



SAFETY MANUAL

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BEE STEEL, INC.
CORPORATE HEALTH &
SAFETY MANUAL

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BEE STEEL, INC.
CORPORATE HEALTH & SAFETY
POLICY STATEMENT

PURPOSE

The purpose of this statement is to formally communicate the corporate position on Occupational Safety and Health.

SCOPE

This Corporate Safety Policy Statement applies to all divisions, subsidiaries and companies of this corporation.

RECORDS

A copy of this Corporate Safety Policy Statement will be posted on all safety bulletin boards.

BEE STEEL, INC.
CORPORATE HEALTH & SAFETY
POLICY STATEMENT

The Company is committed to providing a healthy and safe working environment for every employee. Toward that end, an established Health and Safety Program guides the company in all its operations. All personnel will observe the rules and procedures in this program, as a moral and legal responsibility and as a sound business policy.

It is the company's goal always to maintain an effective safety program to guard against accidents, injuries and illnesses. All members of management and supervision are charged with the responsibility of preventing incidents or conditions that could lead to occupational injuries or illness and for developing the proper attitude of employees toward accident prevention, instructing employees in the recognition of hazards and insuring that all operations are performed with the utmost regard for safety.

While the ultimate success of a safety and health program depends upon the full cooperation of each individual employee, it is management's responsibility to provide a safe environment in which to work. Health and safety must be considered an integral part of quality control, cost reduction and job efficiency. Every supervisor will be held accountable for the safety performance demonstrated by employees under his or her supervision.

The Health and Safety Program is designed to reduce the number of injuries to a minimum. Unfortunately, when accidents occur every segment of our operation, as well as the lives of our employees and their families, suffers. Therefore, our Health and Safety Program shall be interwoven into every phase of the business and will be enforced uniformly, consistently and swiftly.

BRIGID KLOOSTRA
President

Safety Director

BEE STEEL, INC.

SAFETY PROGRAM RESPONSIBILITY

PURPOSE

The purpose of this policy is to provide a complete and clear description of safety responsibilities for all employees. It is important for all employees to understand not only their responsibilities but also the responsibilities of fellow employees.

PROCEDURE

All levels of management and supervision are charged with the responsibility of preventing conditions that could lead to occupational injuries or illness. While the ultimate success of our safety and health program depends upon the full cooperation of each employee, it is management's responsibility to see that safety and health rules and procedures are adequate and enforced, and to see that effective training and education programs are employed to the best advantage.

RESPONSIBILITY

Corporate Management

- Communicate the corporate safety commitment.
- Administer Safety Policies and Procedures within the framework of the company Corporate Safety Procedures Manual with particular emphasis on potentially hazardous operations.
- Accompany inspectors during inspections and properly document any events arising out of OSHA inspections, corporate safety audits or other formal type safety inspections conducted at the division or project site by outside agencies.
- Ensure compliance in the following areas; OSHA compliance programs, employee safety awareness and training, monitoring and investigation of worker compensation claims and accident occurrence, and reporting requirements are met. (300 Log, First Report of Injury, Insurance Claims, etc.)

Office Manager

- Perform and carry out any other assignments delegated by corporate management.
- Record keeping requirements.

Field & Shop Managers

- Enforce all safety policies and procedures.
- Ensure all accidents are reported, thoroughly investigated and corrective action is taken.
- Conduct monthly safety inspections. Maintain a formal monthly safety inspection program with a documented report reflecting environmental, safety and health discrepancies and recommendations or appropriate corrective actions by the responsible party.
- Follow up on all reported safety violations to ensure corrective action is taken.
- Initiate, implement, and administer safety training in accordance with established project site requirements.
- Prepare and distribute all required project site accident, injury, incident reports.
- Provide relevant safety programs information to site personnel and corporate personnel on site.
- Investigate all accidents, injuries, fires, property damage, and other safety and environmental related incidents, and issue required reports in a timely manner.
- Evaluate the need for and requisition the personal protective equipment, fire protection equipment and other safety-related equipment required to meet the project site's needs during construction or manufacturing operations.
- Display and maintain publicity materials on site bulletin boards, such as posters, safety signs, banners, and distribute safety literature.
- Take immediate corrective action whenever unsafe conditions and when unsafe acts are noted.

All Employees in the Company

- Read, understand, and follow all company safety policies and procedures.
- Perform all duties in a safe manner.
- Report all unsafe acts and conditions.
- Report all accidents immediately.
- Wear all personal protective equipment that is required and maintain the equipment in good condition.
- Set an example of safe working practice and follow all safety regulations.
- Participate in all safety training sessions.

Company Safety Director

- Establish safety policy and procedures.
- Advise on safety policy matters.
- Communicate safety policies to the various operating center safety committees.
- Monitor legislation and regulation changes as they relate to the safety policy.
- Monitor safety performance.
- Advise on recommended policy changes.
- Identify and evaluate job hazards and recommended corrective action.
- Make safety equipment recommendations.
- Evaluate and recommend training requirements and safety training programs for job superintendents.
- Recommend policy enforcement procedures.
- Monitor program effectiveness and recommend improvements.

BEE STEEL, INC.
SAFETY VIOLATION
& DISCIPLINARY ACTION

PURPOSE

The purpose of this policy is to support the enforcement of good safety performance and to eliminate repeated or continuing safety violations by the use of appropriate disciplinary measures.

OBJECTIVE

The primary objective of the company safety program is to provide a safe work environment for all employees. Foremen or supervisors are required to issue appropriate specific safety instructions to all employees prior to assigning them work. Foremen or supervisors are responsible for coordinating work with other supervisors in the work area to ensure that all work can be accomplished safely. Each employee is individually responsible for complying with each of the provisions of the Corporate Safety Program, in addition to those safety instructions issued by the employees' foreman or supervisor, either verbally or in writing. However, when Safety Policies and Procedures are violated or individuals continue to be involved in accidents or infractions, disciplinary action must be considered, in order to emphasize the gravity of the situation and bring about desired improvement.

Each employee who reports for work will be given a safety orientation as a part of the general hiring process. During this orientation, the company's positive attitude toward working safety will be stressed and the employee will be advised that safety compliance is a condition of work. The safety program will be explained and safe responsibilities will be clearly defined.

When an employee is observed committing an unsafe act, the employee is to be informed by means of a formal safety notice letter. The exact nature of the violation and what is acceptable must be thoroughly explained to the employee. A copy of the written warning will be given to the employee's supervisor and a copy placed in the employee personnel file. Violations for which written warnings will be issued are as follows:

- Any bargained rules.
- Corporate policy where bargaining doesn't address or conflict.
- Any client mandated safety.

BEE STEEL, INC.

ACCIDENT REPORTING, INVESTIGATION & RECORDKEEPING

PURPOSE

To provide a guide to aid in the accident and injury process by requiring immediate reporting, treatment, and worker compensation claims and ensuring the quality of documentation. This will help develop an accurate understanding of the primary and secondary causes of an accident.

SCOPE

This procedure applies to all operations with this company.

DEFINITIONS

Accident: An unintended occurrence that either caused or may have caused personal injury, property damage, or interference with production.

RESPONSIBILITY

Managers, supervisors, and/or foremen will document and complete an accident or injury investigation in a written report (Accident & Injury Report) and distribute appropriately.

ACCIDENT MANAGEMENT PROCEDURE

Report all accidents, regardless of the severity of the injury, to your manager or supervisor immediately.

- When an accident occurs, first and foremost, check to see if the injured person needs medical attention that may be more than first aid. If immediate medical care is necessary dial 911 or the designated site phone number for emergency services.
- Once the injured person has been cared for, managers, supervisors and/or foremen must take any immediate actions necessary to prevent a similar type accident.
- In all accident and injury situations the Accident & Injury Report must be completed and signed (this includes first aid cases).

- If the Accident & Injury Report can't be completed before treatment, the paperwork will be completed as soon as practical. In all other accident and injury instances the manager, supervisor and/or foremen must complete and sign the Accident & Injury Report.
- The company requires all injured employees to complete a post accident substance abuse test when receiving medical treatment. (Refer to the drug free workplace policy)
- Injuries on the road will be handled on a case-by-case basis. Regardless of where the individual receives treatment the supervisor, manager and/or foremen must complete the Accident & Injury Report.
- When the injured individual returns to work, he or she must turn in all paperwork from the doctor and treatment facility to the manager, supervisor and/or foreman.
- The manager, supervisor and/or foreman must submit the Accident & Injury Report to the safety director.
- The safety director will review the Accident & Injury Form, treatment facility reports, doctor's evaluation, and any other paperwork and if applicable complete a formal accident investigation.
- Based on the information gathered and reviewed by the safety director it may be applicable to complete a First Report of Injury for submittal of the claim to the insurance company.
- The safety director will determine if the injury is recordable on the OSHA Accident & Injury Log.
- This process shall take no longer than 24 hours.

