warning System

When in a space, early warning systems shall be in place to provide awareness of potential engulfment hazard developing, giving the entrants an opportunity to escape. Early warning systems can consist of alarms tied to remote sensors or co-workers equipped with communication devices (radios) to alert entrants of hazard. Warning systems should be upstream of the work to alert co-workers of any hazards that will be coming towards them while they are in the space.

Ventilation

Ventilation systems shall be used in spaces that have or may contain a hazardous atmosphere. Outside air shall be provided for forced air ventilation into the space to remove harmful gases, vapors, and inert gases. Employees should try to open other openings into the space to allow for increase air circulation. When covers are removed, if it presents a fall hazard to others on the job site – including the attendant – then a method of fall protection shall be put in place. If the ventilation system stops working or if the four gas monitor alarms for any reason, all worker(s) shall exit the space until adequate ventilation is restored.

If a hazardous atmosphere cannot be controlled by ventilation, then personal respiratory protection may be necessary for safe entry.

Communication Devices

Communication devices like two-way radios shall be available for entrant and stand-by employees at all times. Devices may need to be rated intrinsically safe if operating in a potentially explosive atmosphere.

Suspension, Closing and/or Canceling of Permits

Suspension of confined space entry permits may occur. If additional hazards are identified during entry, or an air monitor alarms, the employee shall leave the space immediately. The current permit should then be suspended. The permit shall be updated to show the new hazards identified in the space. Once hazards are controlled or eliminated, the same permit may be reopened and used as before. The atmosphere shall be retested before entry. The permit then can be used for duration of work or unless another hazard presents during entry operations. Permits may also be closed or canceled at any time instead of suspending. If the competent person determines due to new or existing hazards that have been identified the entrant to be endangered, the entrant(s) shall leave the space and the permit should be closed and the space reevaluated. Return all closed permits to the safety department.

Rescue and Emergency Services

Non-Entry Rescue

Non-entry rescue is a system designed to remove a co-worker from a space without entering. The system shall have a full-body harness for vertical entry or ankle straps for horizontal entry, a retrieval line attached to an anchor point attached to a mechanical device or fixed point outside the permit space to allow for rescue as soon as deemed necessary. All rescues performed by Baker Group employees shall be non-entry rescues only. An attendant shall be in constant contact with the workers in the space and have no other duties but to be an attendant. Rescue equipment (example – tripod, retrieval system, etc.) shall be visually inspected prior to use and per the manufacturer's recommendations.

Emergency Services Coordination

Coordinate with local emergency services. Make local services aware of entry to provide a backup to non-entry rescue, determine if they have particular rescue capabilities. Local emergency services may not be able to be relied on as first form of rescue.

Third Party Entry Rescue Service

In evaluating a space, if it is determined that non-entry rescue will NOT be sufficient, then an emergency rescue service shall be necessary and obtained. The entry rescue service shall show the ability to respond in a timely manner and workers with the hazards identified, perform the rescue in the identified space, and equipped to perform rescue with hazards that are present. If the entry rescue service is unavailable, they shall immediately notify the entry supervisor that they are unable to provide rescue. Work shall be suspended until service becomes available again. Safety manager will lead coordination for third party emergency rescue services.

TRAINING AND COMPENTENCY

All employees exposed to confined spaces shall be trained in the Baker Group confined space entry program. The safety department will determine acceptable methods of training. Training shall be documented as instructed within the Baker Group program. All employees exposed to confined spaces shall be trained on identification and procedures for work in and around confined spaces, as well as specific roles in confined space entry procedure. A competency test or evaluation shall be done to ensure Baker Group employees understand the requirements of this practice.

SUPPORTING DOCUMENTS

Reclassification Form
Confined Space Entry Permit

ASSOCIATED DOCUMENTS AND REFERENCES

The following practice contain relevant content to this practice and should be consulted to support the implementation of the requirements outlined in this practice.

Lockout – Tagout
Hot Work
Respiratory Protection

- In the rare case that a permit-required space cannot be fully ventilated to eliminate an atmospheric hazard, respirators may need to be used. Contact your safety manager before choosing respirators as your method of controlling these hazards. As with all respirators, only individuals who have had a medical evaluation, fit test, and have been properly trained in use and care of respirators, are authorized to use them. There are two basic types of respirators: air-purifying and air-supplying. Only air-supplying respirators shall be used in confined spaces where there is not enough oxygen.

The following standards are relevant to this practice.
OSHA standard – 1926.1200 confined spaces in construction

DOCUMENT MANAGEMENT

Maintain inventory of canceled permits for at least one (1) year for review of program

Electrical Equipment Usage (Assured Grounding)

PURPOSE

To set forth practice requirements and procedures to guide Baker Group's workforce and establish minimum standards to prevent hazardous electrical exposures to personnel and ensure compliance with regulatory requirements. This program is designed to help ensure that Baker Group employees are trained and provided with the appropriate safe work procedures, protective equipment and other controls. The program is intended to protect employees against electrical shock, burns, and other potential electrical safety hazards.

SCOPE

This practice has been prepared for the Baker Group workforce and applies to work performed at Baker Group facilities (fabrication shops) or jobsites (customer premises). This practice may be superseded by equivalent or more stringent host employer, controlling contractor, or regulatory requirements.

ACRONYMS, DEFINITIONS AND LANGUAGE

Throughout Baker Group defined and recommended practices, the following words have specific meanings:

- 'Shall' is used when a provision is mandatory.
- 'Should' is used when a provision is preferred.
- 'May' is used when alternatives are equally acceptable

Competent lockout/tagout employee – a person who has completed the required electrical hazard awareness training and is authorized to lockout or tagout a specific machine or equipment to perform service or maintenance. All Baker Group employees performing lockout/tagout must be trained in: Electrical Safety/Lockout/Tagout Training.

Equipment – specific procedures (if applicable)

Confined Space – an enclosed space which has limited egress and access, and has an atmospheric hazard (e.g., explosive atmosphere or asphyxiating hazard) and/or other serious safety hazards (e.g., electrical hazard).

Damp Location – partially protected locations subject to moderate degrees of moisture, such as some basements.

De-energized electrical work – electrical work that is performed on equipment that has been previously energized and is now free from any electrical connection to a source of potential difference and from electrical charges.

Disconnecting (or isolating) switch – a device designed to close and/or open an electric circuit.

Dry location – locations not normally subject to dampness or wetness, as in the case of a building under construction.

Energy Source – any source of electrical, mechanical, hydraulic, pneumatic, chemical, thermal, other energy.

Exposed electrical parts – energized parts that can be inadvertently touched or approached nearer than a safe distance by a person. Parts not suitably guarded, isolated, or insulated. Examples include terminal contacts or lugs, and bare wiring.

Ground fault circuit interrupt (GFCI) – a device whose function is to interrupt the electric circuit to the load when a fault current to ground exceeds a predetermined value that is less than that required to operate the over-current protective device of the supply circuit.

Ground – a conducting connection, whether intentional or accidental, between an electrical circuit or equipment and the earth or to some conducting body that serves in place of the earth.

Hazardous Location – an area in which an airborne flammable dust, vapor or gas may be present and would represent a hazard if a source of ignition were present (see national fire protection association (NFPA) class I & II and division 1&2).

Interlock – an electrical, mechanical, or key-locked device intended to prevent an undesired sequence of operations.

Isolating switch – a switch intended for isolating an electric circuit form the source of power. It has no interrupting rating and is intended to operate only after the circuit has been opened by some other means.

Lockout – the placement of a lock on an energy-isolating device according to procedure, ensuring that the energy isolating device and the equipment being controlled cannot be operated until the lockout device is removed.

Lockout/Tagout – a standard that cover the servicing and maintenance of machines and equipment in which the unexpected re-energization of the equipment or release of stored energy could cause injury to employees. It establishes performance requirements for the control of such hazardous energy.

Remote-control circuit – any electric circuit that controls any other circuit through a relay or an equivalent device.

Service – the conductors and equipment for delivering energy from the electricity supply system to the wring system of the premises served.

Service equipment – the necessary equipment, usually consisting of a circuit breaker or switch and fuses, and their accessories, located near the entrance of supply conductors to the building and intended to constitute the main control and means of cutoff of the supply.

Setting up – any work performed to prepare a machine or equipment to perform its normal production operation.

Switching devices – devices designed to close and/or open one or more electric circuits. Included in this category are circuity breakers, cutouts, disconnecting (or isolating) switches, disconnecting means, interrupter switches, and oil (filled) cutouts.

Tagout – the placement of a tagout device on an energy-isolating device according to procedure to indicate that the equipment may not be operated until the tagout device is removed.

Voltage (of a circuit) – the greatest root-mean-square (effective) difference of potential between any tow conductors of the circuit concerned.

Voltage, nominal – an approximate value assigned to a circuit or system for the purpose of conveniently designating its voltage class, e.g., 120/240, 480/277, and 600.

Wet location – installations subject to saturation with water or other liquids.

RESPONSIBILITIES
REQUIREMENTS AND PROCEDURES

Electrical Hazards
Electricity related hazards include electric shock and burns, arc-flash burns, arc-blast impacts, and falls.

Electric shock and burns – an electric shock occurs when electric current passes through the body. This can happen when touching an energized part. If the electric current passes across the chest or head, death can result. At high voltages, severe burns can result.

Arc-flash burns – an electric arc flash can occur if a conductive object gets too close to a high-amp current source or by equipment failure (for instances, while opening or closing disconnects). The arc can heat the air to temperatures as high as 35,000° F, and vaporize metal in the equipment. The arc flash can cause severe skin burns by direct heat exposure and by igniting clothing.

Arc-blast impacts – the heating of air and vaporization of metal creates a pressure wave that can damage hearing and cause memory loss (from concussion) and other injuries. Flying metal parts are also a hazard.

Falls – Electric shocks and arc blasts can cause falls, especially from ladders or unguarded scaffolding.

Electrical Safety Principles – Energized Condition
De-energize whenever possible.
Plan every job. The approach and step-by-step procedures to complete the work at hand must be discussed and agreed upon between all involved employees before beginning. Write down first-time procedures. Discuss hazards and procedures in a job briefing with supervisor and other workers before starting any job.
Identify the hazards. Conduct a job hazard analysis. Identify steps that could create electric shock or arc-flash hazards.
Minimize the hazards. De-energize any equipment, and insulate, or isolated exposed live parts so contact cannot be made.
Anticipate problems. If it can go wrong, it might. Make sure the proper PPE and tools are immediately available for the worst-case scenario.
Obtain training. Make sure all involved employees are qualified with appropriate training for the job.

Portable Electrical Equipment and Extension Cords
The following requirements apply to the use of cord and plug connected equipment and flexible cord sets (extension cords):

- Extension cords may only be used to provide temporary power.
- Portable cord and plug connected equipment and extension cords must be visually inspected before use on any shift for external defects such as loose parts, deformed and missing pins, or damage to outer jacket or insulation, and for possible internal damage such as pinched or crushed outer jacket. Any defective cord or cord and plug connected equipment must be removed from service and no person may use it until it is repaired and tested to ensure it is safe for use.

- Extension cords must be of the three-wire type. Extension cords and flexible cords must be designed for hard or extra hard usage (for example types S,ST, and SO).
- Job made extension cords are forbidden per the electrical code.
- Personnel performing work on renovation or construction sites using extension cords or where work is performed in damp or wet locations must be provided, and must use, a ground-fault circuit interrupter (GFCI).
- Portable equipment must be handled in a manner that will not cause damage. Flexible electric cords connected to equipment may not be used for raising or lowering the equipment.
- Extension cords must be protected from damage. Sharp corners and protrusions must be avoided. Flexible cords may not be run through windows or doors unless protected from damage, and then only on a temporary basis.
- Flexible cords may not be run above ceilings or inside or through walls, ceilings or floors, and may not be fastened with staples or otherwise hung in such a fashion as to damage the outer jacket or insulation.
- Cords must be covered by a cord protector or tape when they extend into a walkway or other path of travel to avoid creating a trip hazard.
- Extension cords used with grounding type equipment must contain an equipment grounding conductor (i.e., the cord must accept a three-prong , or grounded plug).
- Attachment plugs and receptacles may not be connected or altered in any way that would interrupt the continuity of the equipment grounding conductor. Additionally, these devices may not be altered to allow the grounding pole to be inserted into current connector slots. Clipping the grounding prong from an electrical plug is prohibited.
- Flexible cords may only be plugged into grounded receptacles. The continuity of the ground in a two-prong outlet must be verified before use. It is recommended that the receptacle be replaced with a three-prong outlet. Adapters that interrupt the continuity of the equipment grounding connection may not be used.
- All portable electric equipment and flexible cords used in highly conductive work locations ,such as those with water or other conductive liquids, or in places where employees are likely to contact water or conductive liquids, must be approved for those locations.
- Employee's hands must be dry when plugging and unplugging flexible cords and cord-and-plug connected equipment if energized equipment is involved.
- If the connection could provide a conducting path to the employees hands (for example if a cord connector is wet from being immersed in water), the energized plug and receptacle connections must be handled only with insulating protective equipment.
- Locking type connectors must be properly locked into the connector.
- Lamps for general illumination must be protected from breakage, and metal shell sockets must be grounded.
- Temporary lights must not be suspended by their cords unless they have been designed for this purpose.
- Extension cords are considered to be temporary wiring and must also comply with the section on "requirements for temporary wiring" in this program.

GFCI Assured Equipment Grounding Requirements

Daily Visual Inspection

A visual inspection shall be performed daily for the following on each piece of equipment that is used: cord sets, attachment cap, plug and receptacle of cord sets and any other equipment connected by cord and

plug. Equipment found to be damaged should be tagged and removed from service. This inspection shall be done in accordance with our daily job site pre-task planning.

Quarterly Testing

Grounding conductors tested for continuity shall be electrically continuous. Each receptacle and attachment cap or plug shall be tested for correct attachment of the equipment grounding conductor. The equipment grounding conductor shall be connected to its proper terminal. The above required tests shall be performed before first use, before equipment is returned to service following repairs, and before equipment is used after any incident which can be reasonably suspected to have caused damage (example: when cord is run over or crushed). Cord sets and receptacles, which are fixed and not exposed to damage shall be tested at three (3) month intervals.

Suggested Testing Procedures

Receptacles – use a receptacle tester to determine correct connections to terminals.

Cord Sets – first, plug the cord set into properly wired receptacle, which has been tested as above. Then plug receptacle tester into cord connector (receptacle) of cord set to determine continuity of grounding conductor and correct connections to terminals.

Cord and Plug Connected Equipment – use continuity tester. Connect or touch one terminal of continuity tester to the metal frame of the equipment or tool and the other terminal to the grounding prong of the attachment cap plug at the end of the cord. A visual(light) signal of the tester indicates that there is continuity of the grounding conductor. We further suggest that this test also be made between the metal frame and each of the other two prongs of the attachment cap plug. If there is signal from this test, it indicates a possible ground fault, and the tool should be checked further.

Double insulated tools – visually inspect all double insulated tools for cracks, cuts burns, etc. Damage to the casing of a double insulated tool shall be considered defective and taken out of service.

The test may be performed quarterly either at the job site or taken to the shop for testing. Don't forget the requirements of these standards also apply to tools and cord sets owned by employees and used at the site. Under the OSHA law, the employer has the responsibility to see that its employees comply even when using their own tools and equipment.

Color Code by Quarters

- Quarter 1 January 1 – March 31 White
- Quarter 2 April 1 – June 30 Green
- Quarter 3 July 1 – September 30 Red
- Quarter 4 October 1 – December 31 Orange

Color identifications to be of affixed colored tape adhered to one end of the cord sets and cord-and-plug connected equipment. At the beginning of a new quarter, the previous quarter's color should be removed before the new quarter's color is applied.

Wet or Damp Locations

Work in wet or damp locations (e.g., areas surrounded or near water or other liquids) should not be performed unless it is critical. Electrical work should be postponed until the liquid can be cleared up. The following special precautions must be incorporated while performing work in damp locations:

- Only use electrical cords that have GFCIs;
- Remove standing water before beginning work. Work is prohibited in areas where there is standing water;
- Do not use electrical extension cords in wet or damp locations; and
- Keep electrical cords away from standing water.

Working on De-energized Equipment

The most important principle of electrical safety is to assume all electric circuits are energized. Only qualified employees shall de-energize equipment. See arc flash policy for details.

Personal Protective Equipment

Employees working in areas where there are potential electrical hazards must be provided with and use personal protective equipment (PPE) that is appropriate for the specific work to be performed. The electrical tools and protective equipment must be specifically approved, rated, and tested for the levels of voltage of which an employee may be exposed.

Employees shall wear nonconductive head protection whenever there is a danger of head injury from electric shock or burns due to contact with live parts or from flying objects resulting from an electrical explosion.

Employees shall wear protective equipment for the eyes whenever there is a danger of injury from electric arcs, flashes, or from flying objects resulting form an electrical explosion.

Employees shall wear rubber insulating gloves where there is a danger of hand or arm contact with live parts or possible exposure to arc flash burn. Leather 'protector' gloves shall be worn over the rubber insulating gloves.

Face shields without arc rating shall not be used for electrical work. Safety glasses or goggles must always be worn underneath face shields.

Additional illumination may be needed when using tinted face shields as protection during electrical work.

Electrical protective equipment must be selected to meet the criteria established by the American Society of Testing and Materials (ASTM) and by the America National Standards Institute (ANSI).

Insulating equipment made of materials other than rubber shall provide electrical and mechanical protection at least equal to that of rubber equipment.

PPE must be maintained in a safe, reliable condition and be inspected for damage before each day's use and immediately following any incident that can reasonably be suspected of having caused damage.

Employees must use insulated tools and handling equpmetn that are rated for the voltages to be encountered when working near exposed energized conductors or circuit. Tools and handling equipment should be replaced if the insulating capability it decreased due to damage. Protective gloves must be used when employees are working with exposed electrical parts above 50 volts.

Protective shields, barriers or insulating materials must be used to protect each employee from shock, burns, or other electrical injuries while that person is working near exposed energized parts that might be accidentally contacted or where dangerous electric heating or arcing might occur.

Any electrical enclosure that is labeled as Hazard Category DANGEROUS cannot be opened or worked in at any time. The only contractors who have permission to de-energize, verify a zero energy state, and perform any tasks in hazard category DANGEROUS enclosures are medium/high voltage specialists.

Access Limiting Equipment

Barricades shall be used in conjunction with safety signs to prevent or limit access to work areas containing live parts. Conductive barricades shall not be used where they might cause an electrical hazard. These barricades are designed to prevent un-qualified and/or unprotected workers from entering the electrical hazard area.

Working Spaces

OSHA requires a minimum of 36" of clear space be kept in front of all electrical enclosures to ensure safe, efficient access in the event of an emergency, and to allow proper heat ventilation form the enclosure.

Illumination

Illumination shall be provided for all working spaces about service equipment, switchboards, panel boards, or motor control centers installed indoors. Additional lighting outlets shall not be required where the work space is illuminated by an adjacent light source. In electrical equipment rooms, the illumination shall not be controlled by automatic means only.

Lockout/Tagout

When locking out energized equipment follow Baker Group's lock out tag out policy.

TRAINING AND COMPENTENCY

Workers near energized, or potentially energized electrical circuitry of 50 volts to ground or greater, shall be trained in energized electrical safe work practices and procedures and retrained as necessary.

Documentation of training and experience

Baker Group will document that all required training has been provided. Training sign-in sheets will be part of this documentation. Training certificates, provided by the vendor performing the training, will be kept in the employee's file.

SUPPORTING DOCUMENTS

ASSOCIATED DOCUMENTS AND REFERENCES

Baker Group's lock out tag out policy

Arc Flash

PURPOSE

This program describes the work practices necessary to eliminate or control hazards associated with work performed on or near energized and de-energized electrical equipment and circuits rated or operating between 50 volts and 600 volts. This policy is intended to meet the requirements of subpart S, Electrical Safety Related Work Practices, 29 CFR 1910.331 – 335, and 29 CFR 1910.137 Electrical Protective Equipment, and NFPA 70E (2021).

SCOPE

Provisions of these standards cover electrical safety, related work practices for both qualified persons (those who have training in avoiding electrical hazards) and unqualified persons (those with little or no such training) working on or near premises wiring and wiring of connections to a power supply. These standards include the training requirements for all Baker Group employees who face a risk of electric shock or other electrical hazards. These standards also apply to the proper use of cord and plug connected equipment, including extension cords.

ACRONYMS, DEFINITIONS AND LANGUAGE

Arch Flash Hazard – a dangerous condition associated with the release of energy caused by an electric arc.

Arc Rating – the maximum incident energy resistance demonstrated by a material prior to break open or at the onset of a second-degree skin burn. Arc rating is normally expressed in cal/cm^2 and all work performed on energized components with calculated incident energy levels above 1.2 cal/cm^2 will require the use of flame retardant clothing and PPE.

Approach Boundaries – Employees must maintain a safe distance from electrical equipment to prevent shock and arc flash injuries. The distances are listed in Table A and are posted on panel board labels. These consist of the Limited, Restricted, Prohibited, and Flash Protection Boundaries.

Electrical Hazard – A dangerous condition such that contact or equipment failure can result in electric shock, arc flash burn, thermal burn, or blast.

Electrical single line diagram – a diagram that shows, by means of single conductors and graphic symbols, the course of an electric circuit or system of circuits and the component devices or parts used in the circuit or system.

Electrically safe work condition – a state in which the conductor or circuit part to be worked on or near has been disconnected from energized parts, locked/tagged in accordance with established standards, tested to ensure the absence of voltage, and grounded if determined necessary.

Exposed energized parts – electrical equipment and circuits that are not guarded or isolated, that is electrically connected toa source of potential difference, or electrically charged so as to have a potential significantly different from earth.

Arc rated garments (AR) – the property of a material whereby combustion is prevented, terminated, or inhibited following the application of a flaming or non-flaming source of ignition, with or without subsequent removal of the ignition source. FR rated clothing shall be worn where there is burn exposure levels above 1.2 cal/cm^2 in calculated incident energy.

Ground fault circuit interrupter – a device intended for the protection of personnel that functions to de-energize a circuit or the portion within an established period of time when a current to ground exceeds the values established for a class A device.

Incident energy – the amount of energy impressed on a surface, a certain distance from the source, generated during an electrical arc event. One of the units used to measure incident energy are calories per centimeter squared.

Labeled – equipment or materials to which has been attached a label, symbol, or other identifying mark of an organization that is acceptable to the authority having jurisdiction and concerned with product evaluation, that maintains periodic inspection of production of labeled equipment or materials, and by whose labeling the manufacturer indicates compliance with appropriate standards or performance in a specified manner (i.e. Underwriters Lab).

Personal protective equipment – Electrical. For shock protection, E rated hard hat, natural material underwear (cotton). Flame-resistant work uniform (shirt and pants), safety glasses, shaded face shield, and arc flash suit if required for incident energy available.

Qualified Person – an employee who is knowledgeable in the construction and operation of the electric utilization equipment in the plant and has been trained in how to recognize and avoid the electrical hazards of working on or near exposed energized parts as listed in the training section of this policy. Skill levels and training requirements for qualified persons are discussed in section 4.

Note: an employee who is undergoing on-the-job training and who has demonstrated an ability to perform duties safely at their level of training and who is under the direct supervision of a qualified person is considered to be a qualified person for the performance of those duties.

Note: it is possible for an individual to be considered qualified on certain equipment, but unqualified as to other equipment.

Unqualified Person – an employee who has little or no training in avoiding the electrical hazards of working on or near exposed energized parts. However, this person may use electrically powered devices in the course of their work.

Throughout Baker Group defined and recommended practices, the following words have specific meanings:

- 'Shall' is used when a provision is mandatory.
- 'Should' is used when a provision is preferred.
- 'May' is used when alternatives are equally acceptable.

RESPONSIBILITIES

Safety and Health Manager

- Coordinate the overall administration of the program.
- Develop and then update the written program as needed.
- Ensure that training and testing are done as required to provide employees with knowledge to work safely with electricity.

Maintenance and Shift Leaders

- Attend and participate in all training sessions.

- Designate those employees that shall be qualified to work on circuit above 50 volts.
- Ensure full compliance with the program.

Employees

- comply with all components of this program in which they have been trained.

Notify the shift or maintenance leader of any changes or concerns regarding the program.

REQUIREMENTS AND PROCEDURES

Working on or near de-energized parts: the following procedures shall be followed in implementing the above stated policy:

All live parts to which an employee may be exposed shall be de-energized before work is begun on or near those part, unless it can be demonstrated the de-energizing introduces additional or increased hazards or is not feasible due to equipment design or operational limits. Examples include testing of electric circuits that can only be performed with the circuit energized or work on circuits that are pertinent to a continuous industrial process. In no instance will work be performed on live electrical circuits as a convenience, i.e. did not take time to lockout, or did not know location of control breaker.

Live parts that operate above 50 volts to ground need to be de-energized before work is begun and verified with a voltmeter reading and proper PPE.

Conductors and parts of electric equipment that have been de-energized but have not been locked out or tagged in accordance with the separate control of hazardous energy policy, shall be treated as energized and work on or near them shall be in compliance with this section.

Temporary protective grounding of equipment:

temporary protective grounds shall be placed at such locations and arranged in such a manner as to prevent each employee from being exposed to hazardous differences in electrical potential.

Temporary protective grounds shall be capable of conduction the maximum fault current that could flow at the point of grounding for the time necessary to clear the fault.

Temporary protective grounding equipment shall meet the requirements of ASTM F 855, standard specification for temporary protective grounds to be used on de-energized electric power conductors and equipment, 1997.

Temporary protective grounds shall have impedance low enough to cause immediate operation of protective devices in case of accidental energizing of the electrical conductors or circuit parts.

De-energizing equipment:

Procedures for safely de-energizing circuits and equipment must be determined before equipment can be de-energized.

All energy sources for the equipment to be worked on must be disconnected. Push buttons, selector switches, interlocks, and other control circuit devices may not be used as the sole means for disconnecting circuits or equipment.

Interlocks for electrical equipment may not be used as a substitute lockout device.

All capacitors, other high capacitance elements, and any line to which capacitors are connected shall be discharged, short circuited, and grounded if the stored electrical energy might endanger personnel. Such items will be treated as energized while performing this task.

All stored mechanical energy in devices that could re-energize electric circuit parts shall be blocked or relieved to prevent accidentally energizing by the device.

The standard lock and tag shall be placed on the disconnecting means used to de-energize circuits and equipment on which work is to be performed.

The control of hazardous energy procedure may be used for wok on electrical equipment as long as the procedure is modified as described in 29 CFR 1910.333(b)(2) to include the following:

- At least one additional safety measure such as locking out an upstream (line side) switch or breaker, disconnecting the circuit conductors from the switch, or circuit breaker where the use of a tag only is permitted.
- Before the work is permitted, the circuit must be tested (for voltage) by a qualified employee, using appropriate voltage-testing equipment. The test shall determine if any energized condition exists as a result of any inadvertently induced voltage or unrelated voltage back-feed even though certain parts of the system have been de-energized and presumed to be safe.
- The procedure addresses the electrical hazards covered by 1910.331-335.
- The three-point “on the terminal” test procedure is required when testing electrical circuits of any voltage.
    - Test the circuit when energized to verify system voltage and the function of the test equipment.
    - After de-energizing the circuit/equipment, retest the circuit to verify that all voltage sources have been removed.
    - Test a known live voltage source again, to ensure that the voltage tester is still functioning.

Re-energizing equipment:

Before re-energizing electrical equipment and circuits on which electrical work has been performed, the following requirements must be met in the order given.

- Testing and a visual inspection shall be conducted by a qualified person to verify that all tools, electrical jumpers, shorts, grounds, and other such devices have been removed, so that equipment can be safely re-energized.
- All employees exposed to the hazards associated with re-energizing the equipment shall be warned to stay clear of the circuits and equipment.
- Each lock and tag shall be removed by the employee who applied it.

Working on or near exposed energized parts:

Only qualified persons may work on or near exposed energized electric circuit parts or equipment operating at 50 volts or more. Work performed on exposed energized parts (other than routine testing) requires an approved energized work permit and electrical PPE as defined in this section.

A minimum of two qualified persons are required when the following work is performed:

- Installation, removal, or repair of energized conductors or equipment that operate at 480 volts or above.
- Installation, removal, or repair of de-energized conductors or equipment (such as transformers, capacitors, etc…) if an employee may come in contact with parts energized at more than 480 volts.
- Work involving the use of non-insulated aerial lifts near exposed electric parts of more than 480 volts; and/or
- Other work that exposes an employee to electrical hazards greater than or equal than those stated above.

The above stated requirements may not apply to the following work:

- Routine switching of circuits, if it can be demonstrated the conditions at the site allow this work to be performed safely.
- Work performed with the use of live line tools, if the employee is positioned so that he or she is not exposed to contact with energized parts; and
- Emergency repairs to the extent necessary to safeguard the general public.
- Testing troubleshooting and voltage measuring.

If work is to be performed near overhead conductors, the conductors must be de-energized and grounded or protective measures taken prior to starting work. Such protective measures may include guarding, isolating, or insulating to prevent employees from contacting the energized conductors either directly or indirectly through conductive materials, tools, or equipment. Unqualified employees must always maintain a 10-foot clearance distance from overhead conductors utilizing any voltages up to 50kV. For voltages above 50kV, the clearance distance must be increased 4 inches for every 10kV over 50kV. If these conductors cannot be de-energized and grounded, or properly protected, then qualified persons shall perform the necessary work utilizing proper clearance techniques and protective equipment.

Any vehicle or mechanical equipment capable of having parts of its structure elevated near energized overhead conductors shall be operated so that a clearance of ten feet is maintained up to 50kV. Clearance shall be increased 4 inches for every 10kV above 50kV.

When a qualified person is working in an area near exposed energized parts or energized overhead conductors, whether in an elevated position or on the ground they may not approach or take any conductive object without an approved insulating handle closer to the energized part than the approach distances shown in Table A.

A qualified person, wearing the appropriate arc flash protection may work closer to exposed energized parts or overhead conductors than the minimum approach distances listed in Table A if one of the following protective measures has been taken:

- The person is insulated from the energized part by the use of such items as gloves and/or insulated sleeves rated for the correct voltage.
- The energized part is insulated from all other conductive objects at a different potential and from the person; and

- The person is insulated from all conductive objects at a potential different from that of the energized part.

Employees may not enter or perform work near exposed energized parts unless there is adequate lighting to perform the job safely. Also, employees should never reach blindly into areas that may contain energized parts.

Protective shields, barriers, insulated tools, or insulating materials must be used to avoid inadvertent contact with exposed energized parts when working in confined or enclosed spaces. Also, doors and hinged panels shall be secured to prevent swinging into an employee causing contact with exposed energized parts.

Conductive materials and equipment shall be handled in a manner to prevent contacting energized parts. If long dimensional conductive objects must be handled in areas with exposed live parts, insulation or guarding shall be used to minimized the hazard.

Only fiberglass portable ladders shall be approved for use where employee or the ladder could contact exposed energized parts.

Conductive jewelry (rings, watch bands, earrings, and clothing) shall not be worn.

Housekeeping duties shall not be performed in the area of exposed energized parts unless adequate safeguards such as barriers, insulating materials, and dikes (for fluids) are provided to prevent accidental contact with exposed energized parts and restricted approach boundaries are labeled and maintained.

Electrical safety interlocks may only be defeated temporarily while a qualified person, using a written and approved work plan, is working on the equipment. Only a qualified person meeting the requirements of the training section of this procedure, and using a written and approved work plan, may defeat electrical safety interlocks.