SERIOUS INJURY OR DEATH

- For accidents resulting in serious injury, care should be taken to make sure the injured party receives the proper help. Managers, supervisors and/or foremen must make arrangements to complete the Accident & Injury Form and conduct a formal accident investigation.
- For accidents resulting in one or more fatalities or hospitalization of three or more employees, the local area OSHA office must be notified. This notification is made by a senior company representative and must be made within 48 hours after the occurrence of the accident. It can be made either orally (telephone) or faxed to the OSHA Area Director.

RECORDS

- All paperwork resulting from an accident or injury will be maintained in the corporate office.
- A copy of any faxes or letters sent to OSHA shall remain on file in the office.

BEE STEEL, INC.
DRUG FREE WORKPLACE POLICY

POLICY STATEMENT

The company is committed to providing a drug-free workplace and we expect the cooperation of all employees and a similar commitment from them. Pursuant to the Drug-Free Workplace Act of 1988, the unlawful manufacture, sale, distribution dispensation, possession or use of a controlled substance in the workplace is prohibited. Any employee who violates the above rule may be subject to discipline up to and including termination. As a condition of employment, all employees must agree to the rule. In addition, any employee who is convicted of a drug statute violation arising out of conduct occurring in the workplace must notify the company of such a conviction within five (5) days after the conviction.

It is the policy of the company to provide a safe working environment for all employees, and to continue the tradition of the highest standards of quality in products and services. It is also this company's policy to assist employees who have a problem with drug and alcohol abuse. These goals mandate that this company establish a firm policy against drug and alcohol abuse in the workplace. Our goal is to eliminate the abuse, not the abuser our goal is to help, not to apprehend.

The following rules represent the company's policy concerning substance abuse. They are effective immediately and will be enforced uniformly with respect to all employees, as indicated.

- A. All employees are prohibited from being under the influence of alcohol or illegal drugs during working hours.
- B. The sale, possession, transfer or purchase of illegal drugs on company property or while performing company business is strictly prohibited. Such action will be reported to appropriate law enforcement officials.
- C. The use, sale or possession of an illegal drug or controlled substance while on duty is cause for termination.
- D. Any employee who commits an unlawful act on or off company premises or whose conduct discredits the company in any way will be subject to discipline, including termination.
- E. No alcoholic beverages will be brought or consumed on company premises except in connection with company authorized events.

- F. No prescription drug will be brought on company premises by any person other than the one for whom it was prescribed. Such drugs will be used only in the manner, combination and quantity prescribed.
- G. Any employee whose off-duty abuse of alcohol or illegal use of prescription drugs results in excessive absenteeism or tardiness or is the cause of accidents or poor work will be referred to an employee assistance program for rehabilitation and will face termination if he or she rejects that program.
- H. As a condition of employment, the employee must abide by the terms stated previously and shall notify the employer of any criminal drug statute conviction for a violation occurring in the workplace no later than five (5) days after such conviction. Such a conviction will subject the employee to the same disciplinary procedures as those employees who test positive under drug screening procedures.

The purpose of the policy set forth above are:

- To establish and maintain a safe and healthful working environment for all employees.
- To ensure the reputation of the company and its employees within the community and the industry at large.
- To reduce the number of accidental injuries to person or property.
- To reduce absenteeism, tardiness and improve productivity, and
- To provide rehabilitation assistance for any employee who seeks such help.

WHEN TESTING WILL OCCUR

All employees will be required to submit to a drug screen test as a condition of employment under the following circumstances:

- Each employee will be tested for drugs and alcohol after a work-related accident, if he or she has been observed using a suspected prohibited substance on the job, if he or she has been observed using a suspected prohibited substance on the job, if he or she exhibits a severe and prolonged reduction in productivity, or if the company has other reasonable cause for testing him.

- An employee who fails or refuses to submit to testing when requested will be subject to discipline, including termination.

EMPLOYEE TESTING POSITIVE

Employees who test positive are subject to immediate discipline including discharge.

PRESCRIPTION DRUGS

- Employees taking prescription drugs must adhere to the following procedure:
- Notify the immediate supervisor prior to the commencement of the work shift and provide the supervisor with the name of the prescription drug and the prescribing physician.
- Carry the medication in the current prescription container with no more than the dosage required for the work shift.

BEE STEEL, INC.
RETURN TO WORK/LIGHT
DUTY POLICY

POLICY STATEMENT

In the event of an occupational injury that does not prevent an employee's return to work with physical restrictions, the company will make a reasonable effort to provide the injured with a position with physical requirements that are consistent with the doctor's recommendations.

PROCEDURE

With the injured employees' knowledge, the following three options may be considered by appropriate company personnel in order to accommodate the employee:

- A. Determination of work availability by the appropriate company personnel.
- B. Transfer the employee to a job position with physical requirements that are consistent with the doctor's recommendations.
- C. If the above two cannot be executed, the appropriate company personnel may develop a job with physical requirements that are consistent with the doctor's recommendations. Each case is reviewed on a case-by-case basis and depends on current work availability.
- D. If the injured employee does not accept or does not complete the job that is offered, disciplinary action up to termination is possible.

BEE STEEL, INC.

SAFETY COMMITTEES

COMPANY SAFETY COMMITTEE

Safety committees are simply a communications device to facilitate active thinking and participation in maintaining a safe work environment. The following guidelines may be used.

- The safety committee will meet once a month.
- All accidents and accident investigation reports are to be reviewed and discussed to share insights that may prevent recurrence.
- Review and discuss findings of joint construction site safety inspection and any other inspection conducted in the previous week.
- Discuss recommendations on safety improvements brought to light as a result of the inspection.
- Discuss safety concerns and suggestions.
- Discuss construction and production for the coming month and safety issues to be addressed.
- Offer topics for discussion for the monthly toolbox safety talk.

COMMITTEE MEMBERSHIP STRUCTURE

Chairman

- Develop a written agenda for the meeting.
- Lead the safety committee meetings, following the agenda and encouraging open discussion.
- Designate one committee member per month to participate in the joint facility inspection.
- Communication of safety committee minutes.
- Start meetings on time and limit length of meeting to one-half hour.

Committee Member

- Attend and actively participate in all safety committee meetings.
- Communicate safety concerns.
- Set an example of safe work and follow all safety regulations.
- Offer insight and assist accident investigation procedures.

Recorder

- Take minutes of all safety committee meetings.
- Make sure minutes are typed and distributed.

Records

- Original shall be placed in file.
- Copy to each committee member.
- Copy to Corporate Safety Director.

BEE STEEL, INC.

WORK AREA

HAZARD ASSESSMENT POLICY

PURPOSE

Work area hazard assessment procedures provide a mechanism through which the information needed to anticipate, recognize, identify, and evaluate work area hazards can be obtained. The information thus gained is utilized in the design and implementation of employee safety and environmental protection programs.

SCOPE

These work area hazard assessment guidelines apply to all company divisions and field construction and maintenance projects. The outcome of the hazard assessments will be utilized in determining specific personal protective equipment requirements for employees.

SCOPE & POLICY

This procedure will be implemented on an as needed basis where a thorough understanding of all work area hazards has not been established.

REGULATIONS

Except to the extent that more explicit or more stringent requirements are written directly into these guidelines, the primary regulatory reference relating to employee protection and the performance of work area hazard assessment activities shall be Title 29 Code of Federal Regulations Part 1926.20, 1926.35 and 1910.38. These regulations, promulgated and enforced by the Occupational Safety and Health Administration (OSHA), are applicable to the work performed by the company.

PROCEDURE

Work area hazard assessment activities shall proceed in at least two distinct phases:

Initial Assessment

- Prior to initial deployment of employees into a work area, a preliminary hazard survey of the work area(s) may be completed.

- The survey should be made by an individual who is familiar with the type of industrial process involved in recognizing and evaluating exposures to potentially harmful materials.
- The individual should be accompanied by qualified plant personnel to explain any process or steps in manufacture that are not evident to the surveyor. Among the personnel who are best suited to the role of guide for the investigator are the production superintendent, the foreman of the work area under investigation, and the client Safety Manager.
- This initial phase of assessment will provide information about the facility to be occupied, about the process, raw materials present, waste materials present, and will serve to provide information useful in the development of hazard communication and personnel protection programs.
- Once the initial assessment has been completed and the data obtained evaluated, the procurement of appropriate, necessary equipment and services can be initiated.
- Information obtained from the initial assessment will serve to facilitate deployment of the workforce in a manner that is safe, in conformance with applicable regulations, is timely, and cost effective.

Periodic Assessment

- It is important to recognize that work area hazard assessment is a continuous process. For each phase of work, i.e., contract specification, a work area hazard assessment shall be performed and evaluated to define the hazards that the work area and/or assignment may pose. This assessment shall be used to develop the safety and health strategy for the next phase of work.
- In addition to the formal information gathering that takes place during the phases of work area hazard assessment described here, all work area personnel should be constantly alert for new information about work area conditions.
- The sections below detail the components of the two phases of work area hazard assessment and provide a general guide which should be adapted to meet each specific work situation.

WORK AREA HAZARD ASSESSMENT

- Work area hazard information can be obtained by two methods: the preliminary survey and investigational survey.

PRELIMINARY SURVEY

- There should be as much data as possible collected from the facility/client personnel prior to any personnel deployment into the work area. The preliminary survey relies heavily on information being provided by the facility operator/owner to the company. The preliminary survey is usually made with no equipment for measurement purposes other than those portable pieces of equipment that can be conveniently carried on the person, such as a sound level meter.
- The surveyors should always determine the presence of control measures and provide an opinion about: The probable need for or effectiveness of control, The type of personnel, in terms of training, skill, or knowledge of the potential hazards in the workplace, and The attitude of management, supervising staff, the personnel employed at the work site toward health and safety practices, along with the control measures currently in effect and proper maintenance procedures.
- Additionally, where possible, the following information should be incorporated into the preliminary survey: Exact location of the work area(s) within the facility, mapped locations of buildings, containers, impoundments, pits, ponds, and tanks, detailed description of the activity that is to be performed in the work area, and anticipated duration of the activity.
- Hazardous substances involved and their chemical and physical properties. Information sources may include: company records, receipts, logbooks, ledgers, records from state and federal pollution control regulatory and enforcement agencies, state Attorney Generals Office, state occupational safety and health agencies, state Fire Marshal's office, waste storage inventories and manifests or shipping papers, and Interviews with facility personnel (all interview information should be verified).
- Vehicular traffic patterns/parking areas at the facility.
- Observations of labels, markings, or placards on containers or vehicles.
- Observations of deterioration or damage of containers or vehicles.

- Detection of unusual odors.
- Utilization of Preliminary Survey Data - Information obtained from the preliminary survey is to be used in the formulation of the project's hazard communication training program. Additionally, the data will assist the company in the selection of appropriate personal protective equipment for work activities.

INVESTIGATIONAL SURVEY

- Components of an investigational survey may include, but may not be limited to, the following: Monitoring the air for IDLH and other conditions that may cause death or serious harm (combustible or explosive atmospheres, oxygen deficiency, toxic substances), monitoring for ionizing radiation, visual observation for signs of actual or potential IDLH or other dangerous conditions, monitoring of welding operations for conditions of toxic metals exposure, measurement of ventilation systems for both volume and velocity characteristic, measurement of occupational noise exposure, measurement of organic vapor concentrations during painting operations, inspection and monitoring of asbestos containing materials, and measurement of organic solvent exposures during facility maintenance operations.

Some situations warrant special consideration: Any indication of IDLH hazards or other dangerous conditions should be regarded as a sign to proceed with care and deliberation. Extreme caution should be exercised in continuing the work area survey when such hazards are indicated. If IDLH or other dangerous conditions are not present, or if proper precautions can be taken, continue the survey.

INFORMATION DOCUMENTATION

Proper documentation and document control are important for ensuring accurate communication, ensuring the quality of the data collected, and providing the rationale for safety decisions. Documentation can be accomplished by recording information on the Hazard Assessment Form pertinent to field activities, sample analysis, and work area conditions.

HAZARD ASSESSMENT

Once the presence and concentrations of specific chemicals or classes of chemicals have been established, the hazards associated with these chemicals must be determined. This is done by referring to standard reference sources for data and guidelines on permissible levels of exposure, flammability, etc.

Threshold Limit Value (TLV) - TLVs can be used as a guideline for determining the appropriate level of worker protection. These values have been derived for many substances and can be found in Threshold Limit Values for Chemical Substances and Physical Agents, which are published annually by the American Conference of Governmental Industrial Hygienists (ACGIH). The ACGIH defines three categories of TLVs: time-weighted average (TWA), short-term exposure limit (STEL) and ceiling (C). All three categories may be useful in selecting levels of protection within a work area. Refer to the Threshold Limit Values for Chemical Substances and Physical Agents for additional details.

Permissible Exposure Limit (PEL) - Permissible exposure limits are enforceable standards promulgated by OSHA. In many cases they are derived from TLVs published in 1968. The PEL for a substance is the 8-hour time weighted average or ceiling concentration above which workers may not be exposed. Although personal protective equipment may not be required for exposures below the PEL, its use may be advisable where there is a potential for overexposure.

Recommended Exposure Limit (REL) - A NIOSH recommended exposure limit (REL) is the workplace exposure concentration recommended by NIOSH for promulgation by OSHA as a PEL, but is not enforceable as is the OSHA PEL. In some cases, NIOSH as described time-weighted average concentrations in terms of 10-hour, rather than 8-hour averages.

IDLH Concentrations - IDLH exposure concentrations have been established by the NIOSH/OSHA Standards Completion Program (SCP) as a guideline for selecting respirators for some chemicals. The definition of IDLH varies depending on the source. For example, the Mine Safety and Health Administration Standard defines IDLH conditions as those that pose an immediate threat to life or health or that pose an immediate threat of severe exposure to contaminants such as radioactive materials that are likely to have adverse cumulative or delayed effects on health. The NIOSH Pocket Guide to Chemical Hazards defined IDLH concentration as the maximum level from which one could escape within 30 minutes without any escape-impairing symptoms or any irreversible

health effects. The American National Standards Institute, Inc. (ANSI) defines IDLH as any atmosphere that poses an immediate hazard to life or produces immediate irreversible debilitating effects on health. On projects, IDLH concentrations should be assumed to represent concentrations above which only workers wearing respirators that provide the maximum protection (i.e., a positive-pressure, full-face piece, self-contained breathing apparatus (SCBA) or a combination positive-pressure, full-face piece, supplied-air respirator with positive pressure SCBA) are permitted. Specific IDLH values for many substances can be found in the NIOSH Pocket Guide to Chemical Hazards.

Potential Skin Absorption and Irritation - Information on skin absorption is provided in the ACGIH publication, Threshold Limit Values for Chemical Substances and Physical Agents and in OSHA standard 29 CFR Part 1910.1000 and other standard references. These documents identify substances that can be readily absorbed through the skin, mucous membranes, and/or eyes by either airborne exposure or direct contact with a liquid. This information, like most available information on skin absorption is qualitative. It indicates whether, but not to what extent, a substance may pose a dermal hazard. Thus decisions made concerning skin hazards are necessarily judgmental. In addition, many chemicals, although not absorbed through the skin, may cause skin irritation at the point of contact. Signs of skin irritation range from redness, swelling, or itching to burns that destroy skin tissue. Standard references can be used to determine whether a chemical may act as an irritant.

Potential Eye Irritation - Quantitative data on eye irritation are not always available. Where a review of the literature indicates that a substance causes eye irritation, but no threshold is specified, a competent health professional should be consulted to evaluate the data to determine the level of personal protection needed for workers.

Explosion and Flammability Ranges - The lower explosive limit (LEL) or lower flammable limit (LFL) of a substance is the minimum concentration of gas or vapor in air below which the substance will not burn when exposed to a source of ignition. This concentration is usually expressed in percent by volume. Below this concentration, the mixture is too “lean” to burn or explode. The upper explosive limit (UEL) or upper flammable limit (UFL) of a substance is the maximum concentration of gas or vapor above which the substance will not burn when exposed to a source of ignition. Above this concentration, the mixture is too “rich” to burn or explode. The flammable range is the range of concentrations between the LFL and UFL where the gas-air mixture will support combustion. The flashpoint of a substance is the minimum temperature at which it gives off sufficient vapor to form an

ignitable mixture with the air just above the surface of the substance. Ignition of a substance at the flashpoint is not continuous. The ignition temperature or auto-ignition temperature is the minimum temperature required to initiate or cause self-sustained combustion without an ignition source. When evaluating the fire or explosion potential in a work area, all equipment used should be intrinsically safe or explosion-proof. Where flammable or explosive atmospheres are detected, ventilation may dilute the mixture to below the LEL/LFL. However, ventilation is generally not recommended if concentrations exceed the UFL/UEL, since the mixture will pass through the flammable/explosive range as it is diluted. Note that combustible gas indicator readings may not be accurate when oxygen concentrations are less than 19.5 percent.