Each employee, to the extent that other safety related work site conditions permit, shall work in a position from which a slip or shock will not bring the employee into contact with energized parts.

The requirements of this section also apply to work being performed in the proximity of covered (non-insulted) conductors.

Approach boundaries to live parts

Both qualified and unqualified workers must keep a safe distance from electrical conductors and equipment. Safe distances are specified in table A.

Shock protection boundaries: the shock protection boundaries identified, as limited and restricted approach boundaries are applicable to the situation in which approaching personnel are exposed to live parts. See table A for the distances associated with various system voltages.

Approach to exposed live parts operating at 50volts or more: no qualified person shall approach or take any conductive objects closer than the established restricted approach boundary set forth in table A unless the following apply:

- The qualified person is insulated or guarded from the live parts operating at 50volts or more (insulating gloves and sleeves are considered insulation only with regard to the energized parts

upon which work is being performed), and no uninsulated part of the qualified person's body crossed the prohibited approach boundary set forth in table A.

- The live parts operating at 50volts or more are insulted from the qualified person and any other conductive object
- The qualified person is insulated from any other conductive objects.

Approach by unqualified person: Unqualified persons shall not be permitted to enter spaces that are required to be accessible to qualified employees only, unless the electrical conductors and equipment involved are in an electrically safe work condition.

Working at or close to the limited approach boundary: where one or more unqualified persons are working at or close to the limited approach boundary, the designated person in charge of the workspace where the electrical hazard exists shall ensure that the work ca be done safely. This shall include advising the unqualified worker of the electrical hazard and warning him or her to stay outside of the limited approach boundary.

Entering the limited approach boundary: where there is a need for an unqualified person to cross the boundary, a qualified person shall advise him or her of the possible hazards and continuously escort the unqualified person while inside the boundary.

Arc Flash Risk Assessment

An arc flash risk assessment shall be done in order to protect personnel from the possibility of being injured by an arc flash on all location 240V and higher and 240N locations served by 125kVA and larger transformers. Locations that fall outside this scope still require a label but arc flash calculations are not necessary. The analysis shall determine the arc flash protection boundary, the personal protective equipment that people within the boundary shall use, and safe work practices to be utilized.

Arc flash protection boundary: for systems that are 600 volts or less, a default flash boundary shall be established by table 130.7C15 within the current NFPA 70E code.

For Baker Group locations that have performed hazard risk assessments and who have calculated flash protection boundaries on equipment, those calculated levels of distance shall be used to establish safe work distances and establish qualified employee interaction only.

Protective Clothing and PPE for Application with an Arc Flash Risk Assessment

Where it has been determined that work will be performed within the arc flash protection boundary, the arc flash risk assessment shall determine and document the incident energy exposure of the worker (in calories per square centimeter). The incident energy exposure level must be based on the working distance of the employee's face and chest areas from a prospective arc source for the specific task to be performed. Arc Rated (AR) clothing and PPE must be used by the employee based on the incident energy exposure associated with the specific task. Recognizing that incident energy exposure increases as the distance from the arc flash decreases, additional PPE shall be used for any parts of the body that are closer than the distance to which the incident energy was determined.

When employees are exposed to the hazards of flames or electrical arcs, they are prohibited from wearing clothing and underwear with synthetic blends such as acetate, nylon, polyester, or rayon. Only 100% natural fibers such as cotton will be permitted. This may include a flame resistant (FR) outer layer (work uniform).

Updating of NFPA 70E Hazard Risk Programs

The arc flash hazard analysis shall be updated annually to accommodate plant renovations or equipment changes that take place. It shall be reviewed periodically at intervals not exceeding 5 years, not to exceed annually to account for changes in the electrical distribution system that could also affect the results of the arc flash hazard analysis.

Labeling of Panel Boards

Switchboards, panel boards, industrial control panels, and motor control centers that are likely to require examination, adjustment, servicing or maintenance while energized must be field marked to warn qualified person of the danger of electric arc flash. The marking must be clearly visible to qualified persons before they examine, adjust, service, or perform maintenance on the equipment. The following information must be included:

- The arc flash protection boundary (4.0ft if not calculated)
- The flash hazard at 18 inches expressed in calories per square centimeter
- The hazard class and all PPE required that must be worn or utilized
- Shock hazard when cover is removed
- The glove class
- Limited approach boundary
- Restricted approach boundary

Locations less than 240V also require labels, minus the arc flash information

Use of Equipment

Grounded Tools

All portable electrical hand tools (unless double insulated) must contain an equipment grounding conductor that is connected to the tool frame and through the supply cord back to the service entrance enclosure. In the case of double insulated tools, the case must be non-conductive plastic with no continuity to either conductor.

All electrical power tools must be listed by Underwriters Laboratories (UL).

Tools and their cords must be inspected before use. If defects are found, they should be taken out of service until repaired. Periodic ground continuity and insulation resistance testing must be performed to ensure that the tool can be operated safely.

Handling Tools

Portable electrical hand tools should always be handled in a manner that will not damage the tool. Flexible cords that are connected to the tool should not be used as a means of raising or lowering the tool. Flexible cords should never be fastened with staples or otherwise hung in such a fashion as could damage the outer jacket or insulation.

Visual inspection of tools and cords

Each shift, before portable electrical tools and extension cords are used, they must be inspected for external defects (such as loose parts, deformed or missing pins, or damage to outer jacket or insulation) and for evidence of internal damage (such as pinched or crushed outer jacket). Defective equipment must be removed from service.

When an attachment plug is to be connected to a receptacle (including a cord set) the relationship of the plug and receptacle contact must first be checked to ensure that they are of the proper mating configuration. All extension cords that are used with grounding- type tools shall contain an equipment-grounding conductor. These attachment plugs and receptacles must not be connected or altered in any way that would prevent proper continuity of the equipment-grounding conductor. Any adapter that will interrupt the continuity of the equipment-grounding conductor must not be used.

When case grounds are used as the primary protection from shocks caused by internal faults within hand tools, this program also requires that an assured equipment grounding program is in place. This must be a written program that includes both visual inspections and continuity checks of all cords on tools and extension cords, at intervals not to exceed 90 days. Records must be kept of the inspections, and each cord must be marked such that an employee would know that the cord has been tested and the date of the test. An alternative to an assured equipment-grounding program would be to use cords equipped with GFCI for all portable powered hand tools. All plug and cord powered equipment must be used only for what it is listed for by UL, and only equipment listed for industrial use may be used in a manufacturing setting. The only exception to this is when GFCI protection is used.

Conductive work locations

All portable electrical equipment that is used in high conductive locations (wet and/or cement floors) must be listed and approved for use in such locations. Energized connections must only be handled with the proper insulating protective equipment in wet conditions, otherwise, the power should be switched off before plugging in or unplugging flexible cords to power. GFCI protection should always be used in wet locations.

Electric power and lighting circuits

Only load rated switches, circuit breakers, or other load rated disconnecting means shall be used to open, reverse, or close circuits under load conditions. Non-load break cable connectors, fuses, terminal lugs, or cable splice connections shall not be used for such purposes except in emergency situations.

When a circuit is de-energized by a protective device, the circuit may not be manually re-energized until it can be determined that the equipment and circuit can be safely re-energized. Re-energizing circuits with only replaced fuses is prohibited. However, if it is determined that the automatic operation of an over-current device was caused by an overload condition rather than a fault condition, then no inspection of the circuit or equipment is needed for re-energizing.

Over-current protection of circuits and conductors may not be modified, even temporarily.

Repetitive manual closing of circuit breakers or continuous replacement of fuses is prohibited.

Over-current protection may never exceed the rated capacity of the line.

Test instruments and equipment

Only qualified persons shall perform testing on electrical equipment or circuits.

All test equipment and related accessories shall be visually inspected before each use. If there is evidence of damage that might expose someone to injury, the damaged items shall be removed from service until repairs can be rendered.

All test equipment and related accessories shall be rated for the equipment and circuits to which it will be connected and shall be adequately designed for the environment in which it is being used.

Electrical equipment capable of igniting flammable materials shall not be used where flammable or ignitable materials are occasionally present.

Cord and plug equipment

All cord and plug connected equipment (including extension cords) shall be used in accordance with 29 CFR 1910.305(g).

Flexible cords and cables must be approved and suitable for conditions of use and location. Extension cords must be selected to comply with UL listing and labeling, and NEC 2005.

Examples of where flexible cords and cables are strictly prohibited are:

- As a substitute for the fixed wiring in a structure
- Passing through holes in walls, ceilings, or floors
- Passing through doorways, windows, or similar openings
- Where attached to building surfaces; and/or
- Where concealed behind building walls, ceilings, or floors

Flexible cords and cables shall not be used for wet applications or outside applications without ground fault circuit interrupter protection. In addition:

- Cords shall be handled in a manner that will not cause damage.
- Cords will not be used to raise or lower the equipment.
- Cords shall not be stapled or hung.
- Cords and equipment shall be inspected for visible defects before each use. If defects are found, the equipment shall be placed “out of service” unit it is properly repaired or replaced.
- Attachment plugs shall not be altered and only connected into receptacles for which they are rated and designed to fit.
- Grounded equipment, i.e., equipment utilizing a ground prong, will only be connected to grounded outlets. Grounded adapters or removal of the ground prong is prohibited.
- Equipment will be approved for the service and location in which it is used.
- Insulating protective equipment must be used if wet energized connectors are to be plugged or unplugged.

- Locking type connectors shall be securely fastened after connection.
- Drop cords must have strain relief suitable to prevent the tearing of their insulation.
- The use of electrical tape is not permitted to repair cut, tears or any other defects in electric cords. Defective electric cords must be replaced with an appropriately rated replacement.
- All electrically powered devices, multi-plugs, conductors, etc. must be rated to match the breaker or fuse that protects them (if the breaker is rated at 15-20 amps, all devices that it protects must also be rated at 15-20 amps).

Safeguards for Personal Protection

Electrical PPE shall be maintained in a safe, reliable condition.

The following requirements apply to insulating blankets, cover, line hose, gloves, and sleeves made of rubber.

Insulating equipment shall be inspected before each shift's use and immediately following any incident that might have caused damage. Insulating gloves shall be given an air test using the roll method.

Insulating equipment with any of the following defects shall not be used:

- A hole, tear, puncture, or cut;
- Ozone cutting;
- Any embedded foreign object;
- Texture changes such as swelling, softening, hardening, stickiness, or loss of elasticity.

Insulating equipment found to have defects that might affect the insulating properties must be removed from service and tested. Insulating equipment shall be cleaned as needed to remove foreign substances and shall be stored in locations protected from light, temperature extremes, excessive humidity, ozone, and other damaging conditions.

Protector gloves must be worn over insulating gloves except under the following conditions:

- Under limited use conditions with Class 00 gloves where manipulating small equipment and parts requires high finger dexterity;

Under the same conditions stated above, with any other class of glove, if it can be demonstrated the possibility of physical damage to the gloves is minimal and if the class of glove used is one class higher than that required for the voltage involved. However, if insulated gloves are used without protectors they must be tested before they can be used again at a voltage consistent with the nominal class of the gloves.

Electrical PPE shall be periodically tested in accordance with the appropriate ASTM standard and the maximum intervals. Insulating equipment failing to pass inspections or electrical tests shall be remove from service and discarded. If the insulating material is subject to damage during use, then it will be protected with an outer covering of leather or other approved material. Rubber gloves must always be protected by leather over-gloves. Employees shall wear nonconductive head protection whenever there is danger of a head injury from electric shock or burns due to contact with energized conductors. In every instance, maintenance workers will always wear E rated hard hats. Eye and face protection will be worn whenever

there is danger of injury to the eyes or face from electric arcs or flashes, or flying objects from electrical explosions.

Protective equipment and tools

Insulated tools or handling equipment rated for the circuit voltages are required when working on or near exposed energized circuits if there is a possibility of contacting conductors or parts.

Insulated fuse pullers rated for the circuit voltage shall be used to remove or install fuses when the fuse terminals are energized.

Ropes and hand conductors used near exposed energized parts shall be nonconductive.

Protective barriers, shields, or insulating materials shall be used to protect employees from electrical shock, burns, or other related injuries while working near exposed energized parts which might be accidentally contacted or near possible dangerous arcing or electric heating.

Alerting techniques

When normally enclosed live parts are exposed for maintenance or repair, they shall be guarded to protect unqualified persons from contact with the live parts. The following alerting techniques shall be used to warn and protect employees from hazards which could cause injury due to electric shock, burns, or failure of electric equipment parts:

- Safety signs, safety symbols, or accident prevention tags, which meet ANSI requirements, shall be used where necessary to warn employees about electrical hazards which may endanger them; and/or
- Barricades shall be used in conjunction with safety signs where it is necessary to prevent or limit employee access to work areas exposing employees to uninsulated energized conductors or circuit parts. Conductive barricades may not be used where they might cause an electrical contact hazard.
- If signs or barricades do not provide sufficient warning to limit or prevent employee access to work areas containing exposed energized electrical equipment, an attendant(s) will be stationed at the entrance(s) to these areas to prevent employee access.

TRAINING AND COMPENTENCY

OSHA 1910.332 and NFPA 70E 2015, subpart S

Unqualified persons: All Baker Group employees shall be trained in and familiar with the safety related work practices covered by this program.

Initial classroom training as part of employee orientation, and annual retraining will be conducted by a qualified person.

Qualified Persons:

In order to be considered qualified as defined above, all Baker Group employees shall receive at a minimum training in the following:

- The skills and techniques necessary to distinguish exposed live parts from other parts of electrical equipment.

- The skills and techniques necessary to determine the nominal voltage of exposed live parts.
- The minimum approach distances as specified in this procedure and to the corresponding voltages to which the person will be exposed.
- The proper use of special precautionary techniques, personal protective equipment, insulating and shielding materials, and insulated tools for working on or near exposed energized parts of electrical equipment.
- The skills to provide first aid and emergency response including CPR.

This training shall be classroom or on-the-job training under the direct supervision of a qualified person.

This training may be supported by classroom instruction and examinations as is determined to insure safe practices are understood and followed.

Only qualified employees will be permitted to work on or near energized components. Those who are not qualified by training will not work on electrically powered equipment and they will receive awareness training for electrical safety.

Emergency response training

Employees exposed to shock hazards and those employees responsible for taking action in case of emergency shall be trained in methods of release of victims from contact with exposed energized electrical conductors or circuit parts.

Supervision and inspections shall be used to verify that each employee is complying with the safety related work practices required by this procedure.

An employee shall receive additional training or retraining under any of the following conditions:

- If supervision and inspections indicate an employee is not complying with this procedure
- If new types of equipment, new technology, or changes in procedures alter the existing safety related work practices; and/or
- If an employee must utilize safety related work practices that are not normally used during their regular job duties

Training and retraining will be documented in the Training Vault system.

Certification shall be made when an employee demonstrates proficiency in the work practices stated in this section. Documentation of this certification shall be maintained for duration of the employee's employment.

Safe work practice training for qualified workers must include the concepts and procedures described in this program and with demonstrations of the PPE to be used: how and when to use it; what PPE is necessary; how to properly done, doff, adjust, and wear PPE; the limitations of PPE; and the proper care, maintenance, useful life, and disposal of PPE.

Unqualified workers shall be trained in and be familiar with any of the electrical safety related practices that are necessary for their safety. Examples might include respecting barricades, staying out of motor control centers labeled for authorized personnel only, inspection of extension cords before using them, prohibition against "daisy chaining" multiple outlet strips, etc.

SUPPORTING DOCUMENTS

Energized Work Permit

ASSOCIATED DOCUMENTS AND REFERENCES

NFPA 70E

TABLE A

APPROACH BOUNDARIES TO LIVE PARTS FOR SHOCK PROTECTION			
Nominal System Voltage Range, Phase to Phase	Limited Approach Boundary		Restricted Approach Boundary – Includes Inadvertent Movement Adder
	Exposed Movable Conductor	Exposed Fixed Circuit Part	
Less than 50 V	Not specified	Not Specified	Not Specified
50 to 150 V	10 ft. 0 in.	3 ft. 6 in.	Avoid contact
151 to 750V	10 ft. 0 in.	3 ft. 6 in.	1 ft. 0 in.
751 to 15kV	10 ft. 0 in.	5 ft. 0 in.	2 ft. 2 in.

LOCKOUT / TAGOUT

PURPOSE

This policy defines the requirements for the control of hazardous energy and establishes the procedures for application of appropriate lock-out / tag-out equipment to prevent unexpected energization, start up or release of stored energy to prevent injury or incident.

SCOPE

This policy covers the servicing and maintenance of machines and equipment where the unexpected energization or startup of the machine or equipment, or the release of stored energy could cause an incident. This document covers Baker Group employees, contractors and shall be used on Baker Group premises, or when a customers program does not exist or is less stringent.

ACRONYMS, DEFINITIONS, LANGUAGE

DEFINITIONS

Zero energy – no energy is coming into or moving inside the equipment.

Authorized employees – These employees will be provided with locks and tags for isolating the energy source. OSHA defines an authorized employee as an employee who implements a lockout/tagout procedure on machinery or equipment in order to perform servicing or maintenance on that machinery or equipment.

Affected employees – those employees operating the equipment being shut down and locked out or employees in the vicinity who may be affected by these actions. OSHA defines an affected employee as an employee whose job requires him or her to operate or use machinery or equipment on which servicing or maintenance is being performed under a lockout/tagout procedure or whose job requires him or her to work in an area in which servicing or maintenance is being performed under a lockout/tagout procedure.

Energized – machines and equipment are energized when (1) they are connected to an energy source or (2) they contain residual or stored energy.

Energy isolating device – any mechanical device that physically prevents the transmission or release of energy. These include, but are not limited to, manually operated electrical circuit breakers, disconnect switches, line valves and blocks.

Energy Source – any source of electrical, mechanical, hydraulic, pneumatic, chemical, thermal, kinetic or other energy.

Lockout – the placement of a lockout device on an energy-isolating device, in accordance with an established procedure, ensuring that the energy-isolating device and the equipment being controlled cannot be operated until the lockout device is removed.

Lockout device – any device that uses positive means such as a lock, either key or combination type, to hold an energy-isolating device in a safe position, thereby preventing the energizing of machinery or equipment. When properly installed, a blank flange or bolted slip blind are considered equivalent to lockout devices.

Multiple energy sources – a piece of equipment or process that has more than one energy source and is interconnected.

Tagout - the placement of a tagout device on an energy-isolating device, in accordance with an established procedure, to indicate that the energy-isolating device and the equipment being controlled may NOT be operated until the tagout device is removed.

Tagout device – any prominent warning device, such as a tag and a means of attachment, which can be securely fastened to an energy-isolating device in accordance with an established procedure. The tag indicates that the machine or equipment to which it is attached is not to be operated until the tagout device is removed in accordance with the energy control procedure.

LANGUAGE

Throughout Baker Group defined and recommended practices, the following words have specific meanings:

'Shall' is used when a provision is mandatory.

'Should' is used when a provision is preferred.

'May' is used when alternatives are equally acceptable.

REQUIREMENTS AND PROCEDURES

Preparation for lockout/tagout

Authorized employees who are required to utilize lockout/tagout procedures must be knowledgeable of the different energy sources and the proper sequence of shutting off or disconnecting all energy means. More than one energy source can be utilized on some equipment and the proper procedure must be followed in order to identify energy sources and lockout/tagout accordingly. Energy sources include but are not limited to the following:

- **Electrical –** the flow of currents through electrical wires and circuits.
- **Hydraulic –** any type of liquid, including water, under pressure.
- **Pneumatic –** gas, including air, under pressure.
- **Mechanical –** potential or "built-up" energy, such as spring energy, that may cause equipment parts to move without warning.
- **Thermal –** elevated temperature intended to perform function in conjunction with operating equipment.
- **Kinetic –** energy an object has, due to its motion or movement.
- **Gravity –** force of motion generated by gravity.
- **Chemical –** reactions of some chemical compounds intended to perform function.

Note: it is important to remember that all sources of energy that have the potential to unexpectedly start up, energize, or release, must be identified and locked, blocked, or released before servicing or maintenance is performed.

General procedure

these general procedures must be followed in all lockout/tagout situations. Prior to completing work in a customer's facility or on a customer's equipment, the Baker Group employee(s) shall be informed of the customer's lockout/tagout procedure and in turn inform the customer of Baker Group's lockout/tagout procedure. Whether it is Baker Group's or the customer's, the procedures with the greatest level of protection shall be followed. If the customer's procedures for lockout/tagout are to be followed this must be documented step by step prior to beginning work.

Lockout/tagout sequence (single person)

- **Step 1 – notify:** notify all affected employees that servicing or maintenance is required on a machine or equipment and that the machine or equipment must be shut down and locked out to perform the servicing or maintenance.
- **Step 2 – review lockout procedure:** the authorized employee shall refer to the company procedures to identify the type and magnitude of the energy that the machine or equipment utilizes, shall understand the hazards of the energy, and shall know the methods to control the energy.

- **Step 3 – perform machine stop:** if the machine or equipment is operating, shut it down by the normal stopping procedure (depress the stop button, open switch, close valve, etc.).
- **Step 4 – isolate energy:** de-activate the energy isolating device(s) so that the machine or equipment is isolated from the energy source(s).
- **Step 5 – lockout energy:** lockout/tagout the energy isolating device(s) with assigned individual lock(s) / tag(s). each employee shall have their own lock and tag and shall have their name on it.
- **Step 6 – dissipate energy:** stored or residual energy (such as that in capacitors, springs, elevated machine members, rotating flywheels, hydraulic systems, and air, gas, steam, or water pressure, etc..) must be dissipated, relieved, disconnected or restrained by methods such as grounding, re-positioning, blocking, bleeding down, and 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.
- **Step 7 – attempt restart:** ensure that the equipment is disconnected from the energy source(s) by first checking that no personnel are exposed, then verify the isolation of the equipment by operating the push button or other normal operating control(s) or by testing to make certain the equipment will not operate.

Restore to Service

- **Step 1 – check machine:** check the machine or equipment and the immediate area around the machine to ensure that nonessential items have been removed and that the machine or equipment components are operationally intact.
- **Step 2 – check area:** check the work area to ensure that all employees have been safely positioned or removed from the area.
- **Step 3 – verify machine:** verify that the controls are in neutral.
- **Step 4 - remove lockout:** remove the lockout devices and re-energize the machine or equipment. **Note:** the removal of some forms of blocking may require re-energization of the machine before safe removal.
- **Step 5 – notify:** notify affected employees that the servicing or maintenance is completed and the machine or equipment is ready for use.

Machine – specific procedures

Machine specific lockout/tagout procedures shall be developed and utilized for every machine unless it meets all of the following specific elements: the machine or equipment must have no potential for stored or residual energy. The machine must have a single energy source, which is easily identified and isolated. A single lockout device will achieve a locked-out condition and the lockout device is under the control of the authorized employee performing the service or maintenance. The servicing or maintenance does not create hazards for other employees.

Multiple energy sources

when de-energizing machines or equipment that is interconnected, the energy control procedures for all interconnected machines or pieces of equipment must be implemented by an authorized employee. Prior to

work being completed, if a machine specific procedure inclusive of all energy sources is not available, a written specific procedure needs to be completed. The written procedure shall consist of the same process as single source lockout/tagout but for every energy source.

Group Lockout

When more than one individual is required to lockout or tagout equipment each shall place his/her own personal lock on the energy-isolating device (a person cannot work under the protection of another employee's lock(s)). Group lockout requires all authorized employees and outside contractors to work under one authorized person who is responsible for the lockout procedure. Only the person who attached the individual lock to the energy-isolating device is authorized to remove that lock. Group lock trees or lock boxes may be used when multiple users or trade are working on the same machine, equipment, system, etc… a lock box must contain a lock for all person working on that piece of equipment. With the group lock attached to the equipment and the key for the group lock inside of the lock box.

Shift / Personnel Changes

Shift changes must be coordinated between the authorized employees that are responsible for the group lockout of each shift. Whenever possible locks shall be removed by authorized employees finishing their shift and replaced by employees starting their shift. The incoming authorized employee should place their lock or tag on the energy isolating device before the exiting authorized employee removes their lock or tag. Exiting employees should inform the incoming employees of problems or concerns regarding the service and maintenance of machinery or equipment. In a situation where this is not possible the person designated to be in charge of the group shall ensure that a proper transition occurs between shifts.

Lock Removal

Each lockout/tagout device shall be removed from each energy isolating device by the employee who applied the device. When a lock is abandoned (authorized employee who applied the lockout/tagout device is not available to remove it), or in an emergency, that device may be removed under the direction of a superintendent, safety manager, or a designated customer representative. Before the lock is removed, the following steps must be followed:

1. Verify that the authorized employee who applied the device is not available.
2. Make all reasonable efforts to contact the authorized employee to have them return to the facility to remove the lock or give permission for the lock to be removed.
3. If the employee cannot be reached or permission is granted, investigate the job completely to assure a safe condition exists before removing a lock.
4. Ensure that the authorized employee (upon returning to work) has knowledge that his/her lock has been removed. The lock removal event should be documented.

Outside contractors

Baker Group employees must work closely with outside contractors to ensure that all affected and authorized contractor employees are trained, understand and comply with Baker Group's lockout tagout policy. Any exceptions or contractors requests to follow their own policy/ procedure must be approved in advance by a Baker Group safety manager.

Equipment

the basic equipment needed for lockout/tagout procedures are locks and/or tags. Locks are to be utilized whenever possible. Both locks and tags must clearly indicate the identity of the employee who applied the device. The locks and tags must be durable enough to withstand the environment in which they will be used. Information on the locks and tags, must remain legible. Locks must be substantial enough to prevent

removal without the use of excessive force. Tags must be substantial enough to prevent accidental or inadvertent removal. Both locks and tags are to be standardized by color, shape, or size.

Lockout/tagout kits may be obtained through the tool crib.

TRAINING AND COMPETENCY

Affected and authorized employees

Two types of personnel are directly affected by the lockout/tagout standard: affected employees and authorized employees. Baker Group shall provide training to ensure that the purpose and function of the energy control program are understood by employees and that the knowledge and skills required for the safe application, usage, and removal of the energy controls are acquired by employees.

Levels of training

Each authorized employee shall receive advanced level training in the recognition of applicable hazardous energy sources, the type and magnitude of the energy available in the workplace, and the methods and means necessary for energy isolation and control. Employees successfully completing all advanced level training requirements are documented in Training Vault. Each affected employee shall receive awareness level training in the purpose and use of the energy control procedure. All other employees whose work operation are or may be in an area where energy control procedures may be utilized, shall be instructed about the procedure, and about the prohibition relating to attempts to restart or re-energize machines or equipment which are locked out or tagged out. An attendance sheet will be signed upon completion of each group training session. Individual training completion records are maintained in Training Vault and are available upon request.

Competency Assurance

A periodic inspection shall be performed annually for all authorized employees and documented as an evaluation in Training Vault to verify lockout/tagout practices are being followed.

Retraining

Periodic retraining shall be provided for all authorized and affected employees whenever there is a change in their job assignments, a change in machines, equipment or processes that present a new hazard, or when there is a change in the energy control procedures. Additional retraining shall also be conducted whenever the employer has reason to believe that there are deviations from or inadequacies in the employee's knowledge or use of the energy control procedures. The retraining shall re-establish employee competency and introduce new or revised control methods and procedures, as necessary.

SUPPORTING DOCUMENTS

ASSOCIATED DOCUMENTS AND REFERENCES

- OSHA standard 29 CFR 1910.147 – control of hazardous energy (lockout/tagout)
- Arc flash policy
- Personal protective equipment policy

FIRE PROTECTION AND PREVENTION

PURPOSE

Baker Group is committed to providing a safe and healthy workplace. This program has been developed to provide all employees of Baker Group with information on how they can anticipate, recognize, and eliminate the hazards associated with fire protection and prevention and to comply with applicable regulations.

SCOPE

This practice has been prepared for the Baker Group workforce and applies to work performed at Baker Group facilities or on customer premises. This practice may be superseded by equivalent or more stringent host employer, controlling contractor, or regulatory requirements.

ACRONYMS, DEFINITIONS, AND LANGUAGE

Definitions

ABC dry chemical extinguisher - a multi-purpose dry chemical fire extinguisher used on ordinary combustibles, flammable liquids, and electrical equipment fires.
Firewatch – an employee designated and trained to monitor a process where a flame is created to ensure the safety of other employees and pedestrians.
Hot work – operations involving open flames or producing heat and/or sparks. This includes, but is not limited to: brazing, cutting, grinding, soldering, thawing pipe, and welding.

Language

Throughout Baker Group defined and recommended practices, the following words have specific meanings:

'Shall' is used when a provision is mandatory.
'Should' is used when a provision is preferred.
'May' is used when alternatives are equally acceptable

RESPONSIBLITIES

REQUIREMENTS AND PROCEDURES

Fire Protection

It is Baker Group's responsibility to provide adequate fire protection for all of our work areas throughout all phases of construction that corresponds with the type of fire exposures that may exist during the project. Access for fire fighting equipment shall be maintained at all times during working hours. All fire fighting equipment must be periodically inspected and maintained in operating conditions. Defective equipment shall be immediately replaced and returned to the tool crib. All of Baker Group's large gang boxes will be provided with a minimum of a 5lb ABC dry chemical type fire extinguisher. Whenever welding or handling flammable liquids, a 10lb ABC fire extinguisher shall be provided within 50' of that working area. This does not include the refueling of integral fuel tanks or motor vehicles.

Fire Prevention

The inside storage of flammable liquids shall not exceed 25 gallons. Flammable liquids shall be stored in safety type containers and properly labeled. This does not include small amounts of flammables (one gallon or less) in original supplied containers. When transferring flammable liquids from one container to another, they must be electrically interconnected (bonded). There shall be NO SMOKING or open flames in the

areas of any types of flammable storage or refueling. No smoking signs shall be posted if these areas are considered somewhat permanent.

Portable Fire Extinguishers

- All jobsites that have the potential for a fire shall have fire extinguishers conspicuously located, and employees shall have knowledge of location whether placed by Baker Group or other contractor.
- The owner or occupant of a property in which fire extinguishers are located has an obligation for the care and use of these extinguishers at all times.
- The nameplate(s) and instruction manual should be read and thoroughly understood by all persons who may be expected to use extinguishers.
- In case of a fire emergency employees are expected to evacuate. It is not expected for employees without proper training to use fire extinguishers.
- Hands on training must be provided to employees where portable fire extinguishers are expected to be used. Upon initial assignment and at least annually after that, training shall be conducted.
- Where the employer has provided portable fire extinguishers for employees use in the workplace, the employer also shall provide an educational program to familiarize employees with the general principles of fire extinguisher use and the hazards involved in incipient stage firefighting.
- Portable fire extinguishers shall be readily accessible in case of emergency.
- A procedure must be in place to ensure that portable extinguishers shall be replaced or recharged annually (e.g. inspection tags).
- Inspections
    - A visual inspection of housing, components, labels, and gauge shall be completed daily.
    - A documented inspection of housing, components, and gauge shall be completed quarterly (e.g. initial inspection tag) according to the following dates, Jan.1, April 1, July 1, Oct.1.
    - If it is established that an extinguisher is deficient during the inspection, it shall be removed and a suitable replacement shall be placed immediately.

Hot Work

Hot work permits shall be completed for operations involving open flames or producing heat and/or sparks. This includes, but is not limited to: brazing, cutting, grinding, soldering, thawing pipe, and welding. Hot work permits shall be completed by a competent person. Permits shall be kept on site for the entire operation plus adequate time after the operation.