Hazardous Substance Information Form - Information on the chemical, physical, and toxicological properties of each compound known or expected to be present in the work area should be recorded on a Hazardous Substance Information Form. Response personnel will then have the necessary health and safety information in one place, and can personnel be quickly briefed. As many reference sources as possible should be used to fill out the sheets because the information may vary from one source to another. Material Safety Data Sheets provided by chemical manufacturers is one source for this information.

Monitoring - Because work area activities and weather conditions change, an ongoing air monitoring program should be implemented after hazard assessment has determined that the work area is safe for routine operations.

BEE STEEL, INC.

SAFETY TRAINING POLICY

SUMMARY

The company regards its employees as vital parts of the organization. As such, the company accepts the responsibility of providing a work place where the employee can do his job without injury to themselves or others. This section defines Safety Training Requirements and methods that have been developed by the Safety Director and the Corporate Safety Planning Committee to meet job requirements and safety objectives, and maintain compliance with OSHA standards.

SCOPE

The safety orientation handbook is to be used by all divisions. It will be used to train all employees.

SUPERVISOR SAFETY TRAINING

The company will provide special instruction to those who are responsible for training activities. The purpose of “how to” training includes the following:

- Provide guidelines for developing, scheduling & delivery of safety awareness training for employees.
- Encourage safety awareness.
- Motivate employees to follow proper safety procedures.
- Eliminate safety hazards.
- Introduce employees to new safety rules, practices and equipment.

The instructional curriculum may include but is not limited to the following:

- Corporate Safety Manual
- Accident Reporting & Investigation
- New Hire Safety Orientation Process
- Hazard Recognition
- Monthly Safety Inspection Procedure
- OSHA Inspection Procedure

CONDUCTING SAFETY TRAINING

- An effective safety meeting must be planned and prepared in advance.
- Toolbox safety meetings or field safety meetings are to be conducted when appropriate and last approximately 10 minutes.
- All meetings are to be divided into two sections (1) the presentation itself and (2) a question and answer period.
- It is very important to allow those in attendance to participate. This will help to ensure that the message has been received.
- Use the safety training sign-in sheet to document the training.

SAFETY ORIENTATION TRAINING

Job Safety orientation shall be conducted prior to job start-up for all current employees assigned to the job. This training shall cover, but is not limited to, the following:

Company rules and regulations:

- General safety rules and uniform requirements
- Site hazards, unique to a specific job, or a divisional project
- Safety operating procedures
- The Safety Policies & Procedures Handbook (all employees are to read or have read to them the contents). The employee, after receiving the aforementioned briefing, shall complete the “Safety Training Record” located at the end of the Safety Policies & Procedures Handbook.

ONGOING EMPLOYEE SAFETY TRAINING

All employees will attend regular safety meetings. At each meeting different topics will be discussed and any specific safety conditions or concerns will be focused on. During these meetings employees will be instructed on:

Tool Box Safety Talks

- The proper use of tools/equipment
- Personal protection devices

- Vehicle operations
- General site safety matters
- New or updated safety procedures

Formal OSHA Employee Safety Training

- Hazard Communication
- Lockout/Tagout
- Confined Space
- Respiratory Protection
- Emergency Action Plan
- Forklift

The effectiveness of the training given to our employees will hopefully result in a low number of injuries/accidents. That is why each division will be responsible for implementing whatever training program will ensure that the workforce receives sufficient training. The company will comply with OSHA, DOT, and EPA standards. In addition, supervisors will meet with the Safety Director regularly to receive updates and training on safety matters.

SPECIALIZED TRAINING

Specialists shall perform additional high hazard and life safety training.

RECORDKEEPING

Maintenance of records of training is required. Complete records are one of the most important resources in documenting compliance with the Safety Policies & Procedures. The site safety coordinator or office manager shall maintain the following records:

- New Hire Safety Orientation
- Formal OSHA Employee Safety Training Records
- Tool Box Safety Talks (shop or site safety information)
- Any other Specialized Safety Training

DOCUMENTATION

A log shall be kept of all employees and their level of orientation. This will enable more experienced personnel to help the new hires and track required safety training.

- The trainer will enter on the attendance log the date, name, topics discussed and length of meeting.
- Each employee will sign the attendance log.
- The log will be maintained in the safety file for record retention.

BEE STEEL, INC.

HAZARD COMMUNICATION PROGRAM

POLICY

To provide a hazard free workplace, including a Hazard Communication Program to ensure the safety and health of all employees during the use, handling, and transfer of potential hazardous chemicals in which exposure could cause illness and injury.

SCOPE

Compliance with this program is mandatory and is applicable to all employees. Failure to comply with this program is grounds for disciplinary action and/or termination.

“RIGHT TO KNOW”

A variety of laws, standards, and regulations are included in the term “right to know”. As applied to the workplace, “right to know” pertains to the individual employees’ right to receive information about the potential hazards of working with materials and substances in the workplace. This right is guaranteed to virtually all employees by two rules issued by the Federal Occupational Safety and Health Administration (OSHA). The “Access to Records” rule gives employees the right to review and obtain copies of any records that the employer has regarding the employees exposure to hazardous materials in the workplace, as well as any health records pertaining to that employee.

DEFINITIONS

Chemical - any element, chemical compound or mixture of elements or compounds that include: *Liquids, Solids, and Gases*.

Hazardous Chemical - any chemical that has been identified as a physical hazard or a health hazard by the manufacturer or supplier.

Material Safety Data Sheet (MSDS) - Written/printed information concerning a hazardous chemical that is prepared in the format required by the OSHA standard.

Label - Any written, printed or graphic sign or symbol displayed on or affixed to containers of hazardous chemicals. A label identifies the hazardous chemical, appropriate hazard warnings, and name and address of the manufacturer, importer, or other responsible party, and target organ effects.

Hazardous Substance - exposure to which results or may result in adverse affects on health or safety of employees.

Health Hazard - a chemical, mixture of chemicals, or a pathogen for which there is statistically significant evidence based on at least one study conducted in accordance with established scientific principles that acute or chronic health effects may occur in exposed employees.

Immediately Dangerous to Life and Health (IDLH) - an atmospheric concentration of any toxic or corrosive substance that poses an immediate threat to life or would cause irreversible or delayed adverse health effects or would interfere with an individuals ability to escape from a dangerous atmosphere.

Permissible Exposure Limit (PEL) - means the dermal or inhalation exposure limit.

INTRODUCTION

Chemicals play an important part in our personal lives and likewise are a necessary part of many workplace operations. Few workplaces exist where there is not some potential exposure to chemical substances. The use of chemicals are required to complete work, for instance, solvents and lubricants are used to clean and maintain equipment, fuels are required to operate vehicles and other equipment, and fuel and gases are necessary to cut or melt materials.

The following written Hazard Communication Program (HCP) is in place for the personnel of the company in order to comply with 29 CFR 1910.1200 and to assist the company in achieving our over all goal of a safer workplace. The purpose of the HCP is to ensure that the hazards of chemicals located in the workplace are evaluated and that the information is transmitted to potentially exposed employees. A successful HCP will reduce potential incidents of chemical source illness and injuries.

HAZARD EVALUATION

For all potentially hazardous materials used, handled, stored, or generated in the workplace, the company attempts to determine whether a potential hazard in fact exists. Based on this determination, appropriate precautionary measures are implemented to protect employees.

For other purchased products (such as solvents, acids, fuels, and other chemicals), the company relies on information in the MSDS provided by the suppliers. When each MSDS is received every effort is made to assure that the information on the MSDS is complete and accurate. Whenever new information about a product is received, the additional information is placed in the MSDS binder, and potentially exposed employees are informed of relevant details.