A fire watch shall be provided where deemed necessary by competent person or job site rules.

- A fire watch is required when welding, cutting, brazing and/or soldering is performed near combustible materials and/or in locations where fire may develop.
- Fire watches will be provided during hot work and for 30 minutes after operation.
- Training: fire watches shall have proper training on how to use the designated fire extinguisher.
- Fire watches shall be provided with suitable extinguishers.
- A fire watch shall only have the duties of a fire watch while completing this task.
- One fire watch may be responsible for more than one hot work area as long as all areas are within visual contact.
- At a minimum, the five conditions that require a fire watch are;
    - Locations where other than a minor fire might develop
    - Combustible materials closer than 35 feet to point of operation
    - Combustibles that are 35 feet or more away but are easily ignited
    - Wall or floor openings within 35 feet radius expose combustible materials
    - Combustible materials are adjacent to the opposite side of metal partitions, ceilings, or roof

WELDING AND CUTTING AND HOT WORK

PURPOSE

Baker Group is committed to providing a safe and healthy workplace. This program has been developed to provide all employees of Baker Group with information on how they can anticipate, recognize, and eliminate the hazards associated with welding and cutting and to comply with applicable regulations.

SCOPE

This practice has been prepared for the Baker Group workforce and applies to work performed at Baker Group facilities or on customer premises. This practice may be superseded by equivalent or more stringent host employer, controlling contractor, or regulatory requirements.

ACRONYMS, DEFINITIONS, & LANGUAGE

LANGUAGE

Throughout Baker Group defined and recommended practices, the following words have specific meanings,
"Shall" is used when a provision is mandatory.
"Should" is used when a provision is preferred.
"May" is used when alternatives are equally acceptable.

REQUIREMENTS AND PROCEDURES

Fire Prevention

- When practical, objects to be welded, cut, or heated shall be moved to a designated safe area or, if the objects cannot be moved, all movable fire hazards in the vicinity shall be taken to a safe place or otherwise protected.
- If the object to be welded, cut, or heated cannot be removed, positive means shall be taken to confine the heat, sparks and slag from the immovable fire hazards.
- No welding, cutting, or heating shall be done in the presence of flammable compounds or heavy dust concentrations.
- Suitable fire extinguishing equipment shall be immediately available in the work area and shall be maintained in a state of readiness for instant use.
- When the welding, cutting, or heating operation is such that normal fire prevention precautions are not sufficient, a "fire watch," or additional personnel shall be assigned to guard against fire during, and for a sufficient period of time, after the work is performed. Such a person shall be instructed as to the specific fire hazards and how the firefighting equipment is to be used.
- When welding, cutting, or heating is performed on walls, floors, and ceilings, sparks may introduce a fire hazard to an adjacent area. In such cases, the same precautions shall be exercised as are taken on the side the welding is being performed.
- Employees shall have adequate ventilation while performing welding, cutting, or heating in confined spaces. In the event of having gas escaping through leaking or improperly closed torch valves, the gas supply to the torch shall be shut off outside the enclosed space when not in use during breaks or work stoppage. For longer work stoppage, such as overnight and at the change in shifts, the torch and hose shall be removed from the confined space. Open end fuel gas and oxygen hoses shall be immediately removed from the enclosed spaces when they are disconnected from the torch or other gas-consuming device.

- All drums, pails, and other containers that contain or have contained flammable liquids shall be kept closed except when the contents are being removed or transferred. Empty containers shall be removed to a safe area.
- Before heat is applied to a drum, container, or hollow structure, a vent or opening shall be provided for the release of any built-up pressure during the application of heat.

Gas Welding and Cutting

Transporting, Moving, and Storing Compressed Gas Cylinders

- Valve protection caps shall be in place and secured.
- When cylinders are hoisted, they shall be secured on a cradle, sling board, or pallet. They shall not be hoisted or transported by means of magnets or choker slings.
- Cylinders shall be moved by tilting and rolling them on their bottom edges. They shall not be intentionally dropped, struck, or permitted to strike each other violently.
- When cylinders are transported by powered vehicles, they shall be secured in a vertical position.
- Valve protection caps shall not be used for lifting cylinders. If caps are frozen or stuck, they shall not be pried off. Instead, use warm (not boiling) water.
- Unless cylinders are firmly secured on a special carrier intended for this purpose, regulators shall be removed and valve protection caps put in place before cylinders are moved.
- A suitable chain or other steadying device shall be used to keep cylinders from being knocked over while in use.
- When work is finished, when cylinders are empty, or when cylinders are moved at any time, the cylinder valve shall be closed.
- Compressed gas cylinders shall be secured in an upright position at all times except, if necessary, for short periods of time while cylinders are actually being hoisted or carried.
- Oxygen cylinders in storage shall be separated from fuel-gas cylinders or combustible materials (especially oil or grease) a minimum distance of 20 feet or by a noncombustible barrier at least 5 feet high having a fire-resistance rating of at least one-half hour.
- Inside of buildings, cylinders shall be stored in a well-protected, well ventilated, dry location, at least 20 feet from highly combustible materials such as oil or excelsior. Cylinders should be stored in definitely assigned places away from elevators, stairs, or gangways, or where they could be knocked over or damaged by unauthorized persons.

Placing and Treatment of Cylinders

- 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. When this is impractical, fire resistant shields shall be provided.
- Cylinders shall be placed where they cannot become part of an electrical circuit. Electrodes shall not be struck against a cylinder to strike an arc.
- Fuel gas cylinders shall be placed with valve end up whenever they are in use. They shall not be placed in a location where they would be subject to open flame, hot metal, or other sources of artificial heat.
- Cylinders containing oxygen or acetylene or other fuel gas shall not be taken into confined spaces.
- Cylinders, whether full or empty, shall not be used as rollers or supports.
- Never attempt to mix gases or refill, in a cylinder.
- Never use a damaged or defective cylinder.

Use of Fuel Gas

- Before a regulator to a cylinder valve is connected, the valve shall be opened slightly and closed immediately (or "cracked"). The person cracking the valve shall stand out of the way of the outlet. The valve of a fuel gas cylinder shall not be cracked where the gas would reach welding work, sparks, flame, or other sources of ignition.
- The cylinder valve shall always be opened slowly to prevent damage to the regulator. For quick closing, valves on fuel gas cylinders shall not be opened more than 1 ½ turns. When 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 shut off quickly in case of an emergency. In the case of manifolded or coupled cylinders, at least one such wrench shall always be available for immediate use. Nothing shall be placed on top of a fuel gas cylinder when in use, which may damage the safety device or interfere with the quick closing of the valve.
- Fuel gas shall not be used from cylinders through torches or other devices that are equipped with shutoff valves without reducing the pressure through a suitable regulator attached to the cylinder valve or manifold.
- Before a regulator is removed from a cylinder valve, the cylinder valve shall always be closed and the gas released from the regulator.
- If, when the valve on a fuel gas cylinder is opened, there is found to be a leak around the valve stem, the valve shall be closed and the gland nut tightened. If this action does not stop the leak, the use of the cylinder shall be discontinued, and it shall be properly tagged and removed from the work area. In the event that fuel gas should leak from the cylinder valve, rather than from the valve stem and the gas cannot be shut off, the cylinder shall be properly tagged and removed from the work area. If a regulator attached to a cylinder valve will effectively stop a leak through the valve seat, the cylinder need not be removed from the work area.
- If a leak should develop at a fuse plug or other safety device, the cylinder shall be removed from the work area.

Fuel Gas and Oxygen Manifolds

- Fuel gas and oxygen manifolds shall bear the name of the substance they contain in letters at least one inch high that shall be either painted on the manifold or on a sign permanently attached to it.
- Fuel gas and oxygen manifolds shall be placed in safe, well ventilated, and accessible locations.
- Manifold hose connections, including both ends of the supply hose that lead to the manifold, shall be such that the hose cannot be interchanged between fuel gas and oxygen manifolds and supply header connections. Hose connections shall be kept free of grease and oil.
- Manifold and header hose connections shall be capped when not in use.
- Nothing shall be placed on top of a manifold when in use.

Hoses, Torches, Regulators and Gauges

- Fuel gas hose and oxygen hose shall be easily distinguishable from each other.
- When parallel sections of oxygen and fuel gas hose are taped together, not more than 4 inches out of 12 inches shall be covered by tape.
- All hose in use, carrying acetylene, oxygen, natural, or manufactured fuel gas, or any gas or substance that may ignite or enter into combustion or be in any way harmful to employees, shall be inspected at the beginning of each working shift. Defective hose shall be removed from service.

- Hose couplings shall be of the type that cannot be unlocked or disconnected by means of a straight pull without rotary motion.
- Boxes used for the storage of gas hose shall be ventilated.
- Hoses, cables, and other equipment shall be kept clear of passageways, ladders, and stairs.
- Clogged torch tip openings shall be cleaned.
- Torches in use shall be inspected at the beginning of each working shift for leaking shutoff valves, hose couplings, and tip connections. Defective torches shall not be used.
- Torches shall be lit by friction lighters or other approved devices, and not by matches or from hot work.
- Equip torches with anti-flashback devices.
- Oxygen and fuel gas pressure regulators, including their related gauges, shall be in proper working order while in use.

Oil and Grease Hazards

Oxygen cylinders and fittings shall be kept away from oil or grease. Cylinders, cylinder caps and valves, couplings, regulators, hose, and apparatus shall be kept free from oil or greasy substances and shall not be handled with oily hands or gloves. Oxygen shall not be directed at oily surfaces, greasy clothes, or within a fuel oil or other storage tank or vessel.

Arc Welding and Cutting

Manual Electrode Holders

- Only the proper manual electrode holders, designed specifically for arc welding and cutting, shall be used.
- Any current-carrying parts passing through the portion of the holder which the arc welder or cutter grips in his hand, and the outer surfaces of the jaws of the holder, shall be fully insulated.

Welding Cables and Connectors

- All arc welding and cutting cables shall be of the fully insulated, flexible, and capable of handling the maximum current of the work in progress.
- Only cable free from repair or splices for a minimum distance of 10 feet from the electrode holder shall be used, unless the insulating quality is equal to that of the cable.
- Cables in need of repair shall not be used. When a cable, other than a cable lead, is worn to the extent of exposing bare conductors, the portion thus exposed shall be protected by means of rubber and friction tape or other equivalent insulation.

Ground Returns and Machine Grounding

- A ground return cable shall have a current carrying capacity equal to or exceeding the maximum output of the arc welding or cutting unit it services.
- Pipelines containing gases or flammable liquids, or conduit carrying electrical circuits shall not be used as a ground return, and the structure that is used must maintain adequate electrical contact.
- The frames of all arc welding and cutting machines shall be grounded.
- All ground connections shall be inspected to ensure that they are mechanically strong and electrically adequate for the required current.

- When a structure or pipeline is employed as a ground return circuit, it shall be determined that the required electrical contact exists at all joints. The generation of an arc, sparks, or heat at any point shall cause rejection of the structures as a ground circuit.

Operating Instructions and Shielding

- When electrode holders are to be left unattended, the electrodes shall be removed and the holders shall be so placed or protected that they cannot make electrical contact with employees or conducting objects.
- Hot electrode holders shall not be dipped in water; to do so may expose the arc welder or cutter to electric shock.
- When the arc welder or cutter leaves his work for any appreciable length of time, or when the welding or cutting machine is moved, the power supply switch to the equipment shall be opened.
- Any faulty or defective equipment shall be reported to the supervisor.
- A disconnecting means shall be provided in the supply circuit for each motor generated arc welder, and for each AC transformer and DC rectifier arc welder that is not equipped with a disconnect mounted as an integral part of the welder.
- A switch or circuit breaker shall be provided by which each resistance welder and its control equipment can be isolated from the supply circuit. The ampere rating of this disconnecting means shall not be less than the supply conductor ampacity.
- Whenever practicable, all arc welding and cutting operations shall be shielded by noncombustible or flame-proof screens that will protect employees and other persons in the vicinity from the direct rays of the arc.

Hot Work Permit

- Hot work permits shall be completed for operations involving open flames or producing heat and/ or sparks. This includes, but is not limited to: brazing, cutting, grinding, soldering, thawing pipe, and welding.
- Hot work permits shall be completed before work commences and by a competent person.
- Permits shall be kept on site for the entire operation plus adequate time after the operation.
- A fire watch shall be provided where deemed necessary by competent person or job site rules.
- Fire watch will be provided during hot work and for 30 minutes after operation.
- Fire watch shall be provided with suitable extinguishers.
- A fire watch shall only have the duties of a fire watch while completing this task.
- One fire watch may be responsible for more than one hot work area as long as all areas are within visual contact.
- A 2-hour surveillance period may be required upon completion of hot work.

Hot Work in confined spaces requirements can be found in the Baker Group Confined Space Program.

Other Hazards

Hot Work with metals of toxic significance

Welding, cutting, or heating of metals of toxic significance, such as zinc, lead, cadmium, chromium, mercury, and beryllium must include specified ventilation systems and/or filter or airline respirators. (Contact the Safety Department.)

Inert-gas metal-arc welding
Contact the Safety Department prior to performing inert gas metal-arc welding to comply with 29 CFR 1926.353 (d).

Hot work in way of preservative coatings / toxic coatings
Before welding, cutting, or heating is commenced on any surface covered by a preservative coating whose flammability is unknown, a test shall be made by a competent person to determine its flammability. When coatings are determined to be highly flammable, they shall be stripped from the area to be heated to prevent ignition. In enclosed spaces, all surfaces covered with toxic preservatives shall be stripped of all toxic coatings for a distance of at least 4 inches from the area of heat application, or the employees shall be protected by airline respirators. In open air, a respirator shall protect employees.

Personal Protective Equipment

Welding helmets/hoods with the proper visor shall be worn at all times when welding.
Always wear leak proof welding helmets and suitable eye protection to guard against slag while chipping, grinding, and dressing of welds.
Face shields or other form of double eye protection must be worn when grinding.
Employees should wear fire-resistant gloves and shirts to protect themselves from heat, ultra-violet radiation and sparks.
First aid equipment shall be available at all times during welding and cutting operations.

TRAINING AND COMPETENCY

When Baker Group employees are required to work with welding and cutting, the appropriate training based on the job and potential hazards related to welding and cutting shall be provided to all applicable employees. Training should include proper use, handling and storage of compressed gas cylinders along with proper use and handling in regards to arc-welding. Documentation of training, assessments, and retraining shall be kept. Assessments shall be used to determine whether the personnel have the knowledge and have demonstrated skills to safely preform their work assignments.

Retraining and testing shall be required for unsatisfactory/unsafe performance of job assignments.

SUPPORTING DOCUMENTS

Hot work permit

ASSOCIATED DOCUMENTS AND REFERENCE

The following standard is relevant to this practice:

- OSHA – 1926.350 Subpart J (Welding and Cutting)

FALL PROTECTION / PREVENTION

PURPOSE

To set forth practice requirements and procedures to protect the Baker Group workforce while working at heights, and to comply with applicable regulations. Working at heights can be a high risk activity and fall protection must be understood and followed by everyone that works for and/or on the behalf of Baker Group.

SCOPE

This practice has been prepared for the Baker Group workforce and applies to work performed on Baker Group or customer premises. This practice may be superseded by equivalent or more stringent host employer, controlling contractor, or regulatory requirements.

ACRONYMS, DEFINITIONS, AND LANGUAGE

LANGUAGE

Throughout Baker Group defined and recommended practices, the following words have specific meanings;
"Shall" is used when a provision is mandatory.
"Should" is used when a provision is preferred.
"May" is used when alternatives are equally acceptable.

DEFINITIONS

Anchorage - a secure point of attachment for lifelines, lanyards, or deceleration devices.
Body Harness – straps which may be secured about the employee in a manner that will distribute the fall arrest forces over at least the thighs, pelvis, waist, chest and shoulders with means for attaching it to other components of a personal fall arrest system.
Connector – a device that is used to couple (connect) parts of the personal fall arrest system and positioning device systems together. It may be an independent component of the system, such as a carabiner, or it may be an integral component of part of the system (such as a buckle or dee-ring sewn into a body belt or body harness, or a snap-hook spliced or sewn to a lanyard or self-retracting lanyard).
Controlled access zone (CAZ) – an area in which certain work (e.g., overhand bricklaying) may take place without the use of guardrail systems, personal fall arrest systems, or safety net systems, and access to the zone is controlled.
Critical Height – height at which fall protection or fall prevention is required.
Deceleration device – any mechanism, such as a rope grab, rip-stitch lanyard, specially woven lanyard, tearing or deforming lanyards, automatic self-retracting lifelines/lanyards, etc… that serves to dissipate a substantial amount of energy during a fall arrest, or otherwise limit the energy imposed on an employee during fall arrest.
Guardrail system – a barrier erected to prevent employees from falling to lower levels.
Hole – a gap or void 2 inches (5.1cm) or more in its least dimension, in a floor, roof, or other walking / working surface.
Lanyard – a flexible line of rope, wire rope, or strap that generally has a connector at each end for connecting the body belt or body harness to a deceleration device, lifeline, or anchorage.
Leading edge – the edge of a floor, roof, or formwork for a floor, or other walking/working surface (such as the deck) that changes location as additional floor, roof, decking, or formwork sections are placed, formed, or constructed. A leading edge is considered to be an "unprotected side and edge" during periods when it is not actively and continuously under construction.

Lifeline – a component consisting of a flexible line for connection to an anchorage at one end to hang vertically (vertical lifeline), or for connection to anchorages at both ends to stretch horizontally (horizontal lifeline), and that serves as a means for connection other components of a personal fall arrest system to the anchorage.
Low-slope roof – a roof having a slope less than or equal to 4 in 12 (vertical to horizontal).
Opening – a gap or void 30 inches or more high and 18 inches or more wide, in a wall or partition, through which employees can fall to a lower level.
Personal fall arrest system- a system used to arrest an employee in a fall from a working level. It consists of an anchorage, connectors, a body belt, or body harness, and may include a lanyard, deceleration device, lifeline, or suitable combinations of these. As of January 1, 1998 the use of a body belt for fall arrest is prohibited.
Positioning device system – a body belt or body harness system rigged to allow an employee to be supported on an elevated vertical surface, such as a wall, and work with both hands free while leaning.
Rope grab – a deceleration device that travels on a lifeline, and automatically, by friction engages the lifeline and locks so as to arrest the fall of an employee. A rope grab usually employs the principle of inertial locking, cam/level locking or both.
Safety-monitoring system - a safety system in which a competent person is responsible for recognizing and warning employees of fall hazards.
Self-retracting lifeline / lanyard – a deceleration device containing drum-wound line that can be slowly extracted from, or retracted onto, the drum under slight tension during normal employee movement, and that, after onset of a fall, automatically locks the drum and arrests the fall.
Snap hook – a connector comprised of a hook-shaped member with a normally closed keeper, or similar arrangement, that may be opened to permit the hook to receive and object and, when released, automatically closes to retrain the object. Snaphooks must be the locking type with a self-closing, self-locking keeper that remains closed and locked until unlocked and pressed open for connection or disconnection.
Steep Roof – a roof having a slope greater than 4 in 12 (vertical to horizontal).
Toe board – a low protective barrier that will prevent the fall of materials and equipment to lower levels and provide protection from falls for personnel.
Unprotected sides and edges – any side or edge (except at entrances to points of access) of a walking/working surface (e.g. floor, roof, ramp or runway), where there is no wall or guardrail system at least 39 inches high.
Walking / Working surface – any surface whether horizontal or vertical on which an employee walks or works, including, but not limited to, floors, roofs, ramps bridges, runways, formwork, and concrete reinforcing steel, but not including ladders, vehicles, or trailers, on which employees must be located in order to perform their job duties.
Warning Line system – a barrier erected on a roof to warn employees that they are approaching an unprotected roof side or edge, and the designates an area in which roofing work may take place without the use of guardrail, body belt, or safety net systems to protect employees in the area.

LANGUAGE

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'Shall' is used when a provision is mandatory.
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'May' is used when alternatives are equally acceptable

RESPONSIBILITIES

Employer

It is the responsibility of Baker Group to provide fall protection to affected employees, and to ensure that all employees understand and adhere to the procedures of this plan and follow the practice.

Safety Department

It is the responsibility of the safety department to implement this program by:

- Performing routine safety checks of work operations
- Enforcing Baker Group safety practices
- Correcting any unsafe practices or conditions immediately
- Training employees and supervisors in recognizing fall hazards and the use of fall protection systems.
- Maintain records of employee training, equipment issue, and fall protection systems used at Baker Group jobsites.
- Investigating and documenting all incidents that result in employee injury.

Employees

It is the responsibility of the employees to:

- Understand and adhere to the practices outlined in this fall protection program.
- Follow the guidance of the safety department.
- Bring to management's attention any unsafe or hazardous conditions or practices that may cause injury to either themselves or any other employees.
- Report any incident that causes injury to an employee, regardless of the nature of the injury.
- Inspect and maintain equipment, and to replace it when necessary.

REQUIREMENTS AND PROCEDURES

Hierarchy of fall protection

The following shall be used to determine the best method of control when faced with a fall hazard:

Elimination – eliminate the possibility of a fall by any means possible. Examples of this can include bringing the work lower, re-scheduling to a time when the fall hazard will be gone, or erecting a temporary floor system.

Passive – physical barrier that prevents the worker from being exposed to a fall hazard. These are typically engineering controls such as guardrails, wire cable systems, and ladder cages.

Restraint – system designed to limit the workers ability to reach a fall hazard. Use of harness and lanyard to prevent worker from falling over an edge.

Fall Arrest – use of harness and lanyard to arrest a workers fall before hitting the ground.

Administrative Control – use of warning line systems or controlled access zones to prevent a worker from reaching the fall hazard.

Fall protection needs of particular walking and working surfaces

OSHA has outlined unique walking/working surfaces and situations, and the requirements for each. Whichever system is selected for use, it is imperative that it be implemented early in the construction process, and maintained in place until all work has been completed or until the permanent elements of the structure which will eliminate the exposure to falling hazards are in place. OSHA law requires fall protection or prevention starting at 4' for general industry (shop facilities) and 6' for construction.

Unprotected sides and edges
Employees must be protected when they are exposed to falls from unprotected sides and edges of walking/working surfaces that are 4'(general industry), 6'(construction) or more above levels.

Leading edge work
When constructing leading edges 4'(general industry), 6'(construction) or more above a lower levels, a fall protection system must be implemented.

Hoist areas
Each employee in a hoist area must be protected from falling 4' (general industry), 6'(construction) or more by a fall protection system. In the event that a guardrail system or portion thereof must be removed to facilitate hoisting operations (as during the landing of materials), the affected employee must then be protected by a personal fall arrest system.

Holes
Employees on walking/working surfaces must be protected from:

- Falling into or through holes (including skylights) 4' (general industry), 6' (construction) or more above lower levels by covers over the hole, erecting a guardrail system around the hole, or by the use of a personal fall arrest system.
- Tripping in or stepping into or through holes (including skylights) by covers.
- Objects falling through holes.

Hole coverings must be at least two inches in diameter, labeled with the word "hole", and secured in place.

Ramps, runways, and other walkways
Ramps, runways, and other walkways must be equipped with guardrails when employees are subject to a fall of 4' (general industry), 6' (construction) or more to lower levels.

Excavations
The edges of excavations which cannot be readily seen (i.e., concealed from view by plant growth, etc.) must be protected by guardrail systems, fences, or barricades to prevent employees from falling into them if the excavation depth is six feet or more.

Dangerous Equipment
Employees working less than 4' (general industry), or less than 6' (construction) above dangerous equipment shall be protected from falling into or onto the dangerous equipment by guardrail systems or by equipment guards. Each employee 4' (general industry), 6' (construction) or more above dangerous equipment shall be protected from the fall hazards by a fall protection system.

Roofing work on low-slope roofs
Each employee engaged in roofing activities on low-slope roofs with unprotected sides and edges 4'(general industry), 6' (construction) or more above lower levels must be protected from falling by one of the fall protection systems.

Steep Roofs
While working on roofs with slopes greater than 4 in 12 (vertical to horizontal), employee must be protected from falling when the roof has unprotected sides or edges more than 4'(general industry), 6' (construction) above lower levels. **Note:** roof jacks may not be used as a substitute for fall protection systems but may be used to provide additional protection.

Wall Openings
Employees who are exposed to the hazard of falling out or through wall openings (including those with chutes attached) where the outside bottom edge of the wall opening is 4'(general industry), 6' (construction) or more above lower levels and the inside bottom edge of the wall opening is less than 39 inches above the walking/working surface, must be protected from falling by the use of a fall protection system.
Note: wall openings are defined as openings 30 inches or more high and 18 inches or more wide.

Walking/working surfaces not otherwise addressed
All employees must be protected by a fall protection system, except when otherwise provided in this reference, when exposed to falls of 4'(general industry), 6' (construction) or more to a lower level. Of course, not all of the 15 listed working situations apply to the work typically performed by Baker Group employees. It is important, however, to understand how workers can best protect themselves if they are perfuming tasks that present hazards, usually associated with other construction trades, such as roofing. Ultimately it is our policy to provide the most effective means of fall protection and prevention, and you should simply use this program as a guide toward that goal.

Protection from falling objects
When an employee is exposed to falling objects, he/she must wear a hard hat and must implement one of the following measures:

- Erect toe boards, screens, or guardrail systems to prevent objects from falling from higher levels; or,
- Erect a canopy structure and keep potential falling objects far enough from the edge of the higher level so that those objects would not go over the edge if they were accidentally moved; or,
- Barricade the area to which objects could fall, prohibiting employees from entering the barricaded area, and keep objects that may fall far enough away from the edge of a higher level so that those objects would not go over the edge if they were accidentally moved. The barricaded area may also require a "spotter" to ensure that no one enters without approval.

Covers

- Covers located in roadways and vehicular aisles shall be capable of supporting fat least twice the maximum axle load of the largest vehicle expected to cross over the cover.
- All other covers must be capable of supporting at least twice the weight of employees, equipment, and materials that may be imposed on the cover at any one time.
- All covers shall be secured when installed so as to prevent accidental displacement by the wind, equipment, or employees.
- All covers shall be color-coded, or they shall be marked with the word "hole" or "cover". (not including manhole covers or steel grates used on streets or roadways).

Scissors lifts, scaffolds, ladders
Note: for specific policies regarding scissor lifts and scaffolds, refer to their dedicated sections.
Baker Group believes that a personal fall arrest system is not necessary while operating a scissor lift unless:

- the operator's feet are not in constant contact with the walking/working surface of the scissor lift; or,
- a contractual statement agrees that employees will do so.

On scaffolds, a personal fall arrest system is not necessary unless:

- the walking/working surface of the scaffold is 10 feet or more above the ground and does not have a top rail, midrail, and toe board; or,
- if a contractual statement agrees that employees will do so.

On all ladders, personal fall arrest systems are not necessary unless:

- A contractual statement agrees that employees will do so.

Fall Protection Systems

Passive systems

Guardrails, wired cable, and ladder cages are examples of passive systems.

- Top rails shall be 42 inches high +/- 3 inches.
- Midrails shall be 21 inches high, or midway between the floor and top rail.
- Shall be able to withstand a minimum of 200lbs force against the tops rail (150lbs on the midrail and 50lbs on the toe board).
- Toe boards required anytime objects capable of falling to lower level.
- Top rails and midrails shall be at least ¼ inch nominal diameter or thickness to prevent cuts and lacerations. If wire is used for top rails, it shall be flagged at not more than 6' intervals with highly visible material.
- When guardrail systems are used at hoisting areas, a chain, gate, or removable guardrail section shall be placed across the access opening between guardrail sections when hoisting operations are not taking place.
- Guardrail systems used on ramps and runways shall be erected along each unprotected side or edge.
- Fixed ladders greater than 20' require ladder cages to be installed.

Restraint systems

- When properly configured, a restraint system will prevent a worker from falling over an edge.
- At Baker Group, body harnesses shall be used, and must be configured so that workers body cannot cross the surface edge.
- Anchor points for restraint systems are required to support at least 1000lbs force per worker.
- Harness and lanyard shall be inspected prior to each use for wear, damage, and other deterioration, and defective components must be removed from service.

Personal Fall Arrest systems

- At Baker Group, body harnesses shall be used, and must be capable of limiting the maximum arresting force on an employee to 1800lbs.
- Only locking type snap hooks shall be used, a snap hooks shall never be engaged to each other, rope, or a horizontal lifeline.
- Personal fall arrest systems shall be rigged such that an employee can neither free fall more than 6 feet, nor contact any lower level.
- Personal fall arrest systems must be capable of bringing an employee to a complete stop and limiting maximum deceleration distance an employee travels to 3.5feet.
- The attachment point of the body harness shall be located in the center of the wearer's back near shoulder level, or above the wearer's head.
- Body harnesses and components of the personal fall arrest system shall be used for employee protection only, and not to hoist materials.
- Prompt rescue must be provided for employees in the event of a fall.
- Personal fall arrest systems shall be inspected prior to each use for wear, damage, and other deterioration, and defective components must be removed from service.

Positioning Device systems

- Positioning device systems shall be rigged such that an employee cannot fall more than 2 feet and secured to an anchorage capable of supporting at least twice the potential impact load of an employee's fall or 3000lbs, whichever is greater.
- Connecting assemblies shall have a minimum tensile strength of 5000lbs while dee-rings and snap hooks shall be proof-tested to a minimum tensile load of 3600lbs.
- Positioning device systems shall be inspected prior to each use for wear, damage, and other deterioration, and defective components must be removed from service.
- Body harnesses and components of the positioning device system shall be used only for employee protection and not to hoist materials.

Warning Line systems

- When mechanical equipment is being used, warning lines should be erected not less than 6 feet from the roof edge that is parallel to the direction of the equipment's operation, and not less than 10 feet from the roof edge that is perpendicular to its operation.
- When mechanical equipment is not being used, the warning line must be erected not less than 6 feet from the roof edge.
- Points of access, material handling areas, storage areas, and hoisting areas should be connected to the work area by an access path formed by two warning lines.
- The rope, wire, or chain used as a warning line shall be flagged at not more than 6-foot intervals with high visibility material, and supported in such a way that its lowest point is no less than 34 inches above the walking/working surface, and no higher than 39 inches.
- The rope, wire, or chain shall have a minimum tensile strength of 500lbs once being attached to the stanchions.

Controlled Access zones

When control lines are used, they shall be erected not less than 6 feet not more than 25 feet from the unprotected or leading edge.

- The control line shall extended along the entire length of the unprotected or leading edge and shall be approximately parallel to the unprotected or leading edge.
- The control line shall be connected on each side to a guardrail system or wall.
- Each line shall be flagged or otherwise clearly marked at not more than 6 foot intervals with high visibility material.
- Each line shall be rigged and supported in such a way that its lowest point is not less than 39 inched from the walking/working surface and its highest point is not more than 45 inches from the walking/working surface.
- Each line shall have a minimum breaking strength of 200lbs.

Safety Monitoring systems

The competent person designated as the safety monitor must comply with the following requirements:

- Competent to recognize all fall hazards.
- Warn the employee(s) when it appears that he/she is unaware of a fall hazard or is acting in an unsafe manner.
- Be on the same walking/working surface and within visual sighting distance of the employee(s) being monitored.
- Be close enough to communicate orally with the employee(s).
- Not have other responsibilities, which could take the monitor's attention from the monitoring function.

- Each employee working in a controlled access zone shall be directed to comply with fall hazard warnings form safety monitors.