FORMS OF HAZARDOUS SUBSTANCES

Exposure to different types of chemicals or other hazardous substances carry different potential hazards. Each employee should review the company's chemical inventory list to identify hazardous substances that may be present in his/her work area. Review the MSDS for those materials to determine what potential hazards are involved, under what conditions, and what precautions should be taken in using or handling the materials. In general, potentially hazardous materials in the workplace can be in several different forms:

Fumes: Any operation which results in cutting or welding metal materials may create potential hazards. To protect themselves from these potential hazards, employees exposed to these operations should read and understand the appropriate MSDS, check air-monitoring results for their work area and be alert for any unusual emissions or odors in the work area.

Dusts: Potentially hazardous dust exposure can occur in certain operations. Employee overexposure to airborne dust could present possible health problems. For example, cigarettes and food may become contaminated with airborne dust or dust on an employee's hands. When the cigarettes and food are consumed, potentially hazardous dust enters the body resulting in possible health problems. For this reason, the company may prohibit smoking and/or eating in certain work areas. Employees should always wash their hands before eating and smoking. In addition to potential health hazards, excessive concentrations of some dusts could present a possible fire and explosion hazard. Employees should review the appropriate MSDS for material being handled and follow all suggested precautions.

Acids: Exposure to acids can occur when handling batteries. Contact with acid can cause severe burns to skin or eyes, and inhalation of acid mist can cause respiratory system damage. Any employee exposed to acid spills or splashes should immediately seek medical attention.

Solvents: Solvents may be used in the work area to clean machinery or other material. Excessive inhalation of solvent vapors can cause damage to internal organs, such as the liver, kidney, lungs or central nervous system. Skin contact with solvents can cause dermatitis or sensitization. Some solvents can also be absorbed through the skin and cause internal damage. The potential hazard of some solvents is increased by their poor warning properties. By the time the odor from solvents is detectable, overexposure has already occurred.

Fuels and Fuel Gases: Materials such as gasoline and diesel fuel are necessary for the operation of vehicles and other equipment. Likewise fuel gases such as propane or acetylene are used to torch material. Overexposure to these fuels can cause potential health or safety problems for employees. The most obvious danger from these materials is the potential for fire and explosion. Vapors or gases can travel long distances and possibly reach an ignition source (i.e. sparks and electricity) resulting in severe fire or explosion. In addition, overexposure to these materials can cause skin or eye burns and other potential health problems. It is extremely important that employees know the information on labels and MSDS and follow instructions whenever using these materials.

Other Materials: A variety of other materials and chemical substances are routinely used in operations. The large number of ways in which exposure can be hazardous makes it impossible to develop general rules that apply in all situations. Specific hazards and precautions for particular materials are listed on the MSDS for those materials. If you encounter any information, which is difficult to understand, consult your supervisor. As a general rule, employees must not handle any material without first determining its identity. Once the identity is known use of the material must be in accordance with precautions listed on the label and MSDS. Never torch or cut on an empty container without first determining what was previously in the container.

ROUTES OF ENTRY INTO THE BODY

Inhalation: This is an important exposure route of concern with hazardous chemicals. The lungs are extremely vulnerable to chemical agents. Inhalation of chemical agents that do not directly affect the lungs may pass through lung tissue into the bloodstream, which then carries the toxins to other parts of the body. The human senses cannot detect all

chemical agents in the atmosphere, i.e. they may be colorless, odorless, and their toxic effects may not produce any immediate symptoms. Respiratory protection is extremely important if there is a possibility that the atmosphere may contain such hazardous substances. Chemicals can also enter the respiratory tract through punctured eardrums. Individuals with punctured eardrums should immediately be medically evaluated specifically to determine if such a condition would place them at unacceptable risk.

Skin & Eyes: Hazardous chemicals can be absorbed through the skin and into the bloodstream where they are transported to vulnerable organs. Skin absorption is enhanced by abrasions, heat, moisture, and cuts. The eyes are moist and have capillaries near the surface that allows airborne materials to dissolve into the eye. Therefore, the hazardous material is carried throughout the body in the bloodstream. Factors that can help protect against skin and eye contact are protective equipment, keeping hands away from the face, not wearing contact lenses, and minimizing contact with chemicals.

Ingestion: It is important to be aware of how this type of exposure can occur even though it is least likely to occur. Forms of ingestion are smoking, drinking, applying cosmetics, and chewing gum or tobacco.

Injection: Chemicals can be introduced into the body through puncture wounds from sharp objects. Prevention is accomplished through wearing safety shoes, avoiding physical hazards, and common sense precautions.

RISKS ASSOCIATED WITH HAZARDOUS SUBSTANCES

Chemical Exposure: Preventing exposure to toxic chemicals is of primary concern. Facilities contain many chemical substances in gaseous, liquid, or solid form. A hazardous chemical can cause damage at the point of contact or can act systematically, causing a toxic effect at a part of the body distant from the point of initial contact. Chemical exposures are generally divided into two categories: acute and chronic. Symptoms resulting from acute exposure usually occur during or shortly after exposure to a sufficiently high concentration of a contaminant. The term chronic exposure generally refers to exposure to low concentrations of a contaminant over a long period of time. Additionally, the effects of exposure depend on the duration of exposure, chemical, concentrations, route of entry, and personal habits (i.e. smoking, medication, and age).

Fire and Explosion: There are many potential causes of fires and explosions with hazardous chemicals. They include chemical reactions, ignition of explosive or flammable chemicals, ignition of materials due

to oxygen enrichment, agitation of shock or friction sensitive compounds, and sudden release of materials under pressure. Fires and explosions may happen spontaneously in situations of moving drums, accidentally mixing incompatible chemicals, and introducing an ignition source (i.e. sparks from equipment). Fires and explosions of hazardous chemicals pose hazards of intense heat, open flames, smoke inhalation, flying objects, release of toxic chemicals, and threatening on-site personnel and the public. Protecting against fires and explosions includes careful monitoring of explosive atmospheres, controlling ignition sources, using non-sparking tools, and following safe work practice procedures.

Oxygen Deficiency: The normal content of oxygen in the atmosphere is 21%. Physiological effects of oxygen deficiency in humans begin to appear when it reaches 16%. Impaired attention or judgment, loss of coordination, and increased breathing and heart rates are signs of oxygen deficiency. Concentrations of oxygen lower than 16% can result in nausea and vomiting, brain damage, heart damage, and death. Concentrations of oxygen of 19.5% or lower are considered to be oxygen deficient. Oxygen deficiency results from displacement from another chemical (chlorine) or consumption of oxygen by a chemical reaction (fire). Confined spaces or low-lying areas are particularly vulnerable to oxygen deficiency and should always be monitored before and continuously during entry.

CONTAINER LABELING

The company will assure that all containers of hazardous chemicals entering the workplace are properly labeled with:

- Identity of chemical
- Hazard warnings
- Name and address of the manufacturer, importer, or responsible party

If the chemical is to be transferred to a separate container that is not for immediate use, the employee will ensure that the new container is properly labeled. (i.e., that all secondary containers are labeled with a copy of the original manufacturer's label or with generic labels which have a block for identity, hazard warning, and the name and address of the manufacturer). Employees will also be informed of the hazards associated with chemicals contained in pipes within the work area.

National Fire Protection Association Labeling System

The NFPA label is diamond shaped and split into four sections. Each section is color-coded and may have a number within the color(s) indicating the level of hazard.

Blue Section: The blue color indicates the potential health hazards of the substance.

- 4- DEADLY
- 3- EXTREME DANGER
- 2- HAZARDOUS
- 1- SLIGHTLY HAZARDOUS
- 0- NORMAL MATERIAL

Red Section: The red color indicates the potential fire hazards of the substance. Flashpoints:

- 4- BELOW 73F
- 3- BELOW 100F
- 2- BELOW 200F
- 1- ABOVE 200F
- 0- WILL NOT BURN

Yellow Section: The yellow color indicates the potential reactivity hazards of the substance.

- 4- MAY DETONATE
- 3- SHOCK & HEAT MAY DETONATE
- 2- VIOLENT CHEMICAL CHANGE
- 1- UNSTABLE IF HEATED
- 0- STABLE

White Section: The white color indicates any specific hazards of the substance.

- OXIDIZER
- ACID
- ALKALI
- CORROSIVE
- USE NO WATER
- RADIATION

MATERIAL SAFETY DATA SHEETS

Material Safety Data Sheets (MSDS's) are the keystone to a successful HCP. MSDS's are designed to provide the necessary information needed to handle chemicals safely. Chemical manufacturers, importers, or distributors supplying the company with products are required by law to send MSDS's with the first shipment.

The company will maintain the MSDS filing system for their operation. Chemical purchases will be checked to be sure a statement requesting an MSDS appears on each purchase request before it is processed. Incoming data sheets will be reviewed for new and significant health/safety information and will ensure that the new information is given to the affected employees and reviewed annually for accuracy and completeness. Additionally, updated MSDS and new MSDS will be immediately placed in the MSDS binder.

Old MSDS linked to an exposure incident will be maintained for at least 30 years. MSDS's for chemicals that are no longer used, and not linked to employee exposure record will be maintained in one of two ways:

- Place the old MSDS in a special file.
- Make a record of the MSDS and maintain it for 30 years.

A current copy of the Hazard Communication Program and the chemical inventory list is always located in each area MSDS binder. New chemicals will not be used until a MSDS has been obtained.

HEALTH & PHYSICAL HAZARD WARNINGS

Because of the increased public awareness during the past decade about possible chemical hazards, various government agencies have taken actions to insure that the employees receive information about potential exposures to chemicals. This information is gained through labels and MSDS's that provide precautionary warnings and identify hazards associated with different substances.

HEALTH HAZARD CLASSIFICATION

- Carcinogen - A substance that has been determined to produce cancer.
- Corrosive - Having the quality of corroding or consuming.
- Highly Toxic - Cause life threatening or seriously disabling health problems.

- Irritant - Not corrosive, but will cause a reversible inflammatory effect on living tissue by chemical reaction at the site of contact.
- Sensitizer - Causes a substantial proportion of exposed employees to develop an allergic reaction in tissue after repeated exposure.
- Toxic - Acting as or having the effect of a poison.
- Target Organ Effects

PHYSICAL HAZARD CLASSIFICATION

- *Combustible Liquid:* Any liquid having a flashpoint at or above 100F (38.8C), but below 200F (93.3C), except any mixture having components with flashpoints of 200F (93.3C), or higher, the total volume which make up 99% or more of the total volume of a mixture.
- *Compressed Gas:* A gas or mixture of gases having, in a container, an absolute pressure exceeding 40 psi at 70F (21.1C), or higher, the total volume of which make up 99% or more of the total volume of mixture, or a gas or mixture of gases having, in a container, an absolute pressure exceeding 104 psi at 130F (54.4C) regardless of the 70F (21.1C), or a liquid having a vapor pressure exceeding 40 psi at 100F (37.8C) as determined by ASTM D-323-72.
- *Explosive:* A chemical that causes a sudden, almost instantaneous release of pressure, gas, and heat when subjected to sudden shock, pressure, or high temperature.
- *Flammable:* Aerosol, Flammable An aerosol that, when tested by the method described in 16 CFR 1500.45, yields a flame projection exceeding 18 inches at full valve opening, or a flashback at any degree of valve opening. Gas, Flammable A gas that, at ambient temperature and pressure, forms a flammable mixture with air at a concentration of 13% by volume or less, or a gas that, at ambient temperature and pressure, forms a range of flammable mixtures with air wider than 12% by volume, regardless of the lower limit. Liquid, Flammable Any liquid having a flashpoint below 100F (37.8C) or higher, the total of which make up 99% or more of the total volume of the mixture. Solid, Flammable A solid, other than a blasting agent or explosive as defined in 1910.109(a), that is liable to cause fire through friction, absorption of moisture, spontaneous chemical change, or retained heat from manufacturing or processing, or which can be ignited readily and when ignited burns so vigorously and persistently as to create a serious hazard. A chemical shall be considered to be a flammable solid if when

tested by the method described in 16 CFR 1500.44, it ignites and burns with a self-sustained flame at a rate greater than one-tenth of an inch per second along its major axis.

- *Organic Peroxide*: An organic compound that contains the bivalent -O-O structure and may be considered to be a structural derivative of hydrogen peroxide where one or both of the hydrogen atoms has been replaced by an organic radical.
- *Oxidizer*: A chemical other than a blasting agent or explosive, as defined in 1910.109(a), that initiates or promotes combustion in other materials, thereby causing fire either of itself or through the release of oxygen or other gases.
- *Pyrophoric*: A chemical that will ignite spontaneously in air at a temperature of 130F (54.4C) or below.
- *Unstable (reactive)*: A chemical which in the pure state, or as produced or transported, will vigorously polymerize, decompose, condense, or will become self-reactive under conditions of shocks, pressure or temperature.
- *Water- Reactive*: A chemical that reacts with water to release a gas that is either flammable or presents a health hazard.

HAZARDOUS MATERIAL PLACARDING

DOT hazardous material placards are diamond shaped and color coded according to the material being transported. The shipper has the responsibility of determining the proper placards to be placed on transportation vehicle. No carrier of hazardous materials may transport the shipment without appropriate placards affixed to the vehicle.

The purpose of the placard is for identification of the hazardous material, and to alert personnel and emergency personnel to the potential dangers associated with the material. The location of the placard on tanker trucks is on the front, side, and back of the vehicle. Rail car placards are located on the sides and trailer placards on the side and back.

BASIC COLOR CODING OF PLACARDS

ORANGE - EXPLOSIVES
RED - FLAMMABLE
RED/WHITE - FLAMMABLE SOLID
YELLOW - REACTIVE
WHITE - POISON
WHITE/BLACK - CORROSIVE

GREEN - NON-FLAMMABLE GAS
DANGEROUS SIGN
YELLOW/WHITE/PROPELLER - RADIO ACTIVE

INTERNATIONAL CLASSIFICATION SYSTEM

Class or division numbers may be displayed in the bottom of placards or in the Hazardous Materials description on shipping papers. In certain cases, A Class or Division number may replace the written name of the hazardous class description on the shipping paper.

Class 1 - Explosives

Division 1.1	Explosives with a mass explosion hazard
Division 1.2	Explosives with a projection hazard
Division 1.3	Explosives with predominantly a fire hazard
Division 1.4	Explosives with no significant blast hazard
Division 1.5	Very intensive explosive articles
Division 1.6	Extremely insensitive explosive articles

Class 2 - Gases

Division 2.1	Flammable gases
Division 2.2	Non-Flammable gases
Division 2.3	Poison gases
Division 2.4	Corrosive gases (Canadian)

Class 3 - Flammable Liquids

Division 3.1	Flashpoint below - 18C (OF)
Division 3.2	Flashpoint - 18C and above but less than 23C (73F)
Division 3.3	Flashpoint of 23C and up to 61C (141F)

Class 4 - Flammable Solids; Spontaneously Combustible Materials; & Materials That Are Dangerous Wet

Division 4.1	Flammable solids
Division 4.2	Spontaneously combustible materials
Division 4.3	Materials that are dangerous when wet

Class 5 - Oxides and Organic Peroxides

Division 5.1	Oxidizers
Division 5.2	Organic peroxides

Class 6 - Poisonous and Etiologic (Infectious) Materials

Division 6.1 Poisonous materials
Division 6.2 Etiologic materials

Class 7 - Radioactive Materials

Class 8 - Corrosives

Class 9 - Miscellaneous Hazardous Materials

EMPLOYEE TRAINING AND INFORMATION

Before starting work, the trainers of new employees will go over their copy of the HCP and each MSDS applicable to their job. The company will use a combination of handouts, videotapes, and classroom presentations to accomplish employee training. Before any new chemical is used, all employees will be informed of its use, will be instructed on safe use, and will be trained on hazards associated with the new chemical. All employees will attend additional training, as appropriate, to review the HCP and MSDS's. Appropriate library reference material will also be discussed during the training sessions.

The minimum orientation and training for a new employee is as follows:

- An overview of the requirements contained in the Hazard Communication Standard, 1910.1200.
- Chemicals present in their workplace operations and this office.
- Location and availability of the written HCP.
- Physical and health effects of hazardous chemicals.
- Methods and observation techniques used to determine the presence or release of hazardous chemicals in the work area.
- How to lessen or prevent exposure to these hazardous chemicals through used of control/work practices and personal protective equipment.
- Steps taken by the company to lessen or prevent exposure to the chemicals listed on the inventory list.

Prior to a new chemical hazard being introduced into any section of the workplace, each employee will be given information and training as outlined. After attending the training class, each employee will sign a form to verify that they attended the training; that the written HCP was

made available for review; and that he/she understands the HCP. If an employee has any questions about what protection they need, they will contact their supervisor immediately.