Site specific fall prevention / protection plans
Where required (leading edge, rooftop, other unprotected edge work where greater controls are not in place), site specific fall prevention / protection plans shall be developed by a qualified person.

TRAINING AND COMPENTENCY

Training
Training shall be performed and documented as deemed by OSHA in the area of fall protection and prevention. Each employee will receive training from a competent person qualified in:

- The nature of fall hazards in the work area.
- The correct procedures for donning, erecting, maintaining, disassembling, and inspecting the fall protection systems to be used.
- The use and operation of the fall protection systems described in this program.
- The limitations of the use of mechanical equipment during the performance of roofing work on low-sloped roofs.
- The correct procedures for the handling and storage of equipment and materials and the erection of overhead protection.
- The role of employees in fall protection plans.
- Emergency procedures in case of a fall, rescue procedures/plan.

Retraining
Fall protection training must be repeated when:

- Changes in workplace conditions render previous training obsolete.
- Changes in the types of fall protection systems or equipment to be used render previous training obsolete.
- Inadequacies in an affected employee's knowledge or use of fall protection systems or equipment indicate that he/she has not retained the understanding or skill required.

Program Evaluation
Baker Group shall conduct evaluations of the workplaces as necessary to ensure that the provisions of the current written program are being effectively implemented and that it continues to be effective.

SUPPORTING DOCUMENTS
Fall protection plan
Fall protection inspection

ASSOCIATED DOCUMENTS AND REFERENCES
the following practices contain relevant content to this practice and should be consulted to support the implementation of the requirements outlined in this practice.
The following standards are relevant to this practice.
OSHA standard – 1926.502 Fall protection systems, criteria, and practices
OSHA standard – 1910.140 personal fall protection systems

MOBILE ELEVATED WORK PLATFORMS (MEWPs)

PURPOSE

To define the procedures and standards that apply to the care, control, maintenance, inspection, and operation of Mobile Elevating Work Platforms (MEWPs).

SCOPE

Applies to all Baker Group work sites, i.e., Baker Group offices, client job sites, etc., requiring the use of MEWPs.

ACRONYMS, DEFINITIONS, AND LANGUAGE

LANGUAGE

Throughout Baker Group defined and recommended practices, the following words have specific meanings:

'Shall' is used when a provision is mandatory.
'Should' is used when a provision is preferred.
'May' is used when alternatives are equally acceptable

DEFINITIONS

Aerial personnel lift - any vehicle-mounted device, telescoping or articulating, or both, which is used to position personnel. These include extensible boom platforms, aerial ladders, articulating boom platforms, vertical towers, and a combination of any of the above.
Articulating boom platform - an aerial personnel lift with two or more hinged boom sections.
Extension boom platform- an aerial personnel lift (except ladders) with a telescopic or extension boom. Telescopic derricks with personnel platform attachments shall be considered to be extension boom platforms when used with a personnel platform.
Insulated aerial device - an aerial personnel lift designed for work on energized lines and apparatus.
Mobile Elevating Work Platform (MEWP)- a machine/device intended for moving persons, tools, and materials to working positions; consisting of at least a work platform with controls, extending structure, and a chassis. Examples: JLG's, Scissor Lifts, Genie Lifts. Spiders, Lulls, Zoom Booms, etc.
Platform - any personnel-carrying device (basket or bucket) that is a component of an aerial personnel lift.
Vertical tower - an aerial personnel lift designed to elevate a platform in a substantially vertical axis.

RESPONSIBILITIES

REQUIREMENTS AND PROCEDURES

Inspection & Maintenance

MEWPs will be inspected prior to use by authorized person. Any deficiencies found in the inspection shall be clearly noted with the MEWP tagged out of service until it is restored to safe to operation.

MEWPs shall receive routine maintenance and servicing per the manufacturer's recommendations. Trained personnel who perform maintenance or servicing to MEWPS will follow manufacturer's instructions for electrical safety and Baker Group procedure for the control of hazardous energy.

Safe Operations

Lift controls shall be tested prior to use to determine that such controls are in safe working condition. Positioning devices and/or outriggers will be used to per safe operating manual instructions.

Fall Protection - A body harness or Personal Fall Arrest System (PFAS) shall be worn with a lanyard appropriately attached per the recommendations of the mobile elevating work platform's manufacturers operating manual.

Personnel should not be permitted to stand on the rails of MEWPs or use rails as a means of access. In the event that there are no other means of access to an area requiring work, specific procedures including rationale (feasibly), duration, evacuation, fall protection plan, etc. shall be developed and reviewed with affected workers prior to implementation.

Large or excessive amounts of material, excluding tools, shall not be transported in a MEWP. Other material lifts would be necessary for such activities. Load limits specified by the manufacturer shall not be exceeded.

MEWPs that can operate horizontally shall set brakes and outriggers, when used, be positioned on pads or a solid surface, and chock wheels before using on an incline.

Boom and Ladder Lift Units

Before ladder trucks and tower trucks are moved from site to site, the aerial ladders shall be secured in the lower traveling position by the locking device above the truck cab, and the manually operated device at the base of the ladder, or by other equally effective means (e.g., cradles which prevent rotation of the ladder in combination with positive acting linear actuators).

A mobile elevating work platform may not be moved when the boom is elevated in a working position with personnel in the basket, except for equipment that is specifically designed for this type of operation.

Articulating boom and extendible boom platforms, primarily designed as personnel carriers, shall have both platform (upper) and lower controls. Upper controls shall be in or beside the platform within easy reach of the operator. Lower controls shall provide for overriding the upper controls. Controls shall be plainly marked as to their function. Lower-level controls shall not be operated unless permission has been obtained from the worker in the lift, except in case of emergency.

MEWP devices that are insulated shall not be altered in any manner that might reduce its insulating value. The insulated boom of a MEWP shall be regularly maintained and certified to ensure the continued insulating properties.

Before moving a MEWP for travel, the boom(s) shall be inspected to see that it is properly cradled and outriggers are in stowed position.

Modifications

MEWPs may be "field modified" for uses other than those intended by the manufacturer, provided the modification has been certified in writing.

Overhead Lines

Any vehicle or mechanical equipment capable of having parts of its structure elevated near energized overhead lines will be operated so that a clearance of 10 ft. (305 cm) is maintained. If the voltage is higher than 50kV, the clearance will be increased 4 in. (10cm) for every 10kV over that voltage. See Table A

TRAINING AND COMPETENCY

Training

Only workers properly trained in compliance with ANSI and OSHA standards and who have received unit-specific familiarization can operate a MEWP. Operators who successfully demonstrate safe operation of each individual MEWP device will be qualified and authorized by Baker Group.

Training must be provided to MEWP operators and their supervisors and include the inspection, maintenance, use, application, and operation of MEWPs.

SUPPORTING DOCUMENTS

TABLE A—MINIMUM CLEARANCE DISTANCES

Voltage (nominal, kV, alternating current)	Minimum clearance distance (feet)
up to 50	10
over 50 to 200	15
over 200 to 350	20
over 350 to 500	25
over 500 to 750	35
over 750 to 1,000	45
over 1,000	(as established by the utility owner/operator or registered professional engineer who is a qualified person with respect to electrical power transmission and distribution).

Note: The value that follows "to" is up to and includes that value. For example, over 50 to 200 means up to and including 200kV.

ASSOCIATED DOCUMENTS AND REFERENCES

MOBILE EQUIPMENT

PURPOSE

This program is written to be in compliance with local regulatory requirements and provide directives to managers, supervisors, and employees about their responsibilities in the operations and management of Baker Group mobile equipment.

SCOPE

This procedure applies to all Baker Group employees with job scopes that require them to operate mobile equipment.

ACRONYMS, DEFINITIONS AND LANGUAGE

LANGUAGE

Throughout Baker Group defined and recommended practices, the following words have specific meanings:
"Shall" is used when a provision is required.
"Should" is used when a provision is preferred.
"May" is used when alternatives are equally acceptable

Responsibilities

Baker Group Safety Department

The Baker Group Safety Department is responsible for developing and maintaining the program and related procedures. These procedures are kept in the designated Baker Group Safety Department office.

Site Manager

Responsible for the implementation and maintenance of the program for their site and ensuring all assets are made available for compliance with the plan.

Employees

All shall be familiar with this procedure and the vehicle safety program.
Follow all requirements, report unsafe conditions, and follow all posted requirements.

REQUIREMENTS AND PROCEDURES

The following requirements apply for all Baker Group locations:

Baker Group must develop and implement safe work procedure for the use of powered mobile equipment in the workplace and must train workers in those safe work procedures.

The equipment operator of mobile equipment shall be directly responsible for the safe operation of that equipment and shall comply with all laws and regulations governing the operation of the equipment.

Maintenance records for any service, repair, or modification which affects the safe performance of the equipment must be maintained and be reasonably available to the operator or maintenance personnel during work hours.

All mobile equipment shall be maintained in safe operating condition and operation, inspection, repair, maintenance and modification shall be carried out in accordance with manufacturer's instructions or, in the absence of the instructors, in accordance with good engineering practice.

Servicing, maintenance and repair of mobile equipment shall be done when the equipment is not in operation, except that the equipment in operation may be serviced if the continued operation is essential to the process and a safe means is provided.

Only authorized employees shall be allowed to operate mobile equipment. Authorization to operate mobile equipment will be issued to employees qualifying under appropriate training and proficiency testing. The person must also have in possession of an applicable operator's license and an airbrake certificate where required, and be familiar with the operating instructions pertaining to the equipment and be authorized to operate equipment. Authorization will be issued after these requirements are met.

A supervisor must not knowingly operate or permit a worker to operate mobile equipment, which is or could create an undue hazard to health or safety of any person or is in violation of any local or federal regulations.

Mobile equipment in which the operator cannot directly or by mirror or other effective device see immediately behind the machine must have an automatic audible warning device, which activates whenever the equipment controls are positioned to move the equipment in reverse, and if practicable, is audible above the ambient noise level.

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

At the beginning of each shift, the operator shall inspect and check the assigned equipment, reporting immediately to his / her supervisor any malfunction of the clutch or of the braking system, steering, lighting, or control system and locking / tagging out of the equipment if necessary.

The operator shall immediately report defects and conditions affecting or likely to affect the safe operation of the equipment to his or her immediate supervisor or other authorized person and confirm his by a written report as soon as possible. If an inspection of powered mobile equipment identifies a defect or unsafe condition that is hazardous or may create a risk to the safety or health of a worker Ahern must ensure that that the powered mobile equipment is not operated until the defect is adjusted, repaired or the unsafe condition is corrected.

The operator of mobile equipment shall not leave the controls unattended, unless the equipment has been secured against inadvertent movement such as by setting the parking bake, placing the transmission in the manufacturer's specified park position and by chocking the wheels where necessary.

No operator shall leave unattended a suspended load, machine or part or extension of it unless it has been immobilized and secured against inadvertent movement.

Powered equipment shall not be left unattended unless forks, buckets, blades and similar parts are in the lowered position or solidly supported.

Before a worker starts any powered mobile equipment Baker Group shall ensure that the worker makes a complete 360 degree visual inspection of the equipment and the surrounding area to ensure that no worker, including the operator, is endangered by the startup of the equipment. No worker shall start any powered mobile equipment until the inspection is completed.

All powered mobile equipment shall be inspected by a competent person for defects and unsafe conditions as often as necessary to ensure that it is capable of safe operation. A written record of the inspections, repairs, and maintenance carried out on the powered mobile equipment is, kept on file and made readily available to the operator. As soon, as is reasonably practicable, the defect must be repaired or the unsafe condition is corrected.

All mobile equipment shall be equipped with a working signal alarm for backing up. The operator shall make sure the warning signal is operating when the equipment is backing up.

The operator shall use access provided to get on or off of equipment. Do not jump to the ground.

No operator shall operate mobile equipment without the protection of an enclosed cab or approved eye protection for the type of hazards to the eye.

Where there is a danger to the operator of a unit of powered mobile equipment or any other worker who is required or permitted to be in or on a unit of powered mobile equipment from falling object or projectile Baker Group requires that the powered mobile equipment is equipped with a suitable and adequate cab, screen, or guard.

If equipment is equipped with a seat belt for the operator, the operator is required to use the seat-belt. Before starting the engine, the driver shall fasten seat belts and adjust them for a proper fit.

Each mobile equipment vehicle used for lifting shall be provided with a durable and clearly legible load-rating chart that is readily available to the operator. The operator shall not load the vehicle / equipment beyond its established load limit and shall not move loads which because of the length, width, or height that have not been centered and secured for safe transportation.

Mobile equipment used for lifting or hoisting or similar operations shall have a permanently affixed notation stating the safe working load capacity of the equipment and the notation must be kept legible and clearly visible to the operator.

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

The operator's manual for powered mobile equipment must be readily available to a worker who operates the equipment.

An employer must ensure that a competent person services, inspects, disassembles and reassembles a tire or a tire and wheel assembly of powered mobile equipment in accordance with the specifications of both the tire manufacturer and the manufacturer of the powered mobile equipment.

All mobile equipment must be equipped with an audible warning signal, a means of illuminating the path of travel at any time, and taillights when because of insufficient light or unfavorable atmospheric conditions, adequate illumination of the cab and instruments, and (d) a mirror providing the operator with an undistorted reflected view to the rear of the mobile equipment.

The operator of gasoline or diesel vehicle shall shut off the engine before filling the fuel tank and shall see that the nozzle of the filling hose makes contact with the filling neck of the tank. No one shall be on the

vehicle during fueling operations except as specifically required by design. There shall be no smoking or open flames in the immediate area during fueling operation.

When a worker is required to work beneath parts of mobile equipment including trucks, the elevated parts shall be securely blocked.

Materials and equipment being transported shall be loaded and secured in a manner to prevent movement which could create a hazard to workers or another person. This includes keeping the cab, floor, and deck of mobile equipment free of material, tools or other objects which could create a tripping hazard, interfere with the operation of controls or be a hazard to the operator or other occupants in the event of an accident.

Where the operator of a mobile equipment, does not have a full view of the intended path of travel of the vehicle, or its load the mobile equipment shall only be operated as directed by a signaler who is a competent person.

The signaler shall be stationed, in full view of the operator and with a full view of the intended path of travel of the vehicle, mobile equipment, crane or similar material handling equipment and its load; and clear of the intended path of travel of the vehicle, mobile equipment, crane or similar material handling equipment and its load.

Where a vehicle, crane or similar equipment is operated near a live power line carrying electricity at more than 750 volts, every part of the equipment shall be kept at least a minimum distance from the live power line for the particular voltage as required by local or federal law.

Under no circumstance will a worker be directed, required or permitted to work under or remain in the range of a swinging load or part of unit of powered mobile equipment due to the inherent danger.

TRAINING REQUIREMENTS

When Baker Group Employees are required to work with motorized equipment, the appropriate training based on the job and potential hazards related to equipment shall be provided to all applicable employee. Training should include proper use, handling and inspection of equipment. Documentation of training, assessments, and retraining shall be kept. Assessments shall be used to determine whether the personnel have the knowledge and have demonstrated skills to safely preform their work assignments.

Retraining and testing shall be required for unsatisfactory/unsafe performance of job assignments

SUPPORTING DOCUMENTS

ASSOCIATED DOCUMENTS & REFERENCES

SCAFFOLDS

PURPOSE

To set forth practice requirements and procedures to guide Baker Group's workforce engaged in activities which may expose workers to scaffolding and aerial lift use and to comply with applicable regulations.

SCOPE

This practice has been prepared for the Baker Group workforce and applies to work performed at Baker Group facilities or customer premises. This practice may be superseded by equivalent or more stringent host employer, controlling contractor, or regulatory requirements.

ACRONYMS, DEFINITIONS, AND LANGUAGE

LANGUAGE

Throughout Baker Group defined and recommended practices, the following words have specific meanings:
"Shall" is used when a provision is required.
"Should" is used when a provision is preferred.
"May" is used when alternatives are equally acceptable

DEFINITIONS

Bearer ("putlog") – a horizontal transverse scaffold member (which may be supported by ledgers or runners) upon which the scaffold platform rests and which joins scaffold uprights, posts, poles, and similar members.
Body belt ("safety belt") – a strap with means both for securing it about the waist and for attaching it to a lanyard, lifeline, or deceleration device. Body belts are not an acceptable means of fall protection.
Body harness – a design of straps that may be secured about the employee in a manner to distribute the fall arrest forces over at least the thighs, pelvis, waist, chest, and shoulders, with for attaching it to other components of a personal fall arrest system.
Brace – a rigid connection that holds one scaffold member in a fixed position with respect to another member, or to a building or structure.
Cleat - a structural block used at the end of a platform to prevent the platform from slipping off its supports. Cleats are also used to provide footing on sloped surfaces such as crawling boards.
Competent person – one who is capable of identifying existing and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them.
Coupler – a device for locking together the tubes of a tube and coupler scaffold.
Deceleration device – any mechanism, such as a rope grab, rip-stitch lanyard, specially woven lanyard, tearing or deforming lanyard, or automatic self-retracting lifeline lanyard that dissipates a substantial amount of energy during a fall arrest or limits the energy imposed on an employee during fall arrest.
Exposed power lines – electrical power lines that are accessible to employees and that are not shielded from contact. Such lines do not include extension cords or power tool cords.
Fabricated decking and planking – manufactured platforms made of wood (including laminated wood, and solid sawn wood planks), metal, or other materials.
Fabricated Frame scaffold ("tubular welded frame scaffold") – a scaffold consisting of a platform(s) supported on fabricated end frames with integral posts, horizontal bearers, and intermediate members.
Guardrail system – a vertical barrier, consisting of, but not limited to, top rails, midrails, and posts, erected to prevent employees from falling off a scaffold platform or walkway to lower levels.
Landing – a platform at the end of a flight of stairs.

Large area scaffold – a pole scaffold, tube and coupler scaffold, systems scaffold, or fabricated frame scaffold erected over substantially the entire work area (e.g. a scaffold erected over the entire floor area of a room).
Lifeline – a component consisting of a flexible line that connects to an anchorage at one end to hang vertically (vertical lifeline), or that connects to anchorages at both ends to stretch horizontally(horizontal lifeline), and that serves as a for connecting other components of a personal fall arrest system to the anchorage.
Lower levels – areas below the level where the employee is located and to which an employee can fall. Such areas include but are not limited to ground levels, floors, roofs, ramps, runways, excavations, pits, tanks, materials, water, and equipment.
Maximum intended load – the total load of all persons, equipment, tools, materials, transmitted loads, and other loads reasonably anticipated to be applied to a scaffold or scaffold component at any one time.
Mobile scaffold – a powered or unpowered, portable, caster, or wheel-mounted supported scaffold.
Open sides and ends – the edges of a platform that are more than 14 inches away horizontally from a sturdy, continuous, vertical surface (such as a floor), or a point of access. **Exception:** for plastering and lathing operations, the horizontal threshold distance is 18 inches.
Outrigger – the structural member of a supported scaffold used to increase the base width of a scaffold in order to provide support for and increased stability of the scaffold.
Personal fall arrest system – a system used to arrest an employee's fall. It consists of an anchorage, connectors, a body belt or body harness and may include a lanyard, deceleration device, lifeline, or combinations of these.
Platform – a work surface elevated above lower levels. Platforms can be constructed using individual wood planks, fabricated planks, fabricated decks, and fabricated platforms.
Qualified – one who, by possession of a recognized degree, certificate, or professional standing, or who by extensive knowledge, training, and experience, has successfully demonstrated his/her ability to solve or resolve problems related to the subject matter, the work or the project.
Rated load – the manufacturer's specified maximum load to be lifted by a hoist or to be applied to a scaffold or scaffold component.
Runner ("ledger" or "ribbon") – the lengthwise horizontal spacing of bracing member that may support the bearers.
Stair tower ("scaffold stairway/tower") – a tower comprised of scaffold components that contains internal stairway units and rest platforms. These towers are used to provide access to scaffold platforms and other elevated points such as floors and roofs.
Supported scaffold – one or more platforms supported by outrigger beams, brackets, poles, legs, uprights, posts, frames, or similar rigid support.
System scaffold – a scaffold consisting of posts with fixed connection points that accept runners, bearers, and diagonals that can be interconnected to predetermined levels.
Tube and coupler scaffold – a supported or suspend scaffold consisting of a platform(s) supported by tubing, erected with coupling devices connecting uprights, braces, bearers, and runners.
Tubular welded frames scaffold – see "fabricated frame scaffold"

RESPONSIBILITIES

Duties of Competent and Qualified Persons

Only qualified and competent personnel are allowed to modify scaffolding systems. Modifications made by non-qualified personnel may create more hazards and are prohibited. If modifications are attempted by non-qualified personnel, they will be subject to disciplinary action up to and including termination of employment.

REQUIREMENTS AND PROCEDURES

There are many components to a properly built scaffold, set up is time consuming, and there can be obstacles. Because of this, the safety department at Baker Group would like to encourage you to use us as a resource when constructing scaffold systems. We can offer recommendations or even help you look for an alternate method. Due to our limited use of scaffolding, only “baker” and tubular welded frame scaffolds should be erected under the supervision of competent Baker Group employees. All other scaffolds should only be erected with the guidance of a member of the Baker Group safety department. Aerial lifts often provide a much safer alternative to using scaffolds. They typically allow for the job to be done faster and safer than the same job done from a scaffold.

General requirements

Capacity

Each scaffold and scaffold component shall be capable of supporting its own weight and at least four times the maximum intended load. Scaffolds shall be designed by a qualified person and shall be built and loaded to that design.

Scaffold platform construction

- Each scaffold platform shall be fully planked or decked.
- Each scaffold platform shall be installed so that the space between adjacent units and the spce between the platform and the uprights is no more than one inch wide, except where it can be demonstrated to be necessary (e.g., to fit around uprights when side brackets are used to extend the width of the platform).
- Each scaffold walkway shall be at least 18inches wide.
- The front edge of all platforms shall not be more than 14 inches from the face of the work, unless guardrail systems are erected along the front edge and/or personal fall arrest systems are used.
- Each end of a platform, unless cleated or otherwise restrained by hooks or equivalent, shall extend over the centerline of its support at least six inches.
- Each end of a platform 10feet or less in length shall not extend over its supports more than 12 inches unless otherwise designated.
- Each platform greater than 10 feet shall not extend over its support more than 18 inches unless otherwise designated.
- On scaffolds where platforms are abutted to create a long platform, each abutted end shall rest on a separate support surface.
- On scaffolds where platforms are overlapping to create a long platform, the overlap shall occur only over supports, and shall not be less than 12 inches unless the platforms are nailed together or otherwise restrained to prevent movement.
- At all points of a scaffold where the platform changes direction, any platform that rests on a bearer at an angle other than a right angle shall be laid first, and platforms that res at right angles over the same bearer shall be laid second.
- There shall not be paint on wood platforms, except on edges that may be marked for identification.
- Mixed scaffold components shall not be used unless they are compatible and integrity is maintained.
- Modification of such components shall not occur unless a competent person approves.

Criteria for Supported Scaffolds

- Supported scaffolds with a height to base ratio of more than 4 to 1 shall be restrained from tipping by guying, tying, bracing, or equivalent.

- Guys, ties, and braces shall be installed according to the manufacturer's recommendations or at the closest horizontal member to the 4 to 1 height and be repeated vertically at locations of horizontal members every 20ft or less thereafter for scaffolds 3ft wide or less, and every 26ft or less thereafter for scaffolds greater than 3ft wide.
- Supported scaffolds shall bear on adequate firm foundations. They shall also be plumb and braced to prevent swaying and displacement.

Access

- Safe access to the scaffold platform shall be established. This may include the use of a portable ladder, hook-on ladder, stair tower, or prefabricated integral scaffold access. **Cross braces shall not be used as a means of access.**
- The bottom rung of the scaffold access ladder shall be no more than 24" above the ground or supporting level.
- When hook-on or attached ladders are used on a scaffold more than 35ft high, they shall have rest platforms at 35ft maximum vertical intervals. When stairway-type ladders are used, there shall be rest platforms at 12ft maximum intervals.
- Access ladders shall have uniformly spaced rungs, and shall meet all other requirements of the ladders and stairways section of this manual regarding access ladders.
- End frames may be used only if they meet the following requirements:
    - They must be specifically designed for use as ladder rungs;
    - They must have a rung length of at least 8 inches;
    - They must have uniformly spaced rungs (unless non-uniform spacing is caused by joining end frames, in which case they may be used unless the resulting spacing exceeds 16 ¾ inches);
    - They must have rungs that line up vertically.
- Access and/or personal fall arrest systems for employees erecting and dismantling supported scaffolds shall be provided whenever feasible as determined by a competent person. The competent person must decide whether or not this creates a greater hazard. **When erecting tubular welded frame scaffolds, end frames with horizontal members that are parallel, level, and are not more than 22 inches apart vertically may be used as climbing devices for access.**

Tagging

Tags must be placed at each point of entry to the scaffold. This includes access points from ground level and any access points from the structure with which the scaffold is being used.

Doing so ensures that workers are aware of the status and condition of the scaffold, regardless of where they access it. Whatever their color, tags must include:

- The duty rating of the scaffold
- The date on which the scaffold was last inspected
- The name of the competent worker who inspected the scaffold
- Any precautions to be taken while working on the scaffold, and
- The expiry date of the tag

Scaffolds must be inspected prior to initial use and after any occurrence which could affect the scaffolds structural integrity

The tags let workers know that a particular scaffold is safe for use, that a potential or unusual hazard is present, or the scaffold is unsafe for use. The yellow tag is required to describe any precautions to be taken while working on the scaffold. A scaffold being modified on a particular level requires a yellow tag. The tag alerts workers climbing onto the scaffold of the modification work and any special precautions that might affect them.

Color of Inspection Tag	Wording to Appear on Tag
Green	"Safe for Use" or similar wording
Yellow	"Caution: Potential or Unusual Hazard" or similar wording
Red	"Unsafe for Use" or similar wording

Use

- Scaffolds and their components shall not be overloaded.
- A competent person before each work shift shall inspect scaffolds and their components for visible defects, and after any occurrence that could affect a scaffold's structural integrity.
- Any part of a scaffold damaged or weakened so that its strength is less than that required by this standard shall be immediately repaired or replaced, braced to meet those provisions, or removed from service.
- The clearance between scaffolds and power lines shall be as follows:

Insulated Lines	Minimum Distance
Less than 300 Volts	3 Feet
330 Volts to 50kV	10 Feet
More than 50kV	10 Feet plus 4 inches for each 1kV or 50kV
or	
2 times the length of the line insulator, but never less than 10 feet	

Uninsulated Lines	Minimum Distance
Less than 50kV	10 Feet
More than 50kV	10 Feet plus 4 inches for each 1kV or 50kV
or	
2 times the length of the line insulator, but never less than 10 feet	

- Scaffolds shall be erected, moved, dismantled or altered only under the supervision of a competent person.
- Employees shall be prohibited from working on scaffolds with ice, snow, or other slippery material except as necessary for removal of such materials.
- Scaffolds may only be moved horizontally while employees are on them if:
    - The working level is free from pits, holes, and obstructions;
    - The scaffold is steered by an employee on the working level;
    - The employees on the scaffold platform are in a kneeling position
- Where swinging loads are being hoisted onto or near scaffolds such that the loads might contact the scaffold, tag lines shall be used to control the load.

- Work from scaffolds is prohibited during storms or high winds unless a competent person has determined that it is safe for employees to be on the scaffold and those employees are protected by a personal fall arrest system or wind screens. Windscreens shall not be used unless the scaffold is secured against the anticipated wind forces imposed.
- Debris shall not be allowed to accumulate on platforms.

Fall Protection

- Each employee on a scaffold more than 10ft above a lower level shall be protected from falling to that lower level.
- Guardrail systems shall be installed along all open sides of platforms**.**
- the top rail shall be installed between 39 and 45 inches above the platform surface.
- Midrails shall be installed at a height approximately midway between the top edge of the guardrail system and the scaffold platform surface.
- When screens, mesh, intermediate vertical members, solid panels, or equivalent are used, they shall be installed between the top edge of the guardrail system and the scaffold platform and along the entire opening between the supports.
- When intermediate members are used, they shall not be more than 19 inches apart.
- Each top rail shall be capable of withstanding, without failure, a force applied in any downward or horizontal direction at any point along its edge of at least 200lbs.
- Midrails, screens, mesh, intermediate members, solid panels, and equivalent structural members of a guardrail system shall be capable of withstanding, without failure, a force applied in any downward or horizontal direction at any point along its surface of at least 150lbs.
- Guardrails shall be surfaced to prevent injury to an employee from punctures or lacerations, and to prevent snagging of clothing.
- The ends of all rails shall not overhang posts unless they do not constitute a projection hazard to employees.
- Steel or plastic banding shall not be used as a top rail or midrail, and all guardrails must measure at least ¼" in nominal thickness.
- Cross bracing is acceptable in the place of a midrail when the crossing point of the two braces is between 20inches and 30inches above the work platform or as a top rail when the crossing pointof the two braces is between 38inches and 48inches above the work platform. The end points at each upright shall be no more than 48inches apart.

Falling object protection

- **In addition to wearing hard hats,** each employee on and around scaffolds shall be provided with additional protection from falling objects through the installation of toe boards, screens, or guardrail systems, or through the erection of debris nets or canopies.
- **where there is a danger of falling objects striking employees below a scaffold,** the area below the scaffold to which objects can fall shall be barricaded so that employees will not be permitted to enter the hazard area. A toe board shall be erected along the edge of the platform. A canopy may also be used to catch falling objects.
- when toe boards are used, they must be capable of withstanding, without failure, at least 50lbs of force in any downward or horizontal direction. Toe boards must also measure at least 3 ½" high, they shall be securely fastened in place, and may not have more than ¼" of clearance above the platform.

TRAINING AND COMPETENCY

Training

Recognizing the need for training for workers who:

- perform work while on scaffolds
- are involved in erecting, disassembling, moving, operating, repairing, maintaining, or inspecting scaffolds
- have lost the requisite proficiency, training is one of the highest priorities of this program.

Workers Who Use Scaffolds

Baker Group workers who perform work on scaffolds will be trained by a qualified person to recognize the hazards associated with the type of scaffold being used and to understand the procedures to control or minimize those hazards. All Baker Group workers will comply with scaffold tags. The training will include the following areas as applicable:

- The nature of and the correct procedures for dealing with electrical hazards.
- The nature of and the correct procedures for erecting, maintaining, and disassembling the fall protection and falling object protection systems used.
- The proper use of the scaffold, and the proper handling of materials on the scaffold.
- The maximum intended load and the load-carrying capacities of the scaffolds used.
- Tagging of scaffolds.
- Any other pertinent requirements of the local standards and regulations.

Workers Who Erect, Disassemble, Move, Operate, Repair, Maintain, or Inspect Scaffolds

Baker Group workers who erect, disassemble, move, operate, repair, maintain, or inspect scaffolds will be trained by our competent person to recognize the hazards associated with the work being done. The training will include the following:

- The nature of scaffold hazards.
- The correct procedures for erecting, disassembling, moving, operating, repairing, inspecting, and maintaining the type of scaffold in question.
- The design criteria, maximum intended load-carrying capacity, and intended use of the scaffold.
- Tagging of scaffolds.
- Any other pertinent requirements of this subpart.

Workers Who Need Retraining

When we have reason to believe that one of our workers lacks the skill or understanding needed for safe work involving the erection, use or dismantling of scaffolds, we will retrain the worker so that the requisite proficiency is regained. Retraining will be done in at least the following situations:

- Where changes at the worksite present a hazard about which the worker has not been previously trained.
- Where changes in the types of scaffolds, fall protection, falling object protection, or other equipment present a hazard about which a worker has not been previously trained.
- Where inadequacies in an affected worker's work involving scaffolds indicate that the worker has not retained the requisite proficiency.

SUPPORTING DOCUMENTS
ASSOCIATED DOCUMENTS AND REFERENCE

Stairways and Ladders

PURPOSE

Baker Group is committed to providing a safe and healthy workplace. This program has been developed to set forth practice requirements and procedures to protect Baker Group workforce while working on stairways and ladders and to comply with applicable regulations.

SCOPE

The scope of the stairways and ladders policy applies to all Baker Group employees.

ACRONYMS, DEFINITIONS, & LANGUAGE

DEFINITIONS

Cleat - A ladder crosspiece of rectangular cross section placed on edge upon which a person may step while ascending or descending a ladder.

Double -cleat ladder - A ladder similar in construction to a single -cleat ladder, but with a center rail to allow simultaneous two-way traffic for employees ascending or descending.

Equivalent - Alternative designs, materials, or methods that the employer can demonstrate will provide an equal or greater degree of safety for employees than the method or item specified in the standard.

Extension trestle ladder - A self-supporting portable ladder, adjustable in length consisting of a trestle ladder base and a vertically adjustable extension section, with a suitable means for locking the ladders together.

Failure - Load refusal, breakage, or separation of component parts. Load refusal is the point where the structural members lose their ability to carry the loads.

Fixed -ladder - A ladder that cannot be readily moved or carried because it is an integral part of a building or structure. A side-step fixed ladder is a fixed ladder that requires a person getting off at the top to step to the side of the ladder side rails to reach the landing. A through fixed ladder is a fixed ladder that requires a person getting off at the top to step between the side rails of the ladder to reach the landing.

Handrail - A rail used to provide employees with a handhold for support.

Individual -rung/step ladders - ladders without a side rail or center rail support. Such ladders are made by mounting individual steps or rungs directly to the side or wall of the structure.

Job -made ladder - A ladder that is fabricated by employees, typically at the construction site, and is not commercially manufactured. This definition does not apply to any individual -rung/step ladders.

Ladder stand - A mobile fixed size self-supporting ladder consisting of a wide flat tread ladder in the form of stairs. The assembly may include handrails.

Lower levels - Those areas to which an employee can fall from a stairway or ladder. Such areas include ground levels, floors, roofs, ramps, runways, excavations, pits, tanks, material, water, equipment, and similar surfaces. It does not include the surface from which the employee falls.

Maximum intended load - The total load of all employees, equipment, tools, materials, transmitted loads, and other loads anticipated to be applied to a ladder component at any one time.

Nosing - That portion of a tread projecting beyond the face of the riser immediately below.

Point of access - All areas used by employees for work related passage from one area or level to another. Such open areas include doorways, passageways, stairway openings, studded walls, and various other permanent or temporary openings used for such travel.

Portable ladder - A ladder that can be readily moved or carried.
Riser height - The vertical distance from the top of a tread to the top of the next higher tread or platform/landing, or the distance from the top of a platform/landing to the top of the next higher tread or platform/landing.

Single -cleat ladder - A ladder consisting of a pair of side rails, connected together by cleats, rungs, or steps.

Spiral stairway - A series of steps attached to a vertical pole and progressing upward in a winding fashion within a cylindrical space.

Tread depth - The horizontal distance from front to back of a tread (excluding nosing, if any).

Unprotected sides and edges - Any side or edge (except at entrances to points of access) of a stairway where there is no stair rail system or wall 36 inches (.9 m) or more in height, and any side or edge (except at entrances to points of access) of a stairway landing, or ladder platform where there is no wall or guardrail system 39 inches (1 m) or more in height.

LANGUAGE

Throughout Baker Group defined and recommended practices, the following words have specific meanings,

"Shall" is used when a provision is mandatory.
"Should" is used when a provision is preferred.
"May" is used when alternatives are equally acceptable.

REQUIREMENTS AND PROCEDURES

Stairways or ladders shall be implemented at all worker points of access where there is a break in elevation of 19 inches or more and no ramp, runway, embankment, or personnel hoist exists. All such points of access must be kept clear to permit free passage.

Stairways

Variations in riser height or stair tread depths may not exceed 1/4 inch.

Stairways in Temporary Service During Construction
Except during stairway construction, foot traffic is prohibited on stairways with pan stairs where the treads and/or landings are to be filled in with concrete or other material at a later date, unless the stairs are temporarily fitted with wood or other solid material at least to the top edge of each pan. Such temporary treads and landings shall be replaced when worn below the level of the top edge of the pan.

Stair rails and Handrails
Stairways having four (4) or more risers or rising more than 30" (76 centimeters, whichever is less) shall be equipped with at least one handrail and one stair rail system along each unprotected side or edge.

Top rails of stair rail system and handrails shall be capable of withstanding, without failure, a force of at least 200 pounds in any downward or outward direction.

The height of the handrail shall be no more than 37" (94 centimeters) nor less than 30" (76 centimeters) from the upper surface of the handrail to the surface of the tread in line with the face of the riser at the forward edge of the tread.

Ladders
Ladders should be used only for the purpose for which they are designed and shall meet OSHA / ANSI specifications.
Ladders shall be used per load limits and must not be exceeded. Load limits to be identified by stickers affixed to the ladder.
Rungs, cleats, and steps of portable ladders must not be spaced less than 10 inches nor more than 14 inches apart and shall be of uniform spacing.
Portable ladders shall have non-conductive side rails.
Wood ladders should not be covered with any opaque covering except for identification or warning labels that may be placed on one face only on a side rail.

Use
Take the ladder down when you are through using it. In an operating facility take it down at the end of each shift.
Face the ladder and use three points of contact when climbing.
Do not overreach while on a ladder.
Move the ladder when necessary. Always dismount the ladder before moving, do not walk it.

Step Ladders
- Step ladders shall be used fully opened.
- Do not use step ladders as straight ladders.
- Do not use "A" Type or step ladders as ends for scaffolding supports.
- The top or top step of a step ladder shall not be used as a step. Follow manufacturers' recommendations that are posted on the ladder.

Extension Ladders
- When portable ladders are used for access to an upper landing surface, the ladder side rails shall extend at least three feet above the upper landing surface to which the ladder is used to gain access.

- Non-self-supporting ladders shall be used at an angle such that the horizontal distance from the top support to the foot of the ladder is approximately 1/4 of the working length of the ladder.
- Ladders shall not be moved, shifted, or extended while occupied.
- Ladders shall not be used on slippery surfaces unless secured or provided with slip resistant feet to prevent accidental displacement. Slip resistant feet shall not be used as a substitute for care in placing, lashing, or holding a ladder that is used upon slippery surfaces including, but not limited to, flat metal or concrete surfaces that are constructed so they cannot be prevented from becoming slippery.
- Do not use metal type ladders where they may come in contact with electricity.

Inspection
Ladders shall be inspected by a competent person for visible defects on a quarterly basis, using our color coding system of white, green, red and orange. Tagging shall be secured on all ladders on the top or bottom rung, or both rungs, depending on the type of the ladder.

Inspections shall be completed:
- When received,
- Daily visual,
- When damage is suspected,
- Formally in accordance with quarterly inspection program.

Inspections shall consist of viewing the entire ladder for:
- Legible manufacturer and warning labels.
- Cracks, splits, splinters and decay.
- Protruding nails and loose rivets.
- Loose, bent or broken rungs, braces or tie rods.
- Rungs free from grease and oil.
- Non -slip foot grips on all ladders and insulating foot grips on conducting ladders.
- Improvised repairs must not be made.

Portable ladders with structural defects, such as, but not limited to, broken or missing rungs; cleats; or steps; broken or split rails; corroded components; or other faulty or defective component shall be immediately tagged between the fourth and fifth rung with the wording: “Dangerous, Do Not Use.” or similar language. These ladders shall be returned to the Tools & Equipment Department to be further inspected, repaired, or taken permanently out of service. Defective tool tags are provided by the Tools & Equipment Department.

TRAINING AND COMPETENCY
Baker Group shall have each employee who performs work while on stairways or ladders trained by a person qualified to recognize the hazards associated with stairways and ladders. The training shall include content pertaining to the nature of fall hazards in the work area, the proper construction, use, placement, and care in handling of all stairways and ladders, and the maximum intended load-carrying capacities of ladders used.

When Baker Group has reason to believe that an employee lacks the skill or understanding needed for safe work on stairways or ladders, the employer shall retrain each such employee.

SUPPORTING DOCUMENTS

ASSOCIATED DOCUMENTS AND REFERENCE

The following standard is relevant to this practice:

- OSHA – 1926.1050 Subpart X (Stairways and Ladders)

Forklifts / Powered Industrial Trucks

PURPOSE

Baker Group is committed to providing a safe and healthy workplace. This program was developed to reduce the risk of physical injury or property damage in areas where powered industrial trucks are in operation. It also brings Baker Group into compliance with federal, state and local law.

SCOPE

The Baker Group forklift / powered industrial truck program applies to the operation of all powered industrial trucks, forklifts, tractors, platform lift trucks, motorized hand trucks, and other specialized industrial trucks powered by electric motors or internal combustion engines by Baker Group employees.

ACRONYMS, DEFINITIONS, & LANGUAGE

DEFINITIONS

Operator – an individual who is properly trained, has the knowledge, experience and is authorized to use a forklift/powered industrial truck.

LANGUAGE

Throughout Baker Group defined and recommended practices, the following words have specific meanings,

"Shall" is used when a provision is mandatory.

"Should" is used when a provision is preferred.

"May" is used when alternatives are equally acceptable.

REQUIREMENTS AND PROCEDURES

Inspection

All forklifts shall be inspected every shift, prior to use.

Any defects (such as hydraulic fluid leaks; defective brakes, steering, lights, or horn; and/or missing fire extinguisher, lights, seat belt, or back-up alarm) must be reported for immediate repair. The forklift shall be tagged "out of service" until it is serviced by a person qualified to perform service.

Forklift Operations

Operators shall wear seat belts at all times.
Passengers are not allowed to ride on an industrial truck, unless the truck has an extra seat that allows the passenger to buckle-up while riding.
Lift capacity must be marked on all powered industrial trucks and operators must assure the load does not exceed rated weight limits.
All modifications shall be approved by the manufacturer, and new rated load capacities determined and posted on the truck. Written approval is required.

Loading

Only loads within the rated capacity of the forklift shall be handled.
Only stable or safely arranged loads shall be handled.
Caution shall be exercised when handling off-centered loads that cannot be centered.

Traveling
Stunt driving and horseplay shall not be permitted.
All traffic regulations shall be observed.
The operator shall be required to look in the direction of, and keep a clear view of, the path of travel.
If the load being carried obstructs forward view, the driver will be required to travel with the load trailing.
The operator shall be required to slow down and sound the horn at cross aisles and other locations where vision is obstructed.
Railroad tracks shall be crossed diagonally wherever possible.
Forklifts may not be parked within eight feet of railroad tracks.
Under all travel conditions, the forklift shall be operated at a speed that will permit it to stop in a safe manner.
All operators shall slow down for wet or slippery conditions.

Fueling, changing, and charging batteries
Fuel tanks shall not be filled while the engine is running.
Spillage of oil or fuel must be cleaned per Baker Group Hazardous waste management and spill prevention/response plan.
Any spill clean-up debris shall be properly disposed of.
Forklifts shall not be operated with a leak in the fuel system.
Battery charging stations shall be designated for that purpose.
Open flames are not permitted in charging / changing battery locations.

Maintenance
Any power-operated industrial truck not in safe operation condition shall be removed from service.
All repairs shall be made by authorized personnel.
Forklifts in need of repair to electrical system shall have the battery disconnected prior to such repairs.
All parts needing replacement shall be replaced only by parts recommended by the manufacturer.

TRAINING AND COMPETENCY
All employees who will operate forklifts shall be trained in safe operations of forklifts. Employees who are authorized to operate powered industrial trucks shall receive training prior to engaging in their duties, and at least every three (3) years thereafter. The training is to ensure that the forklift / powered industrial truck program is understood. The training program includes formal instruction, practical training, and operator evaluation in the workplace. Employee will receive a certification card upon completion of training. Training is conducted by a member of the safety department who has the knowledge, experience, and the competency to evaluate the training and testing. Hands on training on the specific style of powered industrial truck may be conducted by the job foreman or trade superintendent.

Training Program Content
Objectives and requirements to obtain operating abilities.

- Operating instructions, warnings, and precautions for the types of forklift the operator will be authorized to operate.
- Differences between the powered industrial truck and the automobile.
- Powered industrial truck controls and instrumentation such as where they are located, what they do, and how they work.
- Engine or motor operation.

- Steering and maneuvering.
- Visibility to include restrictions due to loading
- Fork and attachment adaptation, operation, and use limitations,
- Vehicle capacity and stability.
- Operator required inspections and maintenance.
- Refueling and/or charging and recharging of batteries.
- Operating limitations.
- Any other operating instructions, warnings, or precautions listed in the operator's manual for the types of powered industrial truck that the employee is being trained to operate.

Workplace-related content

- Surface conditions where the vehicle will be operated.
- Composition of loads to be carried and load stability.
- Load manipulation, stacking, and unstacking.
- Pedestrian traffic in areas where the powered industrial truck will be operated.
- Hazardous (classified) locations where the powered industrial truck will be operated.
- Ramps and other sloped surfaces that could affect the powered industrial truck's stability.
- Closed environments and other areas where insufficient ventilation or poor powered industrial truck maintenance could cause build-up of carbon monoxide or diesel exhaust.
- Other unique or potentially hazardous environmental conditions in the workplace that could affect safe operations.

Refresher Training

The following are requirements when operators need refresher training.

- Every three (3) years.
- When unsafe operations, accidents, different vehicle type, or changes in conditions occur.

The refresh training to include: Review of the pre-use inspection and maintenance record, Review of the requirements and procedures portion of this policy, and updated information on new equipment.

Training Records

Shall be maintained in the employee's file on training vault. The documentation shall state subject of training, date of training, name of individual, and the name of the trainer. Refresher training to be compiled and maintained in the same system.

SUPPORTING DOCUMENTS

ASSOCIATED DOCUMENTS AND REFERENCE

The following standard is relevant to this practice:

- OSHA – 1910.178 (Powered Industrial Trucks)

Cranes, Hoisting, Rigging and Signaling

PURPOSE

To set forth practice requirements and procedures to guide Baker Group's workforce engaged in crane activities and comply with applicable regulations. Cranes can be a high risk activity.

SCOPE

This practice has been prepared for the Baker Group workforce and applies to work performed at Baker Group facilities (fabrication shops) or jobsites (customer premises). This practice may be superseded by equivalent or more stringent host employer, controlling contractor, or regulatory requirements.

ACRONYMS, DEFINITIONS AND LANGUAGE

Throughout Baker Group defined and recommended practices, the following words have specific meanings:

'Shall' is used when a provision is mandatory.
'Should' is used when a provision is preferred.
'May' is used when alternatives are equally acceptable

Critical crane pick – hoisting operations that involve one or more of the following:

- Lifts involving 2 or more cranes
- Hoisting personnel
- Hoisting of irreplaceable, high value or hazardous materials
- Approaching maximum crane capacity (70-90%)
- Where the load cannot be reasonably estimated
- Non-routine or technically difficult rigging configuration
- Lifting above people and/or critical assets
- Any lift that the crane operator believes to be critical

RESPONSIBILITIES

Baker Group will contract out a crane and qualified operator if a crane is needed and one is not provided by the customer/other contractor.

The rental company/other contractor shall be responsible for all documentation, qualifications, certifications, and provide:

- A fully assembled and completed inspected crane and the removal of the crane and all persons assisting if needed:
    - Assembly and disassembly (A/D) shall be directed by a competent and qualified person who understands and is knowledgeable in the safe A/D procedure prior to A/D.
    - A/D director shall ensure that the manufacturer's procedures and prohibitions are followed.
    - Any persons participating in A/D must understand their tasks prior to starting and any hazards relating to A/D.
    - The A/D director needs to communicate with Baker Group and other A/D workers of hazardous positions or locations that must be avoided.

    - The A/D director shall be responsible for addressing specific hazards associating with A/D including working within load limits at all times
- A crane operator that is qualified and will follow all operational functions of the manufacturer.
- Crane that shall have manufacturer documentation and procedures in the cab at all times including documentation from the manufacturer of any modifications or additions that may affect the capacity or safe operation of the equipment.
- Any adjustments to location to ensure the ground conditions are able to safely support the equipment and any necessary materials as required by the manufacturer.
- Notification to Baker Group if work cannot begin as planned (such as all safety devices not be in proper working order) and a timeline of when work can start/resume.

REQUIREMENTS AND PROCEDURES

Employees of Baker Group shall comply with the manufacturer's specifications and limitations applicable to the operation of any and all cranes and derricks. Where manufacturer's specifications are not available, the limitations of the equipment shall be based on the determinations of qualified engineer competent in this field and such determinations will be appropriately documented and recorded. No modifications or additions, which affect the capacity or safe operation of the equipment, shall be made without the manufacturer's written approval.

A pre-lift risk assessment and conversation shall be performed prior to lifting a suspended load. If performing a critical crane pick, the critical crane pick document must be completed by a qualified person. The document shall be available at all times during the lift.

Rated load capacities, recommend operation speeds, and special hazard warnings shall be conspicuously posted on all equipment. Instructions or warnings shall be visible to the operator while they are at their control station.

Rated load limits shall never be exceeded.

Hand signals to crane and derrick operators shall be those prescribed by the applicable ANSI standard for the type of crane in use. An illustration of the hand signals shall be posted at the job site.

Hand signals given to crane or derrick operators shall come from a single, designated competent person. That person and all other persons shall be kept clear of loads about to be lifted and of suspended loads.

A competent person shall inspect all machinery and equipment prior to each use and during use to make sure it is in safe operating condition. In additions, records of an annual inspection of the hoisting machinery shall be maintained on-site, including dates and results of the inspection. Annual inspections shall be completed by a qualified person.

Belts, gears, shafts, pulleys or other reciprocating, moving or excessively hot (exhaust pipes, for example) parts shall be guarded if such parts are exposed to contact by employees.

Areas within the swing radius of the rotating superstructure of the crane shall be barricaded to prevent an employee from being struck by the crane.

An accessible fire extinguisher of 5BC rating or highershall be available at all operator stations or cabs of equipment.

Equipment or machines shall be operated proximate to power lines only in accordance with the following:

- For lines rated 350kV or below, minimum clearance between the lines and any part of the crane or load shall be 20 feet.
- For lines rated over 350kV and under 1000kV, minimum clearance between the lines and any part of the crane or load shall be 50 feet.
- For lines rated over 1000kV, minimum clearance distance must be determined by utility owner/contractor.

A designated spotter shall be appointed to observe clearance of the equipment and ensure no part of the crane or the load will encroach the 20 foot minimum distance and give timely warning for all operations where it is difficult for the operator to maintain the desired clearance by visual means.

A visual aid shall be used to warn of power line encroachment when a crane or load has capability of coming within 20 feet of the power line. Visual aid examples include, a clearly visible painted line, a clearly visible line of stanchions, a set of clearly visible line-of sight landmarks.

Adequate clearance shall be maintained between moving and rotating structures of the crane and fixed objects to allow the passage of employees without harm.

All overhead gantry cranes shall be plainly marked on each side of the crane, and if the crane has more than one hoisting unit, each hoist shall have its rated load marked on it or its load block, and this marking shall be clearly legible from the ground or floor.

During all lifting evolutions, one competent person shall be designated to communicate with the crane operator.

Do not pull the load-block to one side to attach it to the load. Center the boom-point directly over the load before hooking up.

Use crane outriggers at all times, except when traveling. Make every reasonable effort to keep the outriggers extended when the crane is moving with a load.

Operate cranes on firm level ground or use mats, particularly for near-capacity lifts.

Rope off or barricade a space 360 degrees around the swing radius of the rear of the rotating superstructure of the cranes operating at a job site.

Never leave the crane controls while the engine is running or when the platform is occupied.

Cranes with telescoping booms shall be equipped with a device to indicate clearly to the operator, at all times, the boom's extended length or an accurate determination of the load radius to be used during the lift shall be made prior to hoisting.

<u>Lifting Personnel</u>

Never ride a material hoist.

Entrance to hoist ways shall be protected with gates or bars.

Rigging

Inspections

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. Additional inspections shall be performed during sling use, where service conditions warrant. Damaged or defective slings shall be immediately removed from service.

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. Defective rigging equipment shall be removed from service.

Welded alloy steel chain slings shall have permanently affixed durable identification stating size, grade, rated capacity, and sling manufacturer.

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.

In addition to the inspection required by other paragraphs of this section, 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. Such inspections shall in no event be at intervals greater than once every 12 months.

Rigging equipment shall not be loaded in excess of its recommended safe working load.

Wire rope shall not be used if, in any length of 8 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.

Sling legs shall not be kinked. Slings used in a basket hitch shall have the loads balanced to prevent slippage. Slings shall be padded or protected from the sharp edges of their loads.

Slings

There are a wide variety of slings available for rigging. They can be manufactured from fiber or wire rope, metal mesh, chain, or synthetic materials such as nylon, polypropylene and polyester. Slings can also be combined with various attachments such as hooks and rings.

The safe use of slings requires staying within their rated capacity, largely dependent upon three important factors. The hitch in which the sling is configured, the angle of the sling, and the sharpness of the edges of the load which the sling passes around.

Hitches

The method in which a sling is rigged or attached to a load is referred to as a hitch. The weight and shape of the load will largely determine which type of slings and hitches are used.

There are three basic types of hitches: Vertical, Choker, and Basket. Each hitch is capable of being set into various configurations. There are different kinds of hitches:

- Vertical – when one end is attached to the load and the other end is attached to the lifting device or mechanism with the angle of loading being less than 5 degrees. This type of hitch should not be used for lifting loose material or loads that are difficult to balance. This type of hitch is best used with a shackle attached to an eye bolt or lifting eye.
- Bridle – a sling or hitch is composed of two or more individual legs attached to a lifting hook or gathered in a fitting. This hitch provides good load stability when the load weight is distributed among the legs and the hoisting hook is directly over the load's center of gravity. When using a three or four leg bridle the weight may not be distributed evenly throughout all the legs, in this situation the capacity of two sling legs must be great enough to support the load.
- Basket – wrapping or passing a sling around a load and attaching the eyes to a lifting device such as a hook is how a basket hitch is configured. Because the load can shift or even fall out of the sling, a single basket hitch must not be used to lift loads that are difficult to balance. A double wrap basket hitch is the same as a basket hitch with an additional wrap that goes completely around the load, it is ideal for lifting loose material. The gripping effect helps prevent the slings from sliding inward.
- Choker – a choker hitch is accomplished by passing a sling around the load and through one eye or end fitting where it is then attached to a lifting hook. A double choker hitch can also be used, which is the same as a choker except that an additional wrap is placed around the load.
- Angles – it is very important for slings to remain within the rated capacities that are listed in capacity tables. The rated capacity of the slings used to lift a load largely depends on the angles that are formed between the sling legs and horizontal plane. As the sling angles decrease, the loading or tension on the slings increases. It is not recommended to use sling angles below 30 degrees.
- Sharpness – some materials that are lifted have sharp edges that can wear on slings when wrapped around the material. Softeners must be places between such materials and slings to protect the integrity of the sling. Softeners must be stabilized to ensure proper lift when used.

Hardware

General Information

Hardware is an integral and important part of a rigging operation. There are many different types of hardware including but not limited to hooks, shackles, eye bolts, hoist rings, master links, turnbuckles, and blocks. The hardware most commonly used by Baker Group employees will be covered in this section.

Where practical, hardware should be marked with its size and rated capacity. Modifications should only be made when approved by the manufacturer, and repairs made in accordance to the manufacturer's instructions.

- Hooks – are made in many different sizes and shapes to meet a wide range of applications. There are many different types of hooks: eye, shank, clevis, grab, sorting, sliding choker. They can be attached to load blocks, slings, and other lifting devices such as lifting beams. When using two slings placed in a hook, ensure that the included angle between the slings is not greater than 90 degrees. This prevents the slings from coming out of the hook and prevents point loading which

reduces hook capacity. If the angle is greater than 90 degrees use a shackle to attach the sling legs to the hook, this prevents the slings from coming out of the hook and from reducing the capacity of the hook. Ensure that the hook, not the latch, supports the load. The sling or lifting device must always be seated properly in the bowl of the hook. Never side, back or point load a hook. All reduce hook strength and create an unsafe condition. Point loading can reduce hook capacity as much as 60%. Before use, hooks must be inspected by a competent person. Never repair, alter, or reshape a hook by welding, heating, burning or bending unless approved by the hook manufacturer.

- Shackles – are normally used to connect two lifting devices and are an essential element of most rigging operations. They should be stamped or embossed with their rated capacity and size. Some shackles are designed for a specific application, such as shackles manufactured for synthetic web slings. This type of shackle provides a wider bearing surface giving an increased area for load distribution on the sling. When using a shackle with a hook the shackle pin must be positioned across the hook. Shackles must be inspected by a competent person before being used. Any shackle that has been altered or repaired must be approved by the shackle manufacturer.
- Lifting beams – the most common types of lifting beams are the rigid beam and the spreader beam. Rigid beams are of a rigid structural member and can either have fixed or adjustable lift points. Spreader beams are composed of a structural member supported by rigging which directs most of the load stress to attachment points. A combination of both ca sometimes be use. Lifting beams are used so that slings can be used in a vertical configuration. The safe use of lifting beams require that the load be supported in such a manner that the beam and load remain level. The beam's rated capacity must never be exceeded. Inspection of lifting beams must be completed by a competent person before being used and annually thereafter with documentation kept.

Procedures

Turning Loads – to turn a load, use a double choker with sling body passing through the eyes of the sling, eyes being placed in the opposite direction of the turn. Ensure that the center of the sling body is placed over the hook and not the sling eyes. This method provides good control over the load because its weight is applied against the sling, allowing little or no movement between sling and load. Using only one hook requires the sling to be attached to the side of the load above the center of gravity. To prevent the load from sliding, the load may have to be simultaneously lifted and moved in the direction of the turn.

Securing Loads – loads must be secured before lifting, especially when lifting loose material such as pipe. Loads must be well secured and properly balanced in the sling or approved lifting device. Any "homemade" rigging must be pre-approved by an engineer.

Taglines – a common misconception is that a tagline is required to be used on every load. This can often make controlling a lift more difficult and sometimes even compromise safety if the tagline becomes tangled with a structure or piece of equipment. When a tagline is used make sure that it has sufficient strength and is long enough to keep personnel from under the load. When working around power lines be sure to use a nonconductive rope.

Placement of Loads – all loads must be placed on blocks. Slings must never be pulled from under a load while the load is resting on the slings. This can cause severe damage to the sling and ruin the integrity of the sling. Slings should be pulled from material by hand when possible. If pulled free by a crane, personnel

should stand clear. When storing loads, make sure that blocking has sufficient strength to support the load and should be placed in a stable manner.

SUPPORTING DOCUMENTS
ASSOCIATED DOCUMENTS AND REFERENCES

Excavation, Trenching, and Shoring

PURPOSE

Baker Group is committed to providing a safe and healthy workplace. This program will help in providing protection from injuries sustained as a result of working with excavations.

SCOPE

This practice has been prepared for the Baker Group workforce and applies to work performed on Baker Group or customer premises. This practice may be superseded by equivalent or more stringent host employer, controlling contractor, or regulatory requirements.

ACRONYMS AND DEFINITIONS

DEFINITIONS

Aluminum hydraulic shoring – a pre-engineered shoring system comprised of aluminum hydraulic cylinders (cross braces) used in conjunction with vertical rails (uprights) or horizontal rails (wales). Such a system is designed specifically to support the sidewalls of an excavation and prevent cave-ins.

Benching (benching system) – a method of protecting employees from cave-ins by excavating the sides of an excavation is to form one or a series of horizontal levels or steps, usually with vertical or near-vertical surfaces between levels.

Cave-in – the separation of a mass of soil or rock material from the side of an excavation, or the loss of soil from under a trench shield or support system, and its sudden movement into the excavation, either by falling or sliding, in sufficient quantity so that it could entrap, bury, or otherwise injure and immobilize a person.

Crossbraces – the horizontal members of a shoring system installed perpendicular to the sides of the excavation, the ends of which bear against either uprights or wales.

Excavation – any man-made cut, cavity, trench, or depression in an earth surface, formed by earth removal.

Faces or sides – the vertical or inclined earth surfaces formed as a result of excavation work.

Failure – the breakage, displacement, or permanent deformation of a structural member or connection so as to reduce its structural integrity and its supportive capabilities.

Hazardous Atmosphere – an atmosphere that by reason of being explosive, flammable, poisonous, corrosive, oxidizing, irritating, oxygen deficient, toxic, or otherwise harmful, may cause death, illness, or injury.

Protective system – a method of protecting employees from cave-ins, from material that could fall or roll from an excavation face or into an excavation, or from the collapse of adjacent structures. Protective systems include support systems, sloping benching systems, shield systems, and other systems that provide the necessary protection.

Ramp – an inclined walking or working surface that is used to gain access to one point from another, and is constructed from earth or from structural materials, such as steel or wood.

Registered Professional Engineer – this is a person who is registered as a professional engineer in the state where the work is to be performed. However, a professional engineer registered in any state, is

deemed to be a “registered professional engineer" within the meaning of this standard when approving designs for “manufactured protective systems” or “tabulated data” to be used in interstate commerce.
Sheeting – the members of a shoring system that retain the earth in position, and in turn are supported by other members of the shoring system.
Shield (shield system) – a structure that is able to withstand the forces imposed on it by a cave-in, and thereby protects employees within the structure. Shields can be permanent structures, or can be designed to be portable and moved along as work progresses. Additionally, shields can either be pre-manufactured or job-built. Shields used in trenches are usually referred to as “trench boxes” or “trench shields”.
Shoring (shoring system) – a structure, such as metal hydraulic, mechanical, or timber shoring system that supports the sides of an excavation and which is designed to prevent cave-ins.
Sides – see “faces”
Sloping system – a method of protecting employees from cave-ins by excavating in a way that forms side inclined away from the excavations so as to prevent cave-ins. The angle of incline required to prevent cave-in varies with differences in such factors as the soil type, environmental conditions of exposure, and application of surcharge loads.
Stable Rock – natural solid mineral material that can be excavated with vertical sides and will remain intact while exposed. Unstable rock is considered to be stable when the rock material on the side of sides of the excavation is secured against caving-in or movement by rock bolts or by another protective system that has been designed by a registered professional engineer.
Structural ramp – a ramp built of steel or wood, usually used for vehicle access. Ramps made of soil or rock are not considered structural ramps.
Support system – a structure, such as underpinning, bracing, or shoring that provides support to an adjacent structure, underground installation, or the sides of an excavation.
Tabulated data – tables and charts approved by a registered professional engineer and used to design and construct a protective system.
Trench (trench excavation) – a narrow excavation (in relation to its length) made below the surface of the ground. In general, the depth is greater than the width, but the width of a trench (measured at the bottom) is not greater than 15 feet. If forms or other structures are installed or constructed in an excavation so as to reduce the dimension measured from the forms or structure to the side of the excavation 6 to 15 feet or less, (measured at the bottom of the excavation), the excavation is also considered to be a trench.
Trench box – see “shield”
Trench shield - see "shield”
Uprights – the vertical members of a trench shoring system placed in contact with the earth, and usually positioned so that individual members do not contact each other. Uprights placed so that individual members are closely spaced, in contact with, or interconnected to each other are often called “sheeting”.
Wales – horizontal members of a shoring system placed parallel to the excavation face whose sides bear against the vertical members of the shoring system or earth.