NON-ROUTINE TASKS

Non-routine tasks are those that are not performed on a frequent basis or those tasks that are not identified as a normal production task. However, many of the tasks required of the maintenance personnel will be evaluated on a case-by-case basis to determine if they are to be considered a non-routine task.

Before any non-routine task is performed, employees shall be advised of special precautions to follow; however, in the event such tasks are required, the company will provide the following information about such activity as it relates to the specific chemicals expected to be encountered:

- Specific chemical name(s) and hazard(s).
- Personal protective equipment required and safety measures to be taken.
- Measures that have been taken to lessen the hazards including ventilation, respirators, presence of other employee(s), and emergency procedures.

WORK PERFORMED BY OUTSIDE CONTRACTORS

It will be the responsibility of the safety director to provide other personnel or outside contractors with the following information:

- Hazardous chemicals to which they may be exposed while in the workplace
- Measures to lessen the possibility of exposure
- Location of MSDS's for all hazardous chemicals
- Procedures to follow if they are exposed

The company will contact each contractor before work is started to gather and disseminate any information concerning chemical hazards the contractor is bringing into the facility. Copies of the MSDSs, or location of the contractors MSDSs will be obtained.

BEE STEEL, INC.

EMERGENCY ACTION PLAN

PURPOSE

The emergency response plan designates safe assembly areas, emergency coordinators, and procedures to follow in emergency situations. Compliance with this emergency response plan is mandatory and is applicable to all employees.

GENERAL REQUIREMENTS

This plan shall address the following information:

1. Responsibilities
2. Notification
3. Evacuation Routes
4. Assembly Points
5. Communications
6. Subcontractors

This plan shall be designed to anticipate the actions required by supervision and employees to minimize dangers to employee's safety and damage to physical equipment or property in the event of an emergency.

Types of hazards that normally would initiate an emergency action plan:

1. Fire & Explosion
2. Release of hazardous gases, vapors, or fumes
3. Significant chemical spill
4. Severe Weather
5. Flood
6. Earthquake
7. Major power outage
8. Bomb threats, sabotage, and illegal activities

9. Radiation emergencies
10. Catastrophic or multiple employee injury

RESPONSIBILITIES

On construction projects a hazard analysis will be performed identifying those areas with potential for initiating the emergency action plan, such as an evacuation, chemical spill, and/or exposure. Each employee shall understand, know how to initiate, and follow the emergency action plan when it is put into effect.

NOTIFICATION

Different notification systems will be used on projects. The company will coordinate the method of notification with the owner, and when possible use the same method, i.e. horn, siren, speaker system, etc. The selected method shall be effective enough that every employee will be notified in the fastest possible manner of the emergency condition. The corporate office shall be immediately notified when an emergency evacuation has taken place.

EVACUATION ROUTES

During the site hazard analysis the primary and secondary evacuation routes shall be determined. They shall represent the safest, most expedient paths from the potential hazard area.

ASSEMBLY POINTS

Each evacuation route shall terminate in an assembly area. This designated area shall be used to take a head count and assure that all employees have evacuated the danger area. No employee shall leave the designated assembly area without the direct permission of the senior company representative.

COMMUNICATIONS

The methods and equipment for communication shall be established in such a manner as to include those emergencies where power outages may occur, as well as command line breakdowns. Personnel issued portable radios shall be briefed in their use as part of the emergency action plan.

SUBCONTRACTORS

The company representative shall closely coordinate the emergency action plan with other contractors, sub-contractors, the owner, and personnel on the project to assure all are aware of the provisions, notifications, evacuation routes, assembly points, etc.

TRAINING

A company representative shall train all employees on the emergency action plan and retraining shall be provided for each employee as necessary so that the employee maintains an understanding and knowledge of the plan. Documentation of training will be kept on file.

BEE STEEL, INC.
LOCKOUT/TAGOUT
THE CONTROL OF HAZARDOUS
ENERGY

PURPOSE

This procedure establishes minimum requirements for locking out and tagging switches, valves, circuit breakers, and other energy controlling devices when their unexpected energizing, start-up, or release of stored energy could cause harm to an employee or damage equipment or machines. It shall be used to ensure that the machine or equipment is isolated from all potentially hazardous energy.

SCOPE

This procedure is applicable on all construction and maintenance projects.

SUMMARY

Accidents involving electrical, mechanical, and/or pressurized equipment and systems have occurred in the construction industry due to incomplete planning of the work or task to be performed (failure to lock and tag out equipment and systems). Work performed on temporary electrical services and pressurized pipelines is equally as important from the standpoint of the use of the lockout/tagout procedure as is permanent plant equipment and systems.

Lockout/Tagout is maintenance oriented and the key to the process of lockout/tagout is the isolation of a machine's energy source so there is not a sudden, unexpected release of stored energy that could injure maintenance personnel and employees. Lockout does not simply mean throwing the machine or equipment in the off position. Placement of a lockout device (lock) on an energy-isolating device (power box lever) prevents operation. Tagout is a form of communication warning employees not to energize the machine or equipment.

DEFINITIONS

Affected Employee means a person whose job requires him/her to operate or use a machine or piece of equipment that is locked or tagged out.

Energized, means connected to an energy source or containing residual or stored energy.

Energy Isolating Device means a mechanical device that physically prevents the transmission or release of energy.

Locks means only locks approved and issued by the company specifically for lockout/tagout procedures. A tag must accompany a lock each time it is used.

Lockout means the placement of a lockout device on an energy-isolating device, in accordance with the established lockout procedure, ensuring that the energy isolating device and equipment being controlled cannot be operated.

Lockout Device, a device that utilizes a positive means such as a lock, either key or combination type, to hold an energy isolating device in the off position and prevents the energizing of a machine or piece of equipment.

Tagout means the placement of a tagout device on an energy-isolating device, in accordance with the established procedure, to indicate that the energy isolating device and machine or equipment being controlled may not be operated.

Tagout Device means a warning device, such as a tag and means of attachment, which can be securely fastened to an energy-isolating device, in accordance with the established procedure, to indicate that the energy isolating device and machine being controlled may not be operated.

Zero Energy State, the protection by isolation, blocking, and/or release of all sources of energy within equipment.

Danger Tag Electric - The tag is attached to a switch, circuit breaker, and other electrical controlling devices to warn others that the equipment and/or system has been isolated (from its power source (de-energized) and that employees are working on the equipment and/or system. The Danger Tag-Electrical placed on equipment and systems is not to be removed by anyone other than the person whose signature is on the tag and the equipment and system is not to be operated with the tags in place.

Danger Tag-Mechanical -The tag is attached to valve handles, all applicable circuit breakers, switches, and other operating mechanisms to prevent manipulation or operation of mechanical equipment and

pressurized systems when work is being performed. It shall also be used to secure valves between operational and non-operational sections of a system. All Danger Tags-Mechanical shall be numbered in sequential order, and the letter M shall identify that the danger tag is to be used for MECHANICAL tagging only.

Caution Tag - may be used to inform personnel of special precautions or instructions relative to safe and proper operation of equipment. This tag is not to be used to prevent equipment and systems from being operated.

REFERENCES

29 CFR 1926.417 - Lockout and Tagging of Circuits

29 CFR 1910.147 - The Control of Hazardous Energy - Lockout/Tagout

RESPONSIBILITY

Only authorized employees who have received instruction and training on lockout/tagout procedures can lockout a piece of equipment and they are referred to as lockout/tagout supervisors. All other employees receive affected personnel training.

FORMS OF HAZARDOUS ENERGY

There are many different types of machinery and equipment used by the company. Energy comes in many forms and can exist in two states, *active* and *stored*. Machinery and equipment used by the company are identified on the master equipment list and discussed individually in the Energy Control Shutdown Forms section of this program. The following are different forms of hazardous energy:

- Electrical
- Compressed Air (Pneumatic)
- Petroleum Fuels (Fuel Lines)
- Gravity (Suspended Components)
- Hydraulic
- Tension
- Chemical
- Thermal (Surface Temperature)

AUTHORIZED EMPLOYEE

The only employees authorized to lock or tag machinery and equipment and remove their locks and tags are personnel who have had specific lockout/tagout training and are authorized by the company. Authorized employees have received information and training on energy sources and stored energy with machinery and equipment used by the company. Machinery and equipment will not be energized without the consent of an authorized employee. Unauthorized removal of locks or tags will be grounds for disciplinary action and/or grounds for termination.