RESPONSIBILITIES

REQUIREMENTS AND PROCEDURES

Excavations

OSHA standards require that walls and faces of all excavations in which workers are potentially exposed to danger from moving ground be guarded by a shoring system, safe sloping of the ground, or equivalent means of protection, such as trench shield or boxes.
OSHA standards require additional shoring and bracing procedures when excavations or trenches are located adjacent to previously backfilled excavations, or where excavations are subjected to vibrations from railroad or highway traffic, the operation of machinery, or other sources. For the first step in preventing any

injury or fatality, Baker Group will ensure that all excavation operations will be done only in full compliance with existing OSHA standards.
Baker Group requires that the following procedures are observed and followed whenever any excavation work is initiated and completed.

- A pre-excavation risk assessment and conversation shall be performed prior to completing trenching/excavating work.
- All surface encumbrances that are located so as to create a hazard to employees will be removed or supported, as necessary, to safeguard employees.
- The estimated location of utility installations, such as sewer, telephone, fuel, electric, water lines, or any other underground installations that may be expected to encountered during excavation work will be located before digging. Baker Group will call utility companies and shut off all electricity, gas, and water pipes in the excavation.
- Shoring systems, shielding systems, or sloping of the walls will be used in all excavations 5 to 20 feet deep in any type of soil, except solid, stable rock.
- Appropriate shoring, shielding, or sloping requirements for all excavations deeper than 20 feet will be determined by a registered professional engineer qualified to make these determinations.
- Excavation walls will be sloped at an angle of no more than 34 degrees. An excavation that is sloped at a steeper angle can collapse causing serious injury or death to the employee.
- Materials, including displaced soil, will not be placed two feet or less from the edge of the excavation.
- Employees shall not be permitted underneath loads handled by lifting or digging equipment. Employees shall be required to stand away from any vehicle being loaded or unloaded to avoid being struck by any spillage or falling materials.
- Access to excavation area will be controlled, i.e. flagging, barricading, etc…, and limited to those working in the excavation.
- Stop logs or barriers will be placed where vehicles and/or equipment operate near excavations to prevent accidental falls into the excavation.

Most deaths in trenches/excavations are from cave-ins. Other risks are falls, electrocution, being struck by falling objects, and atmospheric hazards. Many of these deaths occur from workers trying to rescue other workers. Some other rules regarding trenches/excavations include:

- Trenches / excavations 5ft. or greater in depth must be protected from a cave-in using sloping, shielding, or shoring methods.
    - Trenches / excavations less than 5ft in depth may require protection if the competent person deems it necessary.
- The competent person will inspect a trench / excavation:
    - Before every shift
    - If atmospheric hazards are expected, such as the trench is in a sewer or near a dump or stored chemicals.
    - After anything that can increase hazards, such as rainstorm, causing cracking, scaling, or bulging; and/or a heavy load near the trench / excavation moves or gets heavier.
- Before employees enter a trench / excavation, they will have it inspected by the competent person.
- Make sure all equipment is in good condition. This includes water pumps and ventilation equipment.
- Safe access and egress shall be provided for all excavations. Excavations 4ft. or greater in depth shall have a lateral access egress of a ladder, ramp or stairs within 25ft of all employees in the excavation.
- Where employees are required or permitted to cross over excavations, walkways or bridges with standard guardrails (as needed) shall be provided.

- Baker Group will have all utilities marked before digging. Call 8-1-1 to locate on public property, and use existing plans for privately owned facilities. Baker Group will call utility companies to protect, support, and/or shut off all electricity, gas, and water pipes in the trench / excavation.
- If atmospheric hazards exist, the competent person will have a rescue plan and rescue equipment on the job site.
    - Atmospheric monitoring requirements are:
        - 19.5 to 23.5 % oxygen
        - Substances that can burn or explode – like gasoline or methane – will be at less than 10% of the lower explosive limit (or lower flammability limit).
        - Check the air for toxics like chlorine, carbon monoxide, sewer gases, and hydrogen sulfide. (carbon monoxide has no smell, Hydrogen sulfide smells like rotten eggs).
        - If a gas monitor alarm sounds, all employees must vacate the excavation immediately.
- The competent person will decide if blowers (or other methods of ventilation) can create/maintain a safe atmosphere.
- Accumulating water in a trench / excavation must be controlled as it creates an unsafe environment. Special precautions necessary to protect employees adequately vary with each situation, but could include special support or shield systems to protect from cave-ins, water removal to control the level of accumulating water, or use of safety harness or lifeline.
- The competent person must perform a soil analysis. This helps choose the right employee-protection system.
- A trench / excavation can be in stable rock, Type A, Type B, Type C soil. Stable rock is generally considered the safest, followed in order by type A, type B, then type C soils.
- Clay can be type A,B, or C soil; it depends on how much water is in the clay.

Soil classification

Stable rock – natural solid material matter that can be excavated with vertical sides and remain intact while exposed.

Type "A" soil – cohesive soils with an unconfined compressive strength of 1.5 tons per square foot or greater. Examples of cohesive soils are clay, silt clay, sandy clay, clay loam, and in some cases silt clay loam and sandy clay loam. Cemented soils, such as the caliche and hardspan are also considered type A. however, no soil is type A if the soil is fissured or the soil is subjected to vibration from heavy traffic, pile driving, or other similar effects; the soil has been previously disturbed. Type A soil shall be sloped at a ratio of ¾ :1 (53 degrees).

Type "B" soil – cohesive soil with an unconfined compressive strength greater than 0.5 tons per square foot or granular cohesionless soil including angular gravel that is similar to crushed rock, silt, silt loam, sandy loam, and in some cases silt clay loam and sandy clay loam. Previously disturbed soils excepted those that would otherwise be classified as Type C soil. Soil that meets the unconfined compressive strength or cementation requirements for type A, but is fissured or subject to vibration. Type B soil shall be sloped at a ratio of 1:1 (45 degrees).

Type "C" soil – cohesive soil with an unconfined compressive strength of 0.5 tons per square foot or less, or granular soils including gravel, stone, and loamy sand or submerged soil; soil form which water is freely seeping; submerged rock that is not stable. Type C soil shall be sloped at a ratio 1 ½ :1 (34 degrees) and may not be benched.

Work Procedures

The following procedures will be followed while digging trenches / excavations:

- Sloping, benching, or shoring will be performed to help prevent cave-ins
- Keep the spoil pile 2ft or more away from the edge of the trench / excavation
- Prevent materials, rocks, or soil from falling into the trench / excavation; use barriers if needed.
- If atmospheric hazards have potential to exist, monitor the air as often as needed to make sure it is safe.

Protective systems

There are three methods of excavation protection that may be used:

Sloping or benching
Protective shields
Shoring

If a trench / excavation caves-in trapping employee(s):

- Get out of the trench; Call 911
- Help the employees from outside the trench / excavation
- Never go into a trench / excavation that is caving-in or has unsafe atmosphere – even to rescue a co-worker. The would be rescuer could be killed.

TRAINING AND COMPETENCY

Training

- a competent person shall be present during all trenching / excavating work activities.
- All competent persons shall be trained in the NUCA competent person (or equivalent) program.
- A member of the safety department authorized to do such training or another authorized trainer shall conduct the training.
- All employees exposed to trenching / excavating work shall be trained on identification of hazards and procedures for working in and around trenches / excavations.
- Requirements of training shall be conducted prior to initial assignment, prior to a change in assigned duties, and if a new hazard has been created or special deviations have occurred.

SUPPORTING DOCUMETNS

ASSOCIATED DOCUMENTS AND REFERENCES

The following standard is relevant to this practice:

- OSHA – 1926.650 (SUBPART P EXCAVATIONS)

Hand and Portable Tools

PURPOSE

Baker Group is committed to providing a safe and healthy workplace. This program is to provide Baker Group employees with information on how they can recognize the hazards associated with the different types of tools and the safety precautions necessary to prevent those hazards.

SCOPE

This practice has been prepared for the Baker Group workforce and applies to work performed on Baker Group or customer premises. This practice may be superseded by equivalent or more stringent host employer, controlling contractor, or regulatory requirements.

ACRONYMS, DEFINITIONS AND LANGUAGE

LANGUAGE

Throughout Baker Group defined and recommended practices, the following words have specific meanings:
"Shall" is used when a provision is required.
"Should" is used when a provision is preferred.
"May" is used when alternatives are equally acceptable

REQURIEMENTS AND PROCEDURES

Conditions of Tools

- Keep tools in good working condition. Damaged, worn, or defective tools can cause injuries and shall not be used.
- It is imperative that the right tool is used for the job and that it be used in accordance with manufacturer recommendations.
- Never make repairs to tools or equipment unless authorized by your supervisor.
- Inspect electrical extension cords and other wiring to be certain they are properly insulated. Do not use tools with frayed or damaged cords.

Guarding

- When power operated tools are designed to accommodate guards, they shall be equipped with such guards when in use.
- One or more methods of machine guarding shall be provided to protect the operator and other employees in the machine area from hazards, such as those created by point of operation, ingoing nip points, rotating parts, flying chips, and sparks.
- Never remove machinery or equipment guards.
- Be sure that a power tool is off and motion stopped before setting the tool down.
- Disconnect tool from power source before changing drills, blades, or bits or attempting repair or adjustment. Never leave a running tool unattended.

Personal Protective Equipment

- Employees using hand and power tools, and exposed to the hazard of falling, flying, abrasive, and splashing objects, or exposed to harmful dusts, fumes, mists, vapors, or gases shall be provided with the specific personal protective equipment necessary to protect them from the hazard.

Hand Tools

- Baker Group shall not issue or permit the use of unsafe hand tools.
- Wrenches, including adjustable, pipe, end, and socket wrenches, shall not be used when jaws are sprung to the point that slippage occurs.
- Impact tools, such as drift pins, wedges, and chisels, shall be kept free of mushroomed heads.
- The wooden handles of tools shall be kept free of splinters or cracks and shall be kept tight in the tool.

Power-Operated Hand Tools

Electric Power-operated tools

- Electric power-operated tools shall either be of the approved double-insulated type or grounded.
- The use of electric cords for hoisting or lowering tools shall not be permitted.

Pneumatic power tools

- Pneumatic power tools shall be secured to the hose or whip by some positive means to prevent the tool from becoming accidentally disconnected.
- Safety clips or retainers shall be securely installed and maintained on pneumatic impact (percussion) tools to prevent attachments from being accidentally expelled.
- Do not use compressed air for cleaning purposes except when pressure is reduced to less than 30psi, and then only with effective chip guarding and proper personal protective equipment.
- The manufacturer's safe operating pressure for hoses, pipes, valves, filters, and other fittings shall not be exceeded.
- The use of hoses of hoisting or lowering tools shall not be permitted.

Fuel powered tools

- All fuel-powered tools shall be stopped while being refueled, serviced, or maintained.
- When fuel-powered tools are used in enclosed spaces, the applicable requirements for concentrations of toxic gases and use of personal protective equipment shall apply.

Hydraulic power tools

- The manufacturer's safe operating pressures for hoses, valves, pipes, filters, and other fittings shall not be exceeded.

Powder Actuated tools

- Only employees who have been trained in the operation of the particular tool in use shall be allowed to operate a powder actuated tool.
- The tool shall be tested each day before loading to see that safety devices are in proper working condition. The method of testing shall be in accordance with the manufacturer's recommended procedure.
- Tools shall not be loaded until just prior to the intended firing time. Neither loaded nor empty tools are to be pointed at any employee(s). hands shall be kept clear of the open barrel end. Loaded tools shall not be left unattended.
- Fasteners shall not be driven into very hard or brittle materials, including but not limited to, cast iron, glazed tile, surface-hardened steel, glass block, live rock, face brick, or hollow tile.
- Tools shall not be used in an explosive or flammable atmosphere.

Abrasive wheels and tools

- All abrasive wheels shall be closely inspected and ring-tested before mounting to ensure that they are free from cracks or defects.

- Grinding wheels shall fit freely on the spindle and shall not be forced on. The spindle nut shall be tightened only enough to hold the wheel in place.
- All employees using abrasive wheels shall be protective by a face shield.

SUPPORTING DOCUMENTS
ASSOCIATED DOCUMENTS AND REFERENCES

HOUSEKEEPING AND MATERIAL STORAGE SAFETY

PURPOSE

This policy describes the requirements for safe work practices for Baker Group employees that attention to general cleanliness, storage, and housekeeping can prevent numerous incidents. Good housekeeping efforts are a part of Baker Group's fire prevention and incident prevention plan.

SCOPE

This practice has been prepared for the Baker Group workforce and applies to work performed on Baker Group or customer premises. This practice may be superseded by equivalent or more stringent host employer, controlling contractor, or regulatory requirements.

ACRONYMS, DEFINITIONS AND LANGUAGE

LANGUAGE

Throughout Baker Group defined and recommended practices, the following words have specific meanings:
"Shall" is used when a provision is required.
"Should" is used when a provision is preferred.
"May" is used when alternatives are equally acceptable

RESPONSIBILITIES

All Baker Group employees share the responsibility for maintaining good housekeeping practices and following established housekeeping procedures. Baker Group's foremen and leaders will be responsible to monitor housekeeping as part of their facility and jobsite safety inspections procedures, note any hazards or areas of non-compliance, initiate clean-up procedures, and provide follow-up. Management has the additional responsibility to provide disciplinary action when necessary to reinforce compliance with this plan.

REQUIREMENTS AND PROCEDURES

The following general rules apply to prevent injuries and maintain a professional appearance.

- Employees are expected to clean up after themselves as a common courtesy to fellow employees. Good housekeeping will be recognized as an integral part of each job.
- Personal food items will not be stored in lockers or break rooms overnight.
- All refuse and waste materials will be placed in the recognized waste containers for disposal.
- Trash cans and dumpsters will be emptied on a regular basis.
- All aisles, emergency exits, fire extinguishers, etc., will be kept clear (a minimum of 3ft of either side) of material storage (temporary or permanent) at all times.
- Storage areas will be maintained orderly at all times. When supplies are received, the supplies will be move to the appropriate area and stored properly.
- Flammable materials will not be stored in lockers or brough on company property unless stored in designated flammable cabinets or designated areas. All fuel cans shall be OSHA-compliant, self-closing containers with flame arresters.
- Spills will be cleaned-up immediately and all waste disposed of properly.
- All waste receptacles will be lined with a plastic trach bag to avoid direct contact while handling.
- In office areas, keep file and desk drawers closed when not attend to avoid injuries. Open only one drawer at a time to prevent incidental tipping of file cabinets.

- At the end of the business day, turn off all office equipment and lights to save energy and prevent fires. All space heaters shall be plugged directly into an outlet (not into power strips) and unplugged at the end of the day to assure they have been turned off.
- Pipe stock shall be stored horizontally on racks and sorted by size.
- Metal stock shall be stored horizontally on racks and sorted by size.
- Sheet metal stock shall be stored in racks and sorted by type.
- All fittings, etc., shall be stored in bins on shelves and sorted by type and use.
- All general non-hazardous substance spills will be cleaned up immediately.
- All hazardous substances that will likely cause harm by inhalation, ingestion, skin absorption, or contact will be properly stored and maintained.
- PPE will be used when provided, and maintained wherever required.
- Rest rooms and washrooms will be kept in a clean and sanitary condition.
- All water sources not suitable for drinking shall be clearly identified as non-potable.
- Keep work areas neat and orderly and free of trip hazards, such as extension cords, air hosed, welding leads, loose banding, etc.
- Pick up your tools, scrap, and other items from the work area so that no one will slip or trip on them.
- Oily rags will be placed in a covered metal container and properly disposed or laundered.
- Keep debris from blocking access to ladders, electrical equipment, and other important areas in case of emergency.
- Never leave nails or spikes sticking up in boards or planks. Promptly remove them or bend them over when found.
- Never pick up sharp objects with your bare hands.

Material storage

Proper storage procedures are required for dry, raw materials, finished product flammables, and compressed gases to prevent fires, keep exits and aisles clear and avoid injuries and illnesses.

Materials and finished products storage are as follows:

- Materials will not be stored any closer than 18 inches to walls or sprinkler heads. A minimum of 3 ft side clearance will be maintained around doorways and emergency exits. Passageways and aisles will be properly marked and a minimum of 6ft in width. Materials, forklifts, pallet jacks, etc. will not be stored in aisles or passageways.
- Aisles and passageways will be kept clear of debris. All spills of materials will be immediately cleaned up by the person responsible.
- All platforms and racks will have maximum load capacity displayed. The weight of stored material will not exceed the rated load capacity.

Flammable Storage

- All flammables will be stored in OSHA-compliant flammable storage cabinets or stored outside (at least 50ft from any structure).
- Fuels, solvents, and other flammables (not stored in original shipping containers) will be stored in OSAH-compliant, self-closing containers with flame arresters. Flammables will not be stored in open containers (open parts bath, etc.).
- Flammable storage areas will be kept dry and well ventilated. No storage of combustible materials, open flames, or exposed electrical components is permitted in the flammable storage areas.
- Flammable or combustible materials will not be stored in electrical rooms. Electrical rooms will be kept clean and dry at all times.

COMPRESSED GAS CYLINDERS

PURPOSE

To set forth practice requirements and procedures to guide Baker Group's workforce engaged in activities which might require workers to work with compressed gas cylinders and to comply with applicable regulations.

SCOPE

This practice has been prepared for the Baker Group workforce and applies to work performed at Baker Group facilities (fabrication shops) or jobsites (customer premises). This practice may be superseded by equivalent or more stringent host employer, controlling contractor, or regulatory requirements.

ACRONYMS, DEFINITIONS AND LANGUAGE

Throughout Baker Group defined and recommended practices, the following words have specific meanings:

'Shall' is used when a provision is mandatory.
'Should' is used when a provision is preferred.
'May' is used when alternatives are equally acceptable

RESPONSIBILITIES

REQUIREMENTS AND PROCEDURES

Transporting, Moving, and Storing Compressed Gas Cylinders

All cylinders must be clearly labeled as to their contents. Cylinders should be inspected to ensure they are in a safe condition and free from defects.

Inspect cylinders valves to ensure they are free from oil, grease, dirt, and solvents. Make sure the correct regulator is on the compressed gas, based on the gas.

Valve protection caps shall be in place and secured. If a cylinder cap cannot be removed by hand, the cylinder shall be tagged "Do Not Use" and returned to the designated storage area for return to vendor.

When cylinders are hoisted, they shall be secured on a cradle, slingboard, or pallet. They shall not be hoisted or transported by means of magnets or choker slings.

Cylinders shall be moved by tilting and rolling them on their bottom edges. They shall not be intentionally dropped, struck, or permitted to strike each other violently.

When cylinders are transported by powered vehicles, they shall be secured in a vertical position.

Valve protection caps shall not be used for lifting cylinders. If caps are frozen or struck, they shall not be pried off. Instead use warm (not boiling) water.

Unless cylinders are firmly secured on a special carrier intended for this purpose, regulators shall be removed and valve protection caps put in place before cylinders are moved.

A suitable chain or other steadying device shall be used to keep cylinders from being knocked over while in use.

When work is finished, when cylinders are empty, or when cylinders are moved at any time, the cylinder valve shall be closed.

Compressed gas cylinders shall be secured in an upright position at all times except, if necessary, for short periods of time while cylinders are actually being hoisted or carried.

Oxygen cylinders in storage shall be separated from fuel-gas cylinders or combustible materials (especially oil or grease) a minimum distance of 20 feet or by a noncombustible barrier at least 5 feet high having a fire-resistance rating of at least one-half hour.

Inside of buildings, cylinders shall be stored in a well ventilated, dry location, at least 20 feet from highly combustible materials such as oil or excelsior. Cylinders should be stored in defined assigned places away from elevators, stairs, or gangways, or where they could be knocked over or damaged by unauthorized persons.

Full and empty cylinders should be stored in designated and labeled areas.

Only tools provided by the supplier should be used to open and close cylinder valves.

Any cylinders that are no longer needed should be marked as empty and returned to the vendor. If any cylinders are leaking, they should be moved to an isolated, well-ventilated area, away from ignition sources. Do not try to repair leaking cylinders, return them to the supplier. Soapy water can be used to detect leaks, if the leak is at the junction of the cylinder valve and the cylinder, do not try to repair it.

Placing Cylinders

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. When this is impractical, fire resistant shields shall be provided.

Cylinders shall be placed where they cannot become part of an electrical circuit. Electrodes shall not be struck against a cylinder to strike an arc.

Fuel gas cylinders shall be placed with valve end up whenever they are in use. They shall not be placed in a location where they would be subject to open flame, hot metal, or other sources of artificial heat.

Cylinders containing oxygen or acetylene or other fuel gas shall not be taken into confined spaces.

Treatment of Cylinders

Cylinders, whether full or empty, shall not be used as rollers or supports.

Never attempt to mix gases or refill in a cylinder.

Never use a damaged or defective cylinder.

Use of Fuel Gas

Before a regulator to a cylinder valve is connected, the valve shall be opened slightly and closed immediately (or “cracked”). The person cracking the valve shall stand out of the way of the outlet. The valve of a fuel gas cylinder shall not be cracked where the gas would reach welding work, sparks, flame or other sources of ignition.

The cylinder valve shall always be opened slowly to prevent damage to the regulator. For quick closing, valves on fuel gas cylinders shall not be opened more than 1 ½ turns. When a special wrench is required it shall be left in positions on the stem of the valve while the cylinder is in use so that the fuel gas flow can be shut off quickly in case of an emergency. In the case of manifolded or coupled cylinders, at least one such wrench shall always be available for immediate use. Nothing shall be placed on top of a fuel gas cylinder when in use, which may damage the safety device or interfere with the quick closing of the valve.

Fuel gas shall not be used from cylinders through torches or other devices that are equipped with shutoff valves without reducing the pressure through a suitable regulator attached to the cylinder valve or manifold.

Before a regulator is removed from a cylinder valve, the cylinder valve shall always be closed and the gas released from the regulator.

If, when the valve on a fuel gas cylinder is opened, there is found to be a leak around the valve stem, the valve shall be closed and the gland nut tightened. If this action does not stop the leak, the use of the cylinder shall be discontinued, and it shall be properly tagged and removed from the work area. In the event that fuel gas should leak from the cylinder valve, rather than from the valve stem and the gas cannot be shut off, the cylinder shall be properly tagged and removed from the work area. If a regulator attached to a cylinder valve will effectively stop a leak through the valve seat, the cylinder need not be removed from the work area.

If a leak should develop at a fuse plug or other safety device, the cylinder shall be removed from the work area.

Fuel Gas and Oxygen Manifolds

Fuel gas and oxygen manifolds shall bear the name of the substance they contain in letters at least 1-inch high which shall be either painted on the manifold or on a sign permanently attached to it.

Fuel gas and oxygen manifolds shall be placed in safe, well ventilated, and accessible locations.

Manifold hose connections shall be such that the hose cannot be interchanged between fuel gas and oxygen manifolds and supply header connections. Hose connections shall be kept free of grease and oil.

Manifold and header hose connections shall be capped when not in use.

Nothing shall be placed on top of a manifold when in use.

Hose

Fuel gas hose and oxygen hose shall be easily distinguishable from each other.

When parallel sections of oxygen and fuel gas hose are taped together, not more than 4 inches out of 12 inches shall be covered by tape.

All hose shall be inspected at the beginning of each working shift. Defective hose shall be removed from service.

Hose couplings shall be of the type that cannot be unlocked or disconnected by means of a straight pull without rotary motion.

Boxes used for the storage of gas hose shall be ventilated.

Hoses, cables, and other equipment shall be kept clear of passageways, ladders, and stairs.

Torches

Clogged torch tip openings shall be cleaned.

Torches in use shall be inspected at the beginning of each working shift for leaking shutoff valves, hose couplings, and tip connections. Defective torches shall not be used.

Regulators and Gauges
Oxygen and fuel gas pressure regulators, including their related gauges, shall be in proper working order while in use.

Oil and Grease Hazards
Oxygen cylinders and fitting shall be kept away from oil or grease. Cylinders, cylinder caps and valves, couplings, regulators, hose, and apparatus shall be kept free from oil or greasy substances and shall not be handled with oily hands or gloves. Oxygen shall not be directed at oily surfaces, greasy clothes, or within a fuel oil or other storage tank or vessel.

SUPPORTING DOCUMENTS
ASSOCIATED DOCUMENTS AND REFERENCES

SPILL PREVENTION RESPONSE PLAN

PURPOSE

To set forth procedures necessary to ensure adequate and efficient control, containment, and management of waste materials and the accidental release (spills) during work operations.

SCOPE

This practice has been prepared for the Baker Group workforce and applies to work performed at Baker Group facilities (fabrication shops) or jobsites (customer premises). This practice may be superseded by equivalent or more stringent host employer, controlling contractor, or regulatory requirements.

ACRONYMS, DEFINITIONS AND LANGUAGE

Throughout Baker Group defined and recommended practices, the following words have specific meanings:

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REQUIREMENTS AND PROCEDURES

Spill prevention

Ensure all hazardous substances are properly labeled. Store, dispense and/or use hazardous substances in a way that prevents release. Provided secondary containers when storing hazardous substances in bulk quantities. Maintain good housekeeping practices for all chemical materials at the facility. Chemical substances should be stored in proper containers to minimize the potential for a spill. Whenever possible, chemicals should be kept in closed containers and stored so they are not exposed to storm-water.

Spill Containment

The general spill response procedure is to stop the source of the spill, contain any spilled material, and clean up the spill timely to prevent accidental injury or other damage from occurring. The most likely spills to occur are small or incidental spills.

A proper spill kit(s) shall be on site and must contain the appropriate supplies for materials that may be spilled. Supplies must be easily accessible when required, and considerations must be made for both the type and quantity of materials.

Small spill will be contained by site personnel if they are able to do so without risking injury. Spill kits shall be located at every jobsite. Ensure spill cleanup materials are properly characterized before disposal.

Employees shall be instructed on the proper response procedures for spilled materials. The training should include materials available for use, proper waste disposal, and communication procedures.

Areas where chemicals may be used or stored must be maintained using good housekeeping best management practices. This includes, but is not limited to, clean and organized storage, labeling, and secondary containment where necessary.

Emergency procedures

Immediately call site security / fire department or 911 in the event of injury, fire or potential fire, spill of a hazardous substance that gives rise to an emergency situation, or release of a hazardous substance to the environment (i.e. ground, surface water, floor drains or storm water drains).

If a hazardous substance spill has been released to soil, surface water or drains notify the jobsite supervisor and contact Baker Group's safety director.

RECORD RETENTION

PURPOSE

The purpose of this section is to provide workers and their designated representatives a right of access to relevant exposure and medical records to fulfill responsibilities under the Occupational Safety and Health Act (OSHA). Access by workers and their representatives, is necessary to yield both direct and indirect improvements in the detection, treatment, and prevention of occupational disease.

SCOPE

This section applies to all worker exposure and medical records, and analyses thereof, made, or maintained in any manner, including an in-house or contractual basis. Baker Group shall assure that the preservation and access requirements of this section are complied with regardless of the manner in which records are made or maintained.

ACRONYMS, DEFINITION, AND LANGUAGE

LANGUAGE

Throughout Baker Group defined and recommended practices, the following words have specific meanings.
'Shall' is used when a provision is mandatory.
'Should' is used when a provision is preferred.
'May' is used when alternatives are equally acceptable.

REQUIREMENTS AND PROCEDURES

Notification

Upon initial employment workers will be briefed and at least annually thereafter, informed via a bulletin board or community location posting of the following:

- The existence, location, and availability of worker records for exposure to toxic substances or harmful physical agents.
- The person responsible for maintaining and providing access to the records. Contact your Resources Manager or Safety Representative to initiate this request.
- The worker right of access to those records.
- The entire section pertaining to records retention is available for worker review by contacting the Safety Representative, Human Resources, or delegate.

Record Keeping

The Human Resources Manager is responsible for maintaining and providing access to workers' occupational medical records. These records are kept separately from other worker records. All medical records will be retained following local, company and jurisdictional requirements.

The medical records of workers who have worked for less than (1) year for the employer need not be retained beyond the term of employment if they are provided to the worker upon the termination of employment.

Medical records are records concerning the health status of a worker which is made or maintained by a physician, nurse or other health care provide or technician.
Medical records consist of:

- Medical and employment questionnaires or histories (including job description and occupational exposures),

- The results of medical examinations (pre-employment, pre-assignment, periodic, or episodic) and laboratory tests (including chest and other X-ray examinations taken for the purposes of establishing a baseline or detecting occupational illness, and all biological monitoring not defined as an "employee exposure record"),
- Medical opinions, diagnoses, progress notes, and recommendations,
- First aid records,
- Descriptions of treatments and prescriptions,
- Employee medical complaints.

Worker exposure records shall be maintained for the duration of employment and for 30 years thereafter and should include the following:

- Environmental (workplace) monitoring including personal, area, grab, swipe (wipe over a designated area), etc. type samples.
- Biological monitoring—level of chemical in the blood, urine, hair, fingernails, etc.
- Safety data sheets or a chemical inventory or any other record which reveals where and when used and the identity (e.g., chemical, common, or trade name) of a toxic substance or harmful physical agent.

Upon written request from an approved requestor such as a local or federal jurisdiction Baker Group will remove all personal identifiers before releasing the medical/exposure records.

Access
Each worker or designated representative has the right to request access to his/her records. Baker Group shall assure that access is provided in a reasonable time, place, and manner. Baker Group will provide a copy of the medical records within fifteen (15) working days.

The worker may access his/her records by making a request to the **Human Resources Manager or Safety Representative or delegate**. Baker Group will release an worker's medical records only if the worker has given specific, written consent (see Attachment 6-1).

If Baker Group cannot reasonably provide access to the record within fifteen (15) working days, Baker Group shall within the fifteen (15) working days apprise the worker or designated representative requesting the record of the reason for the delay and the earliest date when the record can be made available.

- In the case of an original X-ray, the employer may restrict access to on-site examination or make other suitable arrangements for the temporary loan of the X-ray.
- Records or copies will be provided at no cost to the worker.

    - Whenever a record has been previously provided without cost to a worker or designated representative, the company may charge reasonable, non-discriminatory administrative costs (i.e., search and copying expenses but not including overhead expenses) for a request by the worker or designated representative for additional copies of the record.
    - No charge for an initial request for a copy of new information that has been added to a record which was previously provided.

- No charge for an initial request by a recognized or certified collective bargaining agent for a copy of a worker exposure record or an analysis using exposure or medical records.

Transfer of records
Whenever ceasing to do business, Baker Group shall transfer all records subject to this section to the successor employer. The successor employer shall receive and maintain these records.

Whenever ceasing to do business and there is no successor employer to receive and maintain the records subject to this standard, Baker Group shall notify affected workers of their rights of access to records at least three (3) months prior to the cessation of business.

SUPPORTING DOCUMENTS

ASSOCIATED DOCUMENTS AND REFERENCES

- 29 CFR 1910.1020

Fleet / Motor Vehicle

PURPOSE

Baker Group has created this policy to ensure all responsibilities are defined and Baker Group's commitment to the safe operation of transportation vehicles. This written Motor Vehicle Safety Program establishes guidelines to ensure that we hire capable drivers, only allow eligible drivers to drive a "covered motor vehicle," train and supervise drivers, and maintain vehicles properly. A "covered motor vehicle" is a motor vehicle that is owned, leased, or rented by Baker Group or is a driver-owned vehicle operated during work time. A driver may be assigned to use a company vehicle to visit clients, make deliveries, attend meetings, pick up supplies, or to do a variety of other tasks. When driving is part of the job, like every other task, it must be done safely adherence to this written program can improve traffic safety performance, minimize the risk of motor vehicle incidents, and help to keep our drivers safe and our costs as low as possible. Management leads, supports, and enforces this program; but driver input is essential for its success. Baker Group will comply with all Federal and State agency requirements.

PROCEDURES

Baker Group's Fleet Manager is our Motor Vehicle Safety Program Administrator. The Program Administrator is responsible for ensuring all jurisdictional regulatory compliance requirements are met. The Program Administrator coordinates the Motor Vehicle Operation Program elements for our company. This Program Manager is responsible for setting up and managing the program so that managers, supervisors, and drivers know what our company expects. The Fleet Manager will examine our existing policies and practices to ensure that they encourage and do not discourage reporting and participation in our program. In this way, early reporting of motor vehicle incidents and hazards and meaningful driver participation in the program are more likely to occur. For this program to be administratively effective, good judgment and correct choices must be made by the person in charge of their section or group of drivers and vehicles. Prior to the assignment of any vehicle to any driver or prior to allowing a driver to drive their own vehicle on company business or the continuation of driving any vehicle, Baker Group or driver owned vehicle, the following will be reviewed:

- A current valid state driver's license with no "Status Actions"; must be at least 21 years of age to drive a CMV or 18 years of age or older to drive a Fleet Vehicle. A current medical card is required, and a copy must be provided for recordkeeping in the driver qualification files. Drivers who hold a CDL or commercial learner's permit (CLP) must provide each new certificate to their state licensing agency and carry a copy for at least 15 days after issuance, until their state driving record is updated. Baker Group must also have a copy of the certificate in the file for up to 15 days. By the end of those 15 days, a new Motor Vehicle Report (MVR) must be placed in the employee's file as proof of medical certification. The medical certificate must be updated by an approved medical examiner at least once every 24 months, unless more frequently due to underlying conditions. The driver must carry the medical certificate or a copy of it on their person. Another copy must be provided to Baker Group to be retained in the driver's qualification file.
- A review of the driver's background and MVR (MVR 3 years back initially, then annual thereafter) will be done. Baker Group requires a preceding 3-year, state issued, driving record (MVR), for each driver-applicant operating a vehicle which is company owned, rented, or leased as well as any personal vehicle used on Company business. If the driver has an out-of-state license, they will be required to submit their MVR from that state for our review. The MVR will be reviewed by a responsible management official for determination of qualification of each driver. If the MVR indicates no violations, or the following minor

violations, the driver may be considered for qualification by Baker Group management. They are:

- conviction of one or more minor moving violations, as long as no more than 6 points have been assessed
- minor accident (no injuries) Note: If the driver/driver can remove the citation by going to traffic school, Baker Group will take this action into consideration for final qualification of the driver.

- If the driver's MVR indicates the following major violations, then the driver is NOT qualified to drive for Baker Group:

  - Operating a vehicle under the influence of a drug or alcohol
  - Implied Consent Refusal (refusal to take blood alcohol test and or urine analysis)
  - Committing homicide, manslaughter, or aggravated assault with a vehicle
  - Failing to stop if you are involved in a traffic accident
  - Reckless driving
  - Felony speeding
  - License Suspension or Revocation

- Notification by Baker Group insurance carrier that the driver is ineligible for auto insurance coverage will cause the driver to be ineligible to drive. The above listed violations should not be considered all inclusive, and these are not the only major violations that would disqualify the driver as a driver. Management reserves the right to make the final decision as to whether the driver will be qualified to drive.

Fleet Vehicle
Any motor vehicle a company owns or leases that is used in the normal operations of a company. Vehicles which are used in the operation of a company but are owned by company drivers are not fleet vehicles. Fleet vehicles include gasoline/diesel powered vehicles and alternative-fuel vehicles. Commercial driver's license (CDL) A license issued to an individual by a State or other jurisdiction of domicile, in accordance with the standards contained in this part, which authorizes the individual to operate a class of a commercial motor vehicle. All motor vehicles will be placed on a preventive maintenance and inspection program maintained per the manufacture's specifications. All maintenance reports will be retained for the duration of when the vehicle is in use. A pre and post trip inspection will be performed and documented by each driver. The driver will provide the documentation to the maintenance department as part of the recordkeeping requirements. During the pre and post trip inspections if any defects are identified the driver will alert their supervisor or maintenance department before the motor vehicle is placed back in service.

Commercial motor vehicle (CMV)
A motor vehicle or combination of motor vehicles used in commerce to transport passengers or property if the motor vehicle:

- Has a gross combination weight rating or gross combination weight of 26,001 pounds or more, whichever is greater (including) towed unit(s) with a gross vehicle weight rating or gross vehicle weight of more than 10,001 pounds, whichever is greater.

- Has a gross vehicle rating, gross combination weight rating, gross vehicle weight or gross combination weight of 10,001 lbs. or more.
- Is designed or used to transport more than 8 passengers for compensation or more than 15 passengers without compensation
- Is of any size and is used in the transportation of hazardous materials

Gross Combination Weight Rating (GCWR)
The value specified by the manufacturer as the loaded weight of a combination (articulated) vehicle. In the absence of a value specified by the manufacturer, GCWR will be determined by adding the GVWR of the power unit and the total weight of the towed unit and any load thereon.

Gross Vehicle Weight Rating (GVWR)
The value specified by the manufacturer as the loaded weight of a single vehicle. Out-of-service order (OOS) A declaration by an authorized enforcement officer of a Federal, State, Canadian, Mexican, or local jurisdiction that a driver, a commercial motor vehicle, or a motor carrier operation, is out-of-service pursuant to FMCSR 386.72, 392.5, 395.13, 396.9, or compatible laws, or the North American Uniform Out-of-Service Criteria.

Motor Vehicle
A vehicle, machine, tractor, trailer, or semitrailer propelled or drawn by mechanical power that is used on highways.

Commercial Driver Qualifications (CMV and CDL)
A person shall not drive a commercial motor vehicle unless he/she is qualified to drive a commercial motor vehicle. Baker Group shall not require or permit a person to drive a commercial motor vehicle unless that person is qualified to drive a commercial motor vehicle.

A person is qualified to drive a CMV:

- If at least 21 years old
- Can read and speak the English language sufficiently to converse with the public, to understand highway traffic signs and signals in the English language, to respond to official inquiries, and to make entries on reports and records
- Can, by reason of experience, training, or both, safely operate the type of commercial motor vehicle they drive
- Is physically qualified to drive a commercial motor vehicle in accordance with FMCSR's Physical Qualifications and Examinations
- Has a currently valid commercial motor vehicle driver's license issued only by one State or jurisdiction (for GVWs or GCVWs of 26,001+ lbs.)
- Has prepared and furnished Baker Group with the list of violations or the Certificate of Violations
- Is not disqualified to drive a commercial motor vehicle under FMCSR §391.15
- Has successfully completed a driver's road test and has been issued a certificate of driver's road test or has presented a driver's license or a certificate of road test which we may accept as equivalent to a road test under FMCSR §391.33

Final determination will be the responsibility of Baker Group Management with the advice of the Fleet Manager.

All commercial drivers must always be prepared for their driving of a Baker Group CMV. There are many items, mainly documentation and proofs. CMV/CDL drivers will need:

- Certificate of Registration
- Hours of service records (logbook)
- Registration papers (cab cards, permits, etc.)
- Proof of insurance
- Driver's license documents and any related certificates or endorsements, if applicable
- Special permits for oversize and overweight loads, if required
- Hazardous materials shipping papers and placards, if required
- Fuel tax permits (IFTA)
- Bills/Invoices, etc. showing content and origin of agricultural products, if required
- Evidence of financial responsibility

Only pre-qualified and authorized drivers may operate company owned, rented, leased or their personal vehicle, used for company business.

Mobile Phone Use and Texting

There shall be no mobile phone usage by any CMV/CDL drivers while operating a company vehicle unless that vehicle or the driver's phone is equipped with a "hands-free" operating system. The commercial driver should pull over at a safe location and then return the phone call if necessary. There shall be NO TEXTING while driving a vehicle (Fleet or CMV); the driver shall read or create texts only when stopped and parked in a safe location for them and the vehicle.

Two-way radios are not restricted by the DOT banning of mobile phones, push to talk communications allow for a safer communication.

Driving Safety

While it's important to understand Baker Group vehicle safety program, as a driver, you must put safe driving techniques into practice each time you get behind the wheel. The following safe driving strategies are under the driver's control:

- Make sure the vehicle is safe to operate
- Bring supplies you may need in case of an emergency
- Wear your seat belt
- Drive defensively, not aggressively
- Pay attention to your driving and avoid distractions
- Only drive when you're alert and fully awake
- Never drive under the influence of alcohol, medications, or illegal drugs

Note: Seat belts are the single most effective means of reducing deaths and serious injuries in traffic crashes.

Vehicle Inspections

Safe driving starts before you turn the ignition key. Always inspect the vehicle before and after your trip. Make sure:

- The vehicle does not have any visible damage that affects its safe operation
- The tires are properly inflated (use the vehicle manufacturer's recommendations that are typically noted on a sticker inside the door, glove box, or trunk - the pressures stamped on the tire are not specific to the vehicle). Check the pressure when the tires are cold
- Tires have sufficient tread depth (tread depth should be at least 1/16 inch)
- The vehicle's fluid levels are correct (oil, brake, transmission, battery, and wiper fluids)
- Belts and hoses are free of blisters, cracks, and cuts
- The vehicle has plenty of fuel
- The windshield wipers are in good condition and are functional
- You are familiar with the location and operation of all the vehicle's controls; and the seat, steering wheel, and mirrors are properly adjusted
- Headlights, brake lights, turn signals, emergency flashers, and interior lights are working
- The seat belt is properly adjusted, and it's in good condition
- The vehicle is equipped with an emergency kit
- Loose objects are secured so they won't shift during a sudden stop or turn

Plan for Emergencies

In case of a breakdown or accident, your first actions should be to move the vehicle to a safe area, remain in the vehicle (if there is no risk of fire or other danger), and call for help. Some basic provisions to include in an emergency supply kit can include:

- A phone and a list of emergency phone numbers
- First aid supplies
- Roadside warning triangles or flares (follow instructions for their safe use)
- A fire extinguisher
- Water and food
- Clothing (raincoat; warm clothing, hat, mittens/gloves; comfortable boots/shoes).
- Basic car maintenance tools (a flashlight with fresh batteries; battery jumper cables; a jack, lug nut wrench, and spare tire; water for the radiator; oil; windshield wiper fluid; rags; gloves; etc.)

Be Defensive

It's best to always practice defensive driving techniques. Continually check your mirrors, leave enough following distance, and keep a cushion of space around the vehicle in case you need to quickly change lanes or go onto the shoulder. Aggressive driving acts include:

- Speeding.
- Tailgating.
- Failing to signal lane changes.
- Running red lights or stop signs.
- Passing on the right.

Aside from being aggressive, taking these actions can result in getting a ticket. The best advice is to share the road - allow other drivers to merge as needed. Safely move out of an aggressive driver's way; don't become part of a conflict.

Stay Focused and Alert
Driving is no time to multi-task. Stay focused on the road. Drivers can be distracted by a variety of things:

- Conversations with passengers.
- Eating, drinking, or grooming.
- Tuning the radio or selecting a CD to play.
- Reading maps or directions.
- Using electronic navigation systems.
- Using a mobile phone.
- Get a full night of rest before driving.
- Stop and get out of the car to stretch and walk about every two hours.
- Set a realistic goal of how many miles you can safely drive each day.
- Avoid taking medications that cause drowsiness.

Hours of Service
The hours of service (HOS) rule refers to the maximum amount of time drivers are permitted to be on duty including driving time, and specifies number and length of rest periods, to help ensure that drivers stay awake and alert. Baker Group will comply with HOS regulations found in 49 CFR 395.

Hazardous Materials Shipping
All drivers transporting hazardous will have been properly trained. Drivers are responsible for ensuring that the applicable markings/placards that are required are placed on the CMV based on jurisdictional requirements. Drivers will ensure that the proper shipping papers or manifests are properly prepared, stored and retained for the required times based on jurisdictional and company requirements.

What to do in Case of an Accident
Stop at once! Check for personal injuries and send for an ambulance, if needed. Do not leave the scene but ask for the assistance of bystanders.

- If fire or smoke is present evacuate vehicle occupants to a safe location. If stalled on a railroad track, evacuate occupants to a safe location away and at a right angle from the tracks.
- If fire, smoke, or spilled fuel is present send for the fire department. Do not leave the scene; ask a bystander to call the fire department. If possible, use a spill kit to absorb the spill.

Protect the scene. Set emergency warning devices to prevent further injury or damage. Secure your vehicle and its contents from theft, if possible.
Secure assistance of the police whenever possible. Record names and badge numbers. Do not leave without law enforcement presence on scene.
Record names, addresses, and phone numbers of all witnesses injured and driver(s) and their passengers, record vehicle license numbers. Take complete pictures with mobile phone or camera.
Do not argue! Make no statement except to the proper authorities and to Management. Sign only official police reports. Do not make statements regarding the operating condition of your vehicle and do not admit fault.
Report the incident to your supervisor/safety manager IMMEDIATELY after first aid has been given, authorities have been notified, the scene has been protected and you are able to do so.

Complete the incident report at the scene (or with your Supervisor ASAP) and as thoroughly as possible. Make sure the Safety Manager gets copies of all incident paperwork and related information within 24 hours.
If you strike an unattended vehicle and cannot locate the owner, leave a note with your name and The Company's address and phone number, get the vehicle description, VIN number and license plate number. If possible, take a picture with your mobile phone or camera of the damage.
A motor vehicle incident is a negative occurrence that involves a "covered" motor vehicle and that caused or could have caused injury, illness, or property damage.
All motor vehicle incidents will be investigated to determine their causes and whether the incidents were preventable. Understanding the root causes of incidents and why they are happening, regardless of fault, forms the basis for eliminating them in the future.
If any of the following traffic violations occur, whether in the driver's personal vehicle (on or off company business) or while operating an owned, rented, or leased vehicle, suspension of driving or operating any vehicle will be immediate:

- Operating a vehicle under the influence of a drug or alcohol
- Implied Consent Refusal (refusal to take blood alcohol test and or urine analysis)
- Committing homicide, manslaughter, or aggravated assault with a vehicle
- Failing to stop if you are involved in a traffic accident
- Reckless driving
- Felony speeding
- License Suspension or Revocation
- Cancellation of the driver's auto insurance by the driver's insurance carrier.

The above listed violations should not be considered all inclusive, and these are not the only major violations that would suspend the driver as a driver. Management reserves the right to make the final decision. Baker Group follows 49 CFR Subpart C 383.33 for CMV drivers. If the driver is found to not have reported to Baker Group any traffic violation, suspension, or revocation of their license, by reviewing their MVR on an annual basis or as often as deemed necessary, the driver will be subjected to disciplinary action up to and including termination. It is the overall responsibility of all drivers to maintain proper and acceptable driving records and all licenses required for their position.

Drugs and Alcohol
In accordance with our Drugs and Alcohol Policy driving a company owned, rented, leased or personal vehicle on company business, while under the influence of drugs or alcohol shall result in immediate termination.

Training
Under no circumstances may a driver operate a covered motor vehicle until they have successfully completed this company's initial training on motor vehicle safety. Training can include reading material, watching a presentation, and driving with a supervisor as a ride-a-long. The supervisor of that individual is responsible for conducting training if they assign a driver to driving duties.
Baker Group training program includes the topics of driving that the driver will have to deal with. Through training we ensure that motor vehicle drivers are knowledgeable in practices such as impaired, fatigued, aggressive, distracted, and defensive driving; seat belt use; vehicle inspection; security and motor vehicle incident procedures; cargo securement; handling hazardous materials and spills; and safety features and emergency equipment.
Driver training must include the following:

- Pre-trip safety inspection

- Use of vehicle controls and equipment, including operation of emergency equipment
- Operation of vehicle, including turning, backing, braking, parking, handling, and vehicle characteristics including those that affect vehicle stability, such as effects of braking and curves, effects of speed on vehicle control, dangers associated with maneuvering through curves, dangers associated with weather or road conditions that a driver may experience (e.g., blizzards, mountainous terrain, high winds), and high center of gravity
- Procedures for maneuvering tunnels, bridges, and railroad crossings
- Requirements pertaining to attendance of vehicles, parking, smoking, routing, and incident reporting
- Loading and unloading of materials, including:
    - Compatibility and segregation of cargo in a mixed load
    - Package handling methods
    - Load securement
- Defensive driving including:
    - proper attitude
    - visual habits
    - proper decision making
    - road rage
    - distracted driving
- Fatigue management
- Hazardous Materials in compliance with jurisdictional requirements

After a driver has completed the training program, management will determine whether the driver can safely operate a motor vehicle. If the driver passes, management places a training record in the driver's personnel file or driver qualification file.

Evaluation

The Fleet Manager evaluates each trained driver to verify that the driver has retained and uses the knowledge and skills needed to operate safely. If the evaluation shows that the driver is lacking the appropriate skills and knowledge, the driver is retrained.

The Fleet Manager also reviews motor vehicle records periodically to ensure that drivers maintain a good driving record. The results of each check are made known to the appropriate departments.

A driver may lose their privilege to operate a company vehicle for work or operate a company-owned-leased-rented vehicle for personal use, if after an incident(s), accident(s), or after a violation(s) it was discovered to be the driver's fault and preventable; the Fleet Manager may recommend the driver receive additional training if warranted.

In addition to the safety issues surrounding the driving of a commercial motor vehicle, there are other safety issues that can affect a driver. Examples of these are back strain and lifting concerns; slip- trip-falls; and personal safety in parking lots and other places.

Training and policy documents have been developed to address some of these driver safety topics. It is inherent that problems may occasionally arise. By having our program thoroughly evaluated, periodically and as necessary, and promptly taking action to correct any deficiencies in our program, we can eliminate problems effectively. Note: The occurrence of a motor vehicle incident does not in itself mean that the program is ineffective.

Disciplinary Actions

Baker Group's progressive driver discipline policy and procedures are designed to provide a structured corrective action process to improve and prevent a recurrence of undesirable driver behavior and performance issues.

Outlined below are the potential steps of our progressive discipline policy and procedures. Baker Group reserves the right to combine or skip steps depending on the facts of each situation and the nature of the offense. Some of the factors that will be considered are whether the offense is repeated despite coaching, counseling, or training; the drivers work record; and the impact the conduct and performance issues have on the company, driver, or public.

Drivers who receive three unsafe driving-related complaints may be subject to mandatory training and/or disciplinary action up to and including a recommendation for termination.

- First validated complaint—Supervisor will discuss complaint with driver and give a verbal warning. Driver may be required to complete a mandatory driver training provided by Risk Management Services or his or her assigned department.
- Second validated complaint—Supervisor will discuss complaint with driver and provide driver with a written warning (summary of conference). Driver will need to complete mandatory driver training provided by their supervisor.
- Third validated complaint—Driver will need to complete mandatory driver training provided by their supervisor. Driver may receive additional disciplinary action up to and including a recommendation for termination.

At no time will aggressive driving be tolerated by any driver who is driving a company vehicle. If it is determined that a driver is exhibiting unsafe driving behavior that includes, but is not limited to, rude gestures, verbal insults, deliberately driving in an unsafe or threatening manner, or making threats, they will be removed from driving status and may receive additional disciplinary action up to and including a recommendation for termination.

Drivers are subject to disciplinary actions for being involved in three preventable vehicle accidents within a five-year period. (After five years, one accident will be removed.)

Disciplinary actions are as follows:

- First incident—Driver will receive a written warning from their supervisor, must attend defensive driving class and any retraining course required by their supervisor, and may receive additional disciplinary action up to and including a recommendation for termination.
- Second incident—Driver will be placed on an intervention plan, must attend defensive driving class and any retraining course required by their supervisor, and may receive additional disciplinary action up to and including a recommendation for termination.
- Third incident—Driver will be removed from driving status and may receive additional disciplinary action up to and including a recommendation for termination.

All drivers have a general obligation to work and drive safely.

Baker Group Health and Safety Guidelines Appendix

Bomb Threat Checklist

BOMB THREAT CHECKLIST

Your Name:_____

Time:_____

Date:_____

Caller's Identity: ☐ Male ☐Female

Approximate Age: Years:_____

Origin of Call: ☐ Local ☐Long Distance ☐Phone Booth ☐Internal

CALLERS VOICE IS

Slow	Fast	Loud	Foreign	Calm
High Pitch	Distinct	Raspy	Stutter	Foul
Drunk	Slurred	Deliberate	Deep	Distorted
Angry	Nasal	Irrational	Laughing	Emotional

BACKGROUND NOISE

Office	Factory	Animals	Traffic	Music
Airplanes	Party	Quiet	Train	Other Voices

BOMB FACTS

KEEP CALLER TALKING. If caller seems agreeable to further conversation, ask questions like:

1. When is the bomb going to explode?

What hour:_____ Time Remaining:_____

2. Where is the bomb?

Building:_____ Area:_____

3. What kind of bomb is it? What does it look like? Do you know who placed the bomb?

4. Where are you now?

5. What is your name and address?

Did the caller appear familiar with the plant or building by description of the bomb location?

Write out the message in its entirety and any other comments on reverse side.

Call the following people immediately after the bomb threat call

EMERGENCY: 911

TRACY HAUS: 299.4024 or 208.3072

KATHY LADD: 299.4004 or 208-

EVACUATE THE BUILDING

SDS Binderworks (SDS access)

SDS BINDERWORKS®

Scan to view Safety Data Sheets

* Baker Group All

Baker Group

If no Internet is available please contact Baker Group Safety Team 515-262-4000

Contact: _____

SDS BINDERWORKS
3066 104th Street | Urbandale, IA 50322 | **Phone** 515.334-2616 | **Fax** 515.334-2620 | www.sdsbinderworks.com

SDS SAFETY DATA SHEETS PROVIDED BY:

SDS BINDERWORKS

Safety Data Sheets

Baker Group updates and stores information for hazardous chemicals, referred to industry wide as “SDS Sheets”.
This information can be found at https://www.sdsbinderworks.com/

Log In: bakergroup
Password: b4224g

For Other Contractors

An account will be provided for SDS Binderworks for General Contractors and or Sub Contractors.
We will need an email address to set up your own account. Please email haust@thebakergroup.com for account information

SDS BINDERWORKS®

Confined Space

CHECKLIST FOR SAFE ENTRY – CONFINED SPACE

Use the following checklist to evaluate the confined space.

*DO **NOT** ENTER A CONFINED SPACE UNTIL YOU HAVE CONSIDERED EVERY QUESTION AND HAVE DETERMINED THE SPACE TO BE SAFE.*

YES	NO	
_____	_____	Is entry necessary?
		TESTING
_____	_____	Are the instruments used in atmospheric testing properly calibrated?
_____	_____	Was the atmosphere in the confined space tested? Was Oxygen at least 19.5% - not more than 21%?
_____	_____	Were toxic, flammable, or oxygen-displacing gases/vapors present?
		- Hydrogen Sulfide
		- Carbon Monoxide
		- Methane
		- Carbon Dioxide
		- Other (list) _____
_____	_____	Will the atmosphere in the space be monitored while work is going on?
_____	_____	Continuously?
_____	_____	Periodically? (If yes, give interval:_____)

REMEMBER: **ATMOSPHERIC CHANGES OCCUR DUE TO THE WORK PROCEDURE OR PRODUCT STORED. THE ATMOSPHERE MAY BE SAFE WHEN YOU ENTER, BUT CAN CHANGE VERY QUICKLY.**

YES	NO	
		CLEANING
_____	_____	Has the space been cleaned before entry is made?
_____	_____	Was the space steamed?
_____	_____	If so, was it allowed to cool?
		VENTILATION
_____	_____	Has the space been ventilated before entry?
_____	_____	Will ventilation be continued during entry?
_____	_____	Is the air intake for the ventilation system located in an area that is free of combustible dusts and vapors and toxic substances?
_____	_____	If atmosphere was found unacceptable and then ventilated, was it re-tested before entry?
		ISOLATION
_____	_____	Has the space been isolated from other systems?
_____	_____	Has electrical equipment been locked out?
_____	_____	Have disconnects been used where possible?
_____	_____	Has mechanical equipment been blocked, chocked, and disengaged where necessary?
_____	_____	Have lines under pressure been blanked and bled?

YES NO

CLOTHING/EQUIPMENT

_____ _____ Is special clothing required (boots, chemical suits, glasses, etc.)?

(If so, specify)_____)

_____ _____ Is special equipment required (e.g., rescue equipment, communications equipment, etc.)?

(If so, specify)_____)

_____ _____ Are special tools required (e.g., sparkproof)?

(If so, specify)_____)

RESPIRATORY PROTECTION

_____ _____ Are MSHA/NIOSH-approved respirators of the type required available at the jobsite?

_____ _____ Is respiratory protection required (e.g., air-purifying, supplied air, self-contained breathing apparatus, etc.)?

(If so, specify)_____)

_____ _____ Can you get through the opening with a respirator on? (If you don't know, find out before you try to enter.)

TRAINING

_____ _____ Have you been trained in proper use of a respirator?

_____ _____ Have you received first aid/CPR training?

_____ _____ Have you been trained in confined space entry and do you know what to look for?

YES	NO	
		STANDBY/RESCUE
_____	_____	Will there be a standby person on the outside in constant visual or auditory communication with the person on the inside?
_____	_____	Will the standby person be able to see and/or hear the person inside at all times?
_____	_____	Has the standby person(s) been trained in rescue procedures? Will safety lines and harness be required to remove a person?
_____	_____	Are company rescue procedures available in the event of an emergency?
_____	_____	Are you familiar with the emergency rescue procedures?
_____	_____	Do you know who to notify and how in the event of an emergency?
		PERMIT
		(The permit is an authorization in writing that states that the space has been tested by a qualified person, that the space is safe for entry as well as what precautions, equipment, etc. are required; and what work is to be done.)
_____	_____	Has a confined space entry permit been issued?
_____	_____	Does the permit include a list of emergency telephone numbers?

CONFINED SPACE ENTRY PERMIT

LOCATION AND DESCRIPTION OF CONFINED SPACE _____ **DATE & TIME ISSUED:** _____

_____ **DATE & TIME EXPIRED:** _____

SUPERVISOR IN CHARGE _____

PURPOSE OF ENTRY _____

RESCUE PROCEDURES _____

COMMUNICATION PROCEDURES _____

MATERIALS TO BE TAKEN IN CONFINED SPACE _____

_____

ARE THE FOLLOWING COMPLETE?	Y/N/NA	ARE THE FOLLOWING COMPLETE?	Y/N/NA
LOCKOUT ENERGY SOURCES		FULL BODY SAFETY HARNESS	
VALVES CLOSED / BLEEDS OPEN / BLANKED / CAPPED		NON-ENTRY RESCUE EQUIPMENT	
PURGE-FLUSH & VENT		PROTECTIVE CLOTHING	
VENTILATION		RESPIRATORS	
AREA SECURED		FIRE EXTINGUISHER	
BREATHING APPARATUS		EXPLOSIVE PROOF LIGHTING	
RESCUE RESUSCITATOR-INHALATOR		HOT WORK PERMIT	
STANDBY SAFETY PERSONNEL		ALL REQUIRED BAKER GROUP PERMITS	

TESTS TO BE TAKEN	PERMISSIBLE EXPOSURE LIMITS (PEL)	PERIODIC MONITORING RESULTS (CONT ON SEPARATE PAGE)					
		READING	TIME	READING	TIME	READING	TIME
OXYGEN	19.5 - 23.5%						
LOWER EXPLOSIVE LIMIT (LEL)	UNDER 10%						
CARBON MONOXIDE	35 PPM**						
HYDROGEN SULFIDE	10 PPM** / 4 PPM*						
OTHER							

**** SHORT TERM EXPOSURE LIMIT - EMPLOYEE CAN WORK IN AREA UP TO 15 MINUTES***

***** 8-HOUR TIME-WEIGHTED AVG - EMPLOYEE CAN WORK IN AREA 8 HOURS (LONGER WITH RESPIRATORY PPE)***

APPROVALS:

_____ _____

SAFETY DEPT **HOST EMPLOYER**

ENTRY SUPERVISOR: _____ **TESTS CONDUCTED BY:** _____

ENTRANTS: _____ **ENTRANTS ATTENDANT:** _____

_____

_____

THIS PERMIT WAS CANCELLED ON: _____ **ENTRY SUPERVISOR:** _____

DATE & TIME **SIGNATURE**

PERIODIC MONITORING RESULTS CONT....

TEST	PEL:	READING	TIME	READING	TIME	READING	TIME
OXYGEN	19.5 - 23.5%						
LOWER EXPLOSIVE LIMIT (LEL)	UNDER 10%						
CARBON MONOXIDE	35 PPM**						
HYDROGEN SULFIDE	10 PPM** / 4 PPM*						
OTHER							

TEST	PEL:	READING	TIME	READING	TIME	READING	TIME
OXYGEN	19.5 - 23.5%						
LOWER EXPLOSIVE LIMIT (LEL)	UNDER 10%						
CARBON MONOXIDE	35 PPM**						
HYDROGEN SULFIDE	10 PPM** / 4 PPM*						
OTHER							

TEST	PEL:	READING	TIME	READING	TIME	READING	TIME
OXYGEN	19.5 - 23.5%						
LOWER EXPLOSIVE LIMIT (LEL)	UNDER 10%						
CARBON MONOXIDE	35 PPM**						
HYDROGEN SULFIDE	10 PPM** / 4 PPM*						
OTHER							

TEST	PEL:	READING	TIME	READING	TIME	READING	TIME
OXYGEN	19.5 - 23.5%						
LOWER EXPLOSIVE LIMIT (LEL)	UNDER 10%						
CARBON MONOXIDE	35 PPM**						
HYDROGEN SULFIDE	10 PPM** / 4 PPM*						
OTHER							

MONITORING IS TO BE DONE PRIOR TO ENTY AND CONTINUOUSLY THROUGHOUT THE OPERATION.

EACH INDIVIDUAL ENTERING THE CONFINED SPACE SHALL WEAR A MONITOR.

RECORD EACH "PRIOR TO ENTRY" READING IN THE TABLE ABOVE.

CONFINED SPACE ENTRANT ENTRY / EXIT LOG

Baker GROUP

TIME START: ____________ FINISH: ____________ ATTENDANT: ____________

TIME START: ____________ FINISH: ____________ ATTENDANT: ____________

DATE:

ENTRANT'S NAME (PRINT)	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT

PERMIT-REQUIRED CONFINED SPACE RECLASSIFICATION FORM

Use this form to temporarily reclassify a permit-required confined space to a non-permit confined space, which is only valid for the duration of work being performed and for no more than 8 hours. The space cannot contain any actual or potential atmospheric hazards, and all hazards within the space must be eliminated without entry into the space. An attendant is required outside the space, and must maintain communication with the entrant(s) and have a means to summon rescue services (e.g., 911). Review the confined space assessment to evaluate the space, and review the work to be performed within the space.

General

Space to be Entered:		Date **&** Time Issued:	
Location of Space:		Date **&** Time of Expiration:	
Purpose of Entry:		Department **or** Contractor:	
ENTRANT(S):			
ATTENDANT(S):			

Requirements

Hazards	Yes	No	If ***Yes***, describe how the hazard was eliminated without entry into the space.
Does the space contain or have the potential to contain a hazardous atmosphere?			If Yes, reclassification is not permitted. *Note:* Control of atmospheric hazards through forced-air ventilation does not constitute elimination of the hazards.
Does the space contain biological or chemical hazards?			
Does the space contain electrical hazards?			
Does the space contain engulfment hazards?			
Does the space contain mechanical hazards?			
Does the space contain entrapment hazards?			
Does the space contain extreme temperatures?			
Does the space contain any other *serious* hazards? (e.g., steam)			
Will the work being done inside or near the space introduce new hazards into the space? (e.g., welding, chemicals, painting fumes)			

Atmospheric Testing

Atmospheric Gases *(test in this order)*	**Permissible Limits** *(must be within limits)*	Pre-Entry Time	Time During Entry - Record Readings Every 2 Hours (8-hour maximum)					
		AM / PM	AM / PM	AM / PM	AM / PM	AM / PM	AM / PM	AM / PM
Oxygen (O_2)	19.5% to 23.5%	%	%	%	%	%	%	%
Lower Explosive Limit (LEL)	Under 10%	%	%	%	%	%	%	%
Carbon Monoxide (CO)	Under 35 ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Hydrogen Sulfide (H_2S)	Under 10 ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Other: (specify)	(specify)							
	Tester's Initials:							

Monitoring Equipment Make and Model	Serial Number	Calibration Date	Bump test passed prior to use? (required)	**Yes**

Certification and Authorization

By signing below, I certify that the space does not contain or have the potential to contain a hazardous atmosphere, all hazards within the space have been eliminated without entry, and no hazards will be introduced into or created within the space during the entry. I certify that all actions and conditions necessary for safe entry have been performed to temporarily reclassify the permit-required confined space to a non-permit confined space.

Entry Supervisor:	(print):	(sign):	(title):

Cancellation

If hazards arise within a permit-required confined space that has been declassified to a non-permit confined space, the space must be evacuated immediately. The space must be reevaluated to determine whether it must be reclassified as a permit-required confined space. Entry will be terminated and this form will be cancelled when the entry operations covered by this form have been completed, or when a condition that is not allowed under this form arises in or near the space.

Form must cancelled by the Entry Supervisor and kept on file by departments for 3 years.

Form Cancelled by:		Date **&** Time:	
Reason:	☐ Work Complete ☐ Conditions Violate Form ☐ New Hazards ☐ Other (Specify)		

Arc Flash energized work permit

ENERGIZED ELECTRICAL WORK PERMIT AND JOB HAZARD ASSESMENT

JOB NAME_____ JOB NUMBER _____

NAME OF COMPETENT PERSON REQUESTING PERMIT_____

WORK SCHEDULED: Date:_____ Hours to complete job:_____

Name of Equipment: _____ Description: _____
Location:_____ _____
Fed From_____ _____
Drawing Number:_____ _____
_____
_____

WORK TO BE PERFORMED (outline method):

JUSTIFICATION (Reason for equipment to remain energized)

SPECIAL INSTRUCTIONS:

ELECTRICAL ENERGY SOURCE FOR THIS PERMIT

Check all that apply:

- ☐ 120 volts
- ☐ 208 volts
- ☐ 240 volts
- ☐ 277 Volts
- ☐ 480 Volts
- ☐ Others (describe):_____

ARC FLASH RISK ASSESMENT (130.4)

Alternating-Current Systems	Limited Approach Boundary	
Nominal system Voltage Range, Phase to Phase	Exposed Fixed Circuit Part	Restricted Approach Boundary[b]; Includes Inadvertent Movement Adder
Less than 50 V ☐	Not Specified ☐	Not Specified ☐
50 V - 150 V[d] ☐	1.0 m (3 ft. 6 in.) ☐	Avoid contact ☐
151 V - 750 V ☐	1.0 m (3 ft. 6 in.) ☐	0.3 m (1 ft. 0 in.) ☐
751 V – 15 kV ☐	1.5 m (5 ft. 0 in.) ☐	0.7 m (2 ft. 2 in.) ☐
15.1 kV – 36 kV ☐	1.8 m (6 ft. 0 in.) ☐	0.8 m (2 ft. 7in.) ☐
For Voltages higher that 36 kV refer to **Table 130.4 (D)(a) in (Section 4)**		
Note: Multiply single phase voltages by 1.73 to obtain correct voltage level to be used. If any conductor's moveable, limited approach distance is 10 feet.		

Direct Current Systems	Limited Approach Boundary	
Nominal Potential Difference	Exposed Fixed Circuit Part	Restricted Approach Boundary[b]; Includes Inadvertent Movement Adder
Less than 100 V ☐	Not specified ☐	Not specified ☐
100 V–300 V ☐	1.0 m (3 ft. 6 in.) ☐	Avoid contact ☐
301 V–1 kV ☐	1.0 m (3 ft. 6 in.) ☐	0.3 m (1 ft. 0 in.) ☐
For Voltages higher that 1 kV refer to **Table 130.4 (D)(b) in (Section 4)**		
Note: If any conductors moveable, limited approach distance is 10 feet		

ARC FLASH RISK ASSESSMENT/ ARC FLASH PPE

Arc Flash Boundary has been established and labeled on the equipment
Arc Flash Boundary is: _____

Arc Flash PPE has been established and label on the equipment
Cal/cm²: _____

OR

Arc Flash Boundary was determined using Table 130.7 (C)(15)(a) for Alternating Current Systems and Table 130.7 (C)(15)(b) for Direct Current Systems
Arc Flash Boundary is: _____

Refer to Table 130.7(C)(15)(a) for Alternating Current Systems and Table 130.7 (C)(15)(b) for Direct Current Systems to determine the Arc Flash PPE Categories
Cal/cm²: _____

To be filled out by other qualified persons if required for this task

Qualified Person	**Qualified Person**	**Qualified Person**
(Performing work): ☐	(Performing work): ☐	(Performing work): ☐
Safety Watch ☐	Safety Watch ☐	Safety Watch ☐
Reviewed Hazard Analysis	Reviewed Hazard Analysis	Reviewed Hazard Analysis
Initials: _____	Initials: _____	Initials: _____
☐ Completed job briefing	☐ Completed job briefing	☐ Completed job briefing
☐ Agree to requirements	☐ Agree to requirements	☐ Agree to requirements
☐ Agree job can be done safely	☐ Agree job can be done safely	☐ Agree job can be done safely
Name:_____	Name:_____	Name:_____
Signature:	Signature:	Signature:
_____	_____	_____
Date:_____	Date:_____	Date:_____

Comments_____

_____

_____

_____

_____

_____

ALL SIGNATURES MUST BE OBTAINED

AUTHORIZATION FOR ENERGIZED WORK

Baker Group Safety Director Comments: Name:_____

☐ Reviewed Hazard Analysis
☐ Agree to justification
☐ Agree to analysis
☐ Agree to method

Signature:
_____
Date: _____

Responsible Project Manager Requesting Work

Comments: Name:_____

☐ Reviewed Hazard Analysis
☐ Agree to justification
☐ Agree to analysis
☐ Agree to method

Signature:
_____
Date: _____

General Contractor or Customer Requesting Work

Name:_____
Title:_____

☐ Reviewed Hazard Analysis
☐ Agree to justification

Reason equipment cannot be deenergized to perform this work_____
_____ Signature:
_____
_____
_____ Date:
_____
_____

Qualified, Competent Person in charge of this Job

Comments: Name:_____

☐ Reviewed Hazard Analysis
☐ Agree to justification
☐ Agree to analysis
☐ Agree this work can be done safely

Signature:
_____
Date: _____

Lockout Tagout lock removal form

Lock Removal Form

General Information:

Date & time of request to remove lock:_____
Lock # of lock owner: _____
Lock owner of lock to be removed:_____
Lock owner's supervisor:_____
Equipment & location:_____
Is it absolutely necessary for the equipment to be reenergized before the lock owner can return to personally remove the lock? Yes No

If "Yes", explain why:

_____

_____

Document reason for Removing Lock: (Lock owner called in sick, lock owner forgot to remove lock before leaving site, etc)

_____

_____

_____

Document attempts to contact lock owner prior to removal:

Date & Time: _____
Method of Attempted Contact: _____
Result: _____

Lock Removal:

☐ Verify that the lock will be removed by the supervisor of the lock owner or the supervisor's direct designee.

☐ Verify that the supervisor of the lock owner or the supervisor's direct designee has reviewed the equipment to ensure that it can be safely reenergized.

Lock removed by:_____ Date & time of removal:_____

Notifications:

☐ Verify that Energy Marshal has been informed (i.e. via e-mail or phone call/message) of lock removal within 24 hours of removal.

☐ Verify that lock owner has been informed of lock removal prior to beginning their next shift.

Signature of Lock Owner's Supervisor:_____ Date:_____

Signature of LOTO Energy Marshal:_____ Date:_____

Signature of GC Rep:_____ Date:_____

Hot Work Permit

Hot Work Permit

Contractor:_____ Date: _____ to _____

Project:_____ Time: _____ to _____

Requested by: _____ Title: _____

Specific Work Area / Section: _____ Penthouse____ Roof ____

Owners Representative: _____

Specific Work Process: _____

Individual on site who is responsible to monitor workers safety and implementation of this plan:

Note: Before approving and issuing a Hot Work Permit, The Baker Group Foreman ,Owners Rep. and Ior Contractor Safety Coordinator shall inspect the work area and confirm all potential exposures and adequate safety I fire prevention precautions have been addressed in the work area.

OWNERS HOT WORK PERMIT IS STILL REQUIRED

Type of Hot Work to be performed: Welding ☐ Torch Cutting ☐ Soldering ☐ Brazing ☐ Plasma ☐

Hot Saw Cutting ☐ Chop Saw ☐ Propane Torch ☐ Grinding ☐ Weed Burner ☐ Sweating Joints ☐

Work I Exposures Within 35 Feet

- ☐ Flammable / Combustible Adhesives (ie: paneling, roofing)
- ☐ Flammable / Combustible Paints / Concrete Sealants
- ☐ Flammable / Combustible Liquids Storage Tanks
- ☐ Natural Gas / Propane Tanks / Lines
- ☐ Material / Equipment covered with flammable / combustible
- ☐ Liquids / grease /lint
- ☐ Combustible Dust on equipment / building
- ☐ Workers below work area.
- ☐ Storage of Combustible Material in work area (same level)
- Storage of Combustible Material below work area floor
- ☐ Storage of Combustible Material on other side of wall
- ☐ Exposure to setting off fire alarms or sprinklers systems
- Explosive Atmosphere
- ☐ Plate Glass Windows
- ☐ Others: _____

Work on Walls I Ceilings I Floors I Roofs

- ☐ Noncombustible Material
  t ype of Material: _____
- ☐ Insulation
- ☐ Holes / Gaps that can trap hot sparks
- ☐ Combustible Material
  Type of Material:____
- ☐ Insulation
- ☐ Holes / Gaps that can trap hot sparks

Work in Confined Space

- ☐ Confine Space Permit
- ☐ Lockout / Tagout required
- ☐ Container purged of flammable / combustible vapors

Fire I Property Damage Prevention Precautions

Fire Watch: During operation_____
30 minutes after completion of work
Smoke/Heat Detectors: Central Alarm ☐
Local Alarm ☐

- ☐ Workers trained in fire watch (Below)
- ☐ Fire Hoses / Water Buckets / Garden Hose
- ☐ Sprinkler System in Service
- ☐ Sprinkler valve location identified
- ☐ Hot Work Equipment in good working condition
- ☐ Emergency exits located (2 exits)
- ☐ Covers suspended beneath work to collect sparks
- ☐ 20# ABC Fire Extinguishers < 25”
- ☐ Smoke Eater for smoke / fumes
- ☐ Fire Blankets
- ☐ Floor / Wall openings covered
- ☐ Plate Glass Windows covered Combustible floors wetted down, sand covered, or shielded
- ☐ Walkways covered / Danger tape / Warning signs
- ☐ All areas are cleared of combustible material
- ☐ Floors swept clean of combustible material
- ☐ Final Inspection (Below)

Special Precautions:_____

_____

Work Area Monitor

Work areas are to be monitored for up to 2 hours if the area can be watered down, 3 hours if water is NOT used after completion of work.

Work Area Monitor: _____ **Title:** _____

Occupational Health Considerations

Type of Material: Steel ☐ Stainless Steel ☐ Galvanized Metal ☐ Painted Steel ☐ Other ☐

Exposures: Metal Fumes ☐ Dust ☐ Vapors ☐ Other _____

Hexavalent Chromium Fumes ☐ Lead Fumes ☐ Other _____

Controls: Respirators ☐ Protective Clothing ☐

General Room Ventilation ☐ Fume / Dust Exhaust Ventilation ☐ Smoke Eater ☐

Are workers trained in the potential exposure? Yes ○ No ○

Pre-Planning Meeting

A Pre-Planning Meeting to review this **"Hot Work Permit"** has been conducted with all workers involved in the work and issuing of this permit. Workers signatures are below.

Date: _____ Conducted By: _____ Title: _____

Print Name	Signature	Subcontractor

Permit Authorization

I verify the location identified above has been examined, the precautions checked under Fire Prevention Precautions have been implemented, and permission is authorized for this work.

Authorized By: _____ **Title:** _____

Date: _____

Final Fire Watch Check/Performed by Fire Watch

I have inspected the work area and all adjacent areas (including floor above, below, and opposite sides of walls) 30 minutes after work was completed and found it to be fire safe.

Inspected By: _____ **Date:** _____ **Time:** _____

Work Area Monitor Check

I have inspected the work area and all adjacent areas (including floor above, below, and opposite sides of walls) 2 or 3 hours after work was completed and found it to be fire safe.

Inspected By: _____ **Date:** _____ **Time:** _____

Note: Hot Work Permit must be posted adjacent to the work area while performing work

Fall Protection Plan and Inspection(s)

Site Specific Fall Protection and Rescue Plan

Project: _____ **Date:** _____

Contractor: _____

Work Performed: _____

_____

Completed By:_____ **Title:** _____

Type of Fall Exposures

Describe in detail the type of fall exposures worker will be exposed to: Roof and Floor Perimeters, Aerial Lifts, Scaffolding, Scissor Lifts, Floor and Wall Openings, Excavations / Trenches, Stilts, Climbing Vertical Walls / Columns, Ladders, Loading Platforms, Steel Erection / Decking, Struck by Falling Objects etc.

Type of Fall Protection System

Describe in detail the type of fall protection system that will be utilized to protect workers

1) Fall Arrest: PFAS, Safety Nets, etc.
2) Fall Restraint: PFAS, Guardrails, Warning Lines, etc.
3) Falling Object Protection: Toe Boards, Canopies, Barricades, Ground Monitor, etc.

Type of Fall Protection Equipment

Describe in detail the type of fall protection equipment that will be used for each of the above Fall Protection Systems: Harnesses, Lanyards, Retractables, Static Lines, Mobile / Permanent Anchors, Static Lines, 2 x 4 / Wire Rope Guardrails, Warning Line, Rope Grabs, Fall Protection Warning Signs, etc.

Preplanning

Describe in detail procedures for preplanning all work with workers exposed to falls greater then 6’

Training of Workers

Describe in detail how workers throughout all phases of the project will be trained in fall protection and rescue? Documentation of fall protection training must be attached to this plan

Rescue Procedures

Describe in detail rescue procedures for safely rescuing workers

Project Specific Comments

BODY BELT/HARNESS INSPECTION RECORD

DATE	CHECKED BY	MODEL No.	HEAT EXPOSURE CHECK FIBERS	CHEMICAL CHANGE IN COLOR	HOT METAL/FLAME EXPOSURE BRITTLE	PAINT SOLVENTS	CHECK DEE RINGS DISTORTION/CRACKS	TONGUE/FRICTION BUCKLES CHECK MOVEMENT/SHARP EDGES	GROMMETS LOOSE/MISSING/ BROKEN

LANYARD INSPECTION RECORD

DATE	CHECKED BY	TYPE WEB/ROPE	HARDWARE SNAPS/THIMBLE	WEB LANYARD			ROPE LANYARD CHECK FIBERS			SHOCK ABSORBING SOFSTOPS		
				CUTS	BREAKS	OTHER	WORN	CUT	FRAYED	STITCHING	TEARS	BURN HOLES

Inspection Form
MEWP

Baker GROUP

DAILY LIFT INSPECTION FORM

Project Name: _____

Week Ending: _____

Model & Type of Lift: _____

Inspect each of the below items once a day prior to using the lift. Initial at the bottom.

	Mon		Tue		Wed		Thu		Fri		Sat		Sun	
Battery/Fuel														
Proper charge/level	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N
General Condition														
Visible defects	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N
Controls														
Proper operation	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N
Documentation														
User manual	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N
Safety placards	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N
Fall Protection														
Railings	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N
Tie-off points	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N
Hydraulics														
Proper fluid level	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N
Leaks present	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N
Oil														
Proper fluid level	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N
Platform														
Good condition	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N
Clean	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N
Tires														
Good condition	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N
Proper inflation	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N
Work Area														
Level surface	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N
Holes protected	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N
Clean	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N
Inspector Initials														

Additional Comments:

_____

_____

_____

Inspection Form Forklift / Powered Industrial Truck

DAILY FORKLIFT INSPECTION FORM

Lift #: _____ **Inspector:** _____

Job #: **Week Ending:**

Instruction:

Each forklift will be operationally tested and visually inspected each day. The designated inspector will place a (√) in the appropriate box when an item passes inspection. Leave the box empty and note a brief description of any problem. Immediately notify the Foreman of any aerial lift deficiencies. *The Foremen will forward this inspection form to the Safety Dept. at the end of each week.*

Operating Controls (Operational)	**Mon**	**Tues**	**Wed**	**Thu**	**Fri**	**Sat**	**Sun**	**Maintenance Needed**
Emergency Stop & Brakes								
Operation Levers & Controls								
Foot Controls (if applicable)								
Safety Signs & Load Charts								
Boom & Forks								
Hydraulic Leaks								
Extension Cylinders & Chains								
Pivot Pins								
Electrical Lines								
Vert. Mast Sliding & Rolling Prts.								
Base (Visual)								
Broken, Craked or Loose Parts								
Lights, Mirrors & Windows Clean								
Seat Belt & It's Mounts								
Tires & Outriggers								
Back Up Alarm, Horn & Manual								
Engine Compartment (Visual)								
Oil Level								
Fuel Level								
Belt, Hose & Motor Condition								
Battery & Electrical								

Additional Notes: _____

_____

_____

_____

Dept. Foreman Signature: _____ Date: _____

Baker GROUP SAFETY

Telehandler Forklift Pre-use Inspection Checklist

Operator:	**Make & Model:**
Company:	**Hour Meter Reading:**
Location:	**Date:** MM/DD/YYYY **Unit No.:**

POWER OFF CHECKS	Status OK	NO	N/A
1) Wheels and Tires	☐	☐	☐
2) Lights/Strobes	☐	☐	☐
3) Mirrors/Visibility aids	☐	☐	☐
4) Engine/Engine compartment:			
a) Belts/Hoses	☐	☐	☐
b) Cables/Wires	☐	☐	☐
c) Debris	☐	☐	☐
5) Battery/Batteries:			
a) Terminals tight	☐	☐	☐
b) Clean/Dry/Secure	☐	☐	☐
6) Hydraulics:			
a) Cylinders/Rods	☐	☐	☐
b) Hoses/Lines/Fittings	☐	☐	☐
7) Fluids:			
a) Engine oil Level Leaks	☐	☐	☐
b) Engine coolant Level Leaks	☐	☐	☐
c) Hydraulic oil Level Leaks	☐	☐	☐
d) Fuel Level Leaks	☐	☐	☐
8) Data/Capacity Plate/Load Charts	☐	☐	☐
9) Windows/Glass/Doors	☐	☐	☐
10) Lifting Attachment(s)	☐	☐	☐
11) Counterweight/Counterweight bolt(s)	☐	☐	☐
12) Hood/Covers/Panels	☐	☐	☐
13) Air filter indicator	☐	☐	☐
14) Boom Sections – damage/wear pads	☐	☐	☐
15) Boom Angle Indicator-free movement	☐	☐	☐
16) ROPS/Cab	☐	☐	☐
17) Frame level indicator	☐	☐	☐
18) Seatbelt	☐	☐	☐
19) Other:	☐	☐	☐
	☐	☐	☐
	☐	☐	☐
	☐	☐	☐

POWER ON CHECKS	Status OK	NO	N/A
20) Unit starts and runs properly	☐	☐	☐
21) Instruments/Gauges	☐	☐	☐
22) Warning lights/audible alarms	☐	☐	☐
23) Fuel level	☐	☐	☐
24) Horn/audible warning device(s)	☐	☐	☐
25) Function controls:			
a) Boom & carriage – raise/lower/tilt/extend/retract	☐	☐	☐
b) Lifting attachment – proper movement	☐	☐	☐
c) Drive – forward/reverse	☐	☐	☐
d) Steer – left/right	☐	☐	☐
e) Frame level	☐	☐	☐
f) Outriggers	☐	☐	☐
26) Braking:			
a) Service/De-clutch	☐	☐	☐
b) Parking	☐	☐	☐
27) Other:	☐	☐	☐
	☐	☐	☐
GENERAL	**OK**	**NO**	**N/A**
28) Housekeeping	☐	☐	☐
29) Manufacturer's operating manuals	☐	☐	☐
30) Decals/Warnings/Placards	☐	☐	☐
31) Misc. parts – loose/missing/broken	☐	☐	☐
WORKPLACE INSPECTION	**OK**	**NO**	**N/A**
32) Drop-offs or holes	☐	☐	☐
33) Bumps and floor/ground obstructions	☐	☐	☐
34) Debris	☐	☐	☐
35) Overhead obstructions	☐	☐	☐
36) Energized power lines	☐	☐	☐
37) Hazardous locations	☐	☐	☐
38) Ground surface and support conditions	☐	☐	☐
39) Pedestrian/vehicle traffic	☐	☐	☐
40) Wind and weather conditions	☐	☐	☐
41) Other possible hazards	☐	☐	☐

Report any problems found to your supervisor/employer. ALWAYS lock/tag-out unsafe equipment.

COMMENTS

Operator's initials:

Alternative operator's initials:

Crane Forms

Daily Crane Form

his plan to be completed daily and for each critical lift by crane operator and project team and saved in job file

Date _____ Project Name _____

Crane Operator _____ Signature of Operator _____

Description of Crane _____

_____

_____

Description of Crane Operation

CRANE OPERAITONS CHECKLIST

Y	N	
☐	☐	Annual, Monthly & Daily Inspections submitted to Baker Group?
☐	☐	Is weight of items to be lifted known? Method used to determine weight _____
☐	☐	Parts of line appropriate for size of load?

Utilize formula below for heaviest anticipated load to be lifted:

1. Weight of object to be lifted: _____
2. Total Deductions (jib, ball, etc.) _____
3. Total weight of rigging: _____
4. Total load (Add lines 1,2,3) _____
5. Capacity at planned radius _____
6. Divide line 4 by line 5 _____ %

☐	☐	Is crane set up within level as per manufacturer's requirements?
☐	☐	Are there underground vaults or adjacent excavations?
☐	☐	Site conditions (supporting surface) adequate to support crane's weight?
☐	☐	Is proper matting in place for cranes with outriggers?

Utilize formula below to determine square feet of matting needed:

1. Weight of crane: _____
2. Weight of crane divided by 2: _____ (A)
3. Maximum load to be lifted: _____ (B)
4. Add (A) + (B) _____ (C)
5. Divide (C) by 3000 lbs/sf _____ (D)

(D) equals square feet of matting needed for each outrigger

Daily Crane Form

CRANE OPERAITONS CHECKLIST continued

Y	N	
☐	☐	All outriggers fully extended and tires off of the ground? (where applicable)
☐	☐	Crane barricaded to prevent entry of unauthorized personnel and the public?
		List Maximum allowable wind speed for crane operations _____
☐	☐	Are wind conditions acceptable? List the method used to confirm wind speed: _____
☐	☐	Has swing path been designated to avoid swinging loads over workers?
☐	☐	Have qualified rigger(s) and signal person(s) been designated? List name(s) _____ _____ _____ Signaling Method: _____
☐	☐	Has signaling method been reviewed with designated signal person(s)?
☐	☐	Are personnel being lifted? If yes, complete crane suspended manbasket checl
☐	☐	Power lines within 20' of swing radius? Baker Group to be informed if within 20' of power line. 12' minimum clearance distance to be maintained. If yes, list procedures to avoid accidental contact: _____ _____ _____ _____
☐	☐	Will a tag line be used? If no, list why: _____ _____ _____
☐	☐	Anti-two block functioning properly?
☐	☐	Is LMI properly set for crane configuration?

Critical Lift Crane Form

To be completed for each lift over 75% of charted capacity

Date _____ Project Name _____

CRITICAL LIFT CHECKLIST

Y	N	
☐	☐	Has weight of load been confirmed?
☐	☐	Maximum radius determined? List maximum radius and capacity: _____
☐	☐	Within capacity at all points of anticipated radius?
☐	☐	Parts of line apporpriate for size of load? Cable size: _____ Capacity: _____ Parts of line: _____

List size and type of slings to be used:

_____

_____

List capacity of slings based on type of hitch and angle:

_____

_____

☐	☐	Do all rigging components (shackles, hooks, etc.) have adequate capacity?
☐	☐	Is rigging capacity adequate?

List crane configuration mode LMI should be set to for the critical lift:

_____

☐	☐	Pre-Lift meeting with all involved workers complete?

Crew Foreman Signature _____ Rigger's Signature _____

Crane Operator _____ Project Manager _____

Signature required for all critical picks

Additional JSA required for multi-crane or other specialized lifts.

Note: this permit does not relieve the holder of their responsibility to perform the work safely and in accordance with all Baker Group rules, and Federal/State standards. This permit does not relieve the holder of their responsibility to protect other work already in place.

Excavation and Trench Form

Trench Safety Assessment

	Date:	Time:	
Site Location:		Operator:	
		Competent person:	

Initial Trench Safety Assessment Considerations

Trench Location Marked	Yes	No			
Utility's Companies Contacted	Yes	No			
One Call Confirmation #					
Utility's Marked	Yes	No			

Hazard Communications	Respiratory Protection	Confined Spaces	Fire Prevention	Traffic
Job Hazard Analysis	Lock out tag out	Sling Safety	Process Safety	People Traffic
Electrical Safety	Welding Safety	Crane Safety	Air Monitoring	

Soil Assessment / Type

Type A	Most Stable	Clay, silty clay, and hardpan (resists penetration). No soil is type A if it is fissured, is subject to vibration of any type, has been previously been disturbed or has seeping water.
Type B	Medium Stability	Slit, sandy loam, medium clay and unstable dry rock; previously disturbed soils unless otherwise classified as type C; soils that meet class A soil, but fissured or subject to vibration
Type C	Least Stable	Gravel, loamy sand, soft clay, submerged soil or dense, heavy unstable rock, and soil from which water is freely seeping.

Soil testing methods - Check all that apply

Penetrometer	Dry Strength test	Plasticity/Wet thread test	Shearvance (Torvane)	
Visual test	Thumb Penetration test			

Trench Safety Check list

1	Has a "Competent Person" been assigned to oversee site safety?	Yes	No	
2	Does the "Competent Person" have the authority to "stop work" and remove workers?	Yes	No	
3	Are spoil piles at least 2' back from the edge of excavation?	Yes	No	
4	Are ladder location planned if excavation is >4', and staged within 25' of travel?	Yes	No	
5	If access ramps are used do they have a 5:1 (20%) maximum slope?	Yes	No	
6	If ladder is in use does it extend at least 3' above the landing?	Yes	No	
7	If > 5' has the proper shoring/shielding/sloping been selected?	Yes	No	

Protection - Shoring/Shielding/Sloping Selection & Related Equipment

Trench deeper than width	Yes	No	Trench Depth > 5'	Yes	No	Trench width < 15'	Yes	No	
Timber Shoring	Pneumatic Shoring		Hydraulic Shoring			Screw jack Shoring			
Plank Shoring	Trench Shield/Box		Sloping Angle ( )			Benching Angle ( )			

8	Are safety inspections conducted prior to each work shift and through out the day?	Yes	No	
9	For excavation > 20' in depth, has an engineer designed the protection?	Yes	No	

Verification	All unsafe conditions shall be corrected prior to trench entry. If any hazardous conditions are observed the trench shall be immediately evacuated and entry prohibited until corrected.

Approval & Authorization

Certification	I have conducted a trench/excavation safety assessment of the above designated excavation. To the best of my knowledge, I believe the information herein to be true and accurate as of the time of the

Name:	Date:
Signature:	Title:

DAILY EXCAVATION AND TRENCH INSPECTION FORM

Site Name & Excavation Location: _____

Date:_____Time:_____Excavation depth:_____Width:_____Top:_____Bottom: _____

Inspection performed by:_____(Competent Person)

Indicate for the items listed: (Y = yes; N = no; N/A = not applicable)

Y	N	N/A	
☐	☐	☐	Excavation, adjacent areas, and protective systems inspected by a competent person daily prior to the start of work.
☐	☐	☐	Soil classification shall be made based on the results of at least one visual and one manual test by a competent person.
☐	☐	☐	Excavation equipment (back hoe, end loader, etc.) inspected by a competent person before work is to begin.
☐	☐	☐	Competent person has the authority to remove employees from excavation immediately. Surface encumbrances removed or supported.
☐	☐	☐	
☐	☐	☐	Employees protected from loose rock or soil that could pose a hazard by falling or rolling into the excavation.
☐	☐	☐	Hard hats worn by all employees.
☐	☐	☐	Soils, material, and equipment set back at least 2 feet from the edge of the excavation.
☐	☐	☐	Barriers provided at all remotely located excavation, wells, pits, etc.
☐	☐	☐	Walkways and bridges over excavations 4 feet or more in depth are equipped with standard guardrail.
☐	☐	☐	Warning vests or other highly visible clothing provided and worn by all employees exposed to public vehicular traffic.
☐	☐	☐	Warning system established and utilized when mobile equipment is operating near the edge of the excavation.
☐	☐	☐	Employees prohibited from going under suspended loads.
☐	☐	☐	Employees are prohibited from working on the faces of sloped or benched excavations above other employees.
☐	☐	☐	Employees protected from water accumulation.
☐	☐	☐	Means of egress is in place. Ladder within 25 feet of lateral travel for employees. Or a ramp or other safe means of egress.

Note: Atmospheres in excavations greater than 4 feet shall be tested for oxygen content and flammable gas concentrations prior to entry of personnel. Emergency equipment and/or services shall be readily available. Are hazardous atmospheres present, if yes please explain.

_____

% of oxygen:__% % of LEL:____% Other: _____

******Soil classification shall be made on the results of at least one visual and one manual test.

(Check soil types and test performed) ____Stable rock_____Type A_____Type B_____Type C

Visual Tests
Inspect work site for:
__ Fissured ground
__ Layered soil
__ Previously disturbed Earth
__ Seepage
__ Vibration
__ Poor drainage

Manual Tests
Analyze soil for:
__ Plasticity
__ Dry strength
__ Thumb Penetration
__ Pocket Penetrometer
__ Shearvane
__ Drying test

Sloping & Benching:
__ Stable rock 90 degrees
__ Type A – 53 degrees
__ Type B – 45 degrees
__ Type C – 34 degrees

→ **Shoring and shielding**: ___Timber or Hydraulic ___Trench boxes, trench shields ___Design using tabulated date