AFFECTED EMPLOYEES

Affected employees are individuals who cannot use machines or equipment for production due to lockout/tagout devices. If the machine, which you frequently use, is to be locked-out for maintenance or repair you will be verbally notified. You will also be notified if you typically use the products of the affected machine (such as materials cut to specific lengths). This will allow you to make other arrangements for obtaining the materials you need to do your work and/or do projects that do not require the affected machine. Do not attempt to restart any machinery or equipment that is locked or tagged. When the machinery or equipment is ready for production the lockout/tagout supervisor will notify affected employees. Do not attempt to remove any energy-isolating device.

LOCKOUT/TAGOUT PROCEDURE

Preparation for Lockout/Tagout - Make sure to locate and identify all isolating devices to be certain which switches, valves, or other energy isolating devices apply to the equipment to be locked out and tagged. More than one energy source may be involved.

Lockout/Tagout Sequence - Each maintenance person working on equipment will have his own lock and the only key to that lock for locking out equipment. The master key to lockout locks is available only to maintenance supervisor and safety director. The following steps will be taken to safely secure a listed machine for servicing and/or repair.

- Notify all affected employees and supervisors that lockout/tagout is required.
- The machine to be serviced/repared will be shut off using the standard operator controls, i.e. off switch, trigger release.
- Disconnect or isolate all energy sources. Some machines are of new construction and contain several safety interlocks. During work on gas, air, oil, acid, steam, and water lines the main valve

will be closed and locked out. (Examples such as Release Tension, Release Compressed Air, Lower Hydraulics Bleed Gas Lines, Unplug Electrical Cords, Remove Spark Plugs, Bleed Hydraulics, Block Suspended Components, Block Rotating Parts, and Insert Blind Flange in Process Pipes)

- Inspect the machine for any sources of *stored energy*. Make sure that nothing in or on the machine will cause any unexpected movement, which may cause any injury to those servicing the machine.
- Lockout/Tagout all energy sources with company locks and tags. When a switching device is encountered that cannot be locked out, a proper tag may be used.
- Each authorized employee involved in the work must lock and tag the main on/off switch. When three or more authorized employees are to work the same job, a lead employee may be appointed to perform the lockout/tagout and only the lead employee is then required to apply locks and tags.
- Attempt to activate the machine by turning the operator switch to the on position. If the machine does not energize return the switch to the off position. If the machine does energize inspect it for the sources of energy and de-energize. Then repeat the attempt to reactivate the machine.
- Once the operator control has been returned to the off position, release the machine as “LOCKED-OUT” and maintenance/repair efforts may proceed.

Lockout/Tagout Authorized Release Sequence - Utilize the following procedures for returning a machine to service.

- Inspect the machine to make sure that no tools, product or other parts have been left on the machine, which may cause a hazard when the machine is re-energized.
- Inspect to make sure that if any operating safety guards have been removed during the servicing/repair process, they are replaced before the machine is energized.
- Clear all employees from the area of the machine, particularly those areas close to or near any moving parts.
- Check to make sure the operator controls are in the off position.
- Remove the lockout security device and re-energize the machine.

- Activate the machine by moving the operator switch to the on position and observing the operation of the machine.
- Switch off the machine and ensure that it ceases operation.
- Notify the affected employee that the machine is available for use.

USE OF TAGS

The standard Danger Tag, Electrical Tag or Mechanical Tag shall be used only for the purpose of identifying a de-energized piece of equipment or system. It is not to be used as a substitute for a defective tag or a caution tag. A Caution Tag is to be used to inform personnel of special precautions or instructions relative to safe and proper operation of equipment. Do not use a Caution Tag to prevent a system or piece of equipment from operating. Only a Danger Tag can be used to prevent the operation of a system or piece of equipment.

The unauthorized removal of a Danger Tag from the controlling device of de-energized system or pieces of equipment shall be grounds for immediate disciplinary action of the involved employee(s). The unauthorized operation of a controlling device of a de-energized system or piece of equipment, which has been tagged-out with a Danger Tag, shall be grounds for immediate termination of the involved employee(s).

EXCEPTIONS

The person installing locks normally removes the locks. Locks may also be removed due to any emergency or when an employee forgets to remove his or her lock at shift or job completion. In these rare occasions the supervisor will be responsible for completing the Emergency Removal of Lock Form and having the lock removed. The following steps are to be taken:

- Attempt to contact the owner of the lock to be removed. He or she can tell you the status of the equipment.
- **Whether the owner is reached or not, inspect the work site and equipment or machine to ascertain if the lock can be removed without endangering employees.**
- If necessary contact a maintenance, electrical, or production employee to help inspect the equipment to be unlocked.

- If you cannot ensure the condition of the machine or equipment is safe, do not release it. Only a member of supervision can have a lock removed.
- **Remove the lock by cutting or other means. This action takes personal responsibility for others' safety. Unauthorized cutting is a mandatory discipline offense.**

PERIODIC INSPECTION

The company will verify that the Lockout/Tagout Program and Procedure is being followed by performing a periodic inspection. The purpose of the inspection is to correct any deviations or inadequacies observed.

ENFORCEMENT

Failure to follow the Lockout/Tagout program can create life threatening or serious injury situations and permitting employees and/or contractors to not follow procedure will result in disciplinary action up to and including discharge.

INFORMATION AND TRAINING

All employees will be informed as to the procedures of the Lockout/Tagout Program at the company upon assuming employment and will be updated during the term of their employment. Information and training topics include the program, responsibilities, how to recognize lockout/tagout hazardous energy, isolation and control, and machinery and equipment lockout procedures.

RECORDS MAINTENANCE

All completed forms will be kept on file. The following forms are included in this program:

- Machine and Equipment Shutdown Forms
- Periodic Inspection Form
- Quizzes & Acknowledgment of Training
- Emergency Removal of Lock Form

BEE STEEL, INC.
RESPIRATORY PROTECTION
PROGRAM

POLICY

The company makes every attempt to provide for a safe and hazard free workplace. This includes managing the quality of the air in the workplace by providing a Respiratory Protection Program. Failure to comply with this or any safety policy of the company, willful tampering, or destruction of any safety equipment provided for your protection, will be grounds for disciplinary action and/or termination.

SUMMARY

The Respiratory Protection Program outlines protection procedures so that personnel can have a complete understanding of the company's, and of their own responsibilities as participants of the program. The proper selection and use of safety equipment, respiratory hazards, record-keeping requirements, fit testing, and information and training according to 29 CFR 1910.134 are covered in this program. In those instances where engineering controls are not feasible respiratory protection will be provided.

DEFINITIONS

Air Purifying Respirator - A device to protect the wearer from inhalation of harmful contaminants by cleansing the atmosphere through mechanical and/or a chemical filtering media.

Exhalation Valve - A device that allows exhaled air to leave the respirator and prevents outside air from entering through the valve.

Immediately Dangerous to Life and Health (IDLH) - Conditions that pose an immediate threat to life or health, or conditions that pose an immediate threat of severe exposure to contaminants which are likely to have adverse cumulative or delayed effects on health.

Inhalation Valve - A device that allows air to enter the face piece of a respirator and prevents exhaled air from leaving the face piece through the intake opening.

Negative Pressure Respirator - A respirator that in the event of a leak would leak contaminated air into the face piece.

Oxygen Deficiency - An atmosphere having less than the percentage of oxygen found in normal air. Normally air contains 21% to 19% oxygen.

Permissible Exposure Limit - The permitted dermal or inhalation exposure to any material as designated by OSHA.

Positive Pressure Respirator (PAPR) - A respirator that supplies air at a positive pressure and in the event of a leak, would leak clean air out of the face piece.

SCBA - Self Contained Breathing Apparatus

Supplied Air Respirator - A device that protects the wearer from inhalation of harmful contaminants.

Threshold Limit Value (TLV) - An airborne concentration of a substance to which nearly all personnel can be repeatedly exposed, day after day, without adverse health effects.

Time Weighted Average (TWA) - The average concentration for a normal 8 hour workday and 40 hour workweek to which nearly all personnel may be repeatedly exposed, day after day, without adverse health effects.

RESPONSIBILITIES

Employees

- Use the appropriate respirator as designated.
- Maintain face condition so as to allow for a good face piece seal.
- Inspect personal respirator before each use.
- Do not wear contact lenses when using any respirator.
- Do not wear eyeglasses when using a full-face respirator.
- Perform positive and negative fit checks prior to use.
- Responsible for assuring that their respirator is kept clean, sanitary and in good working condition.

Management

- Select appropriate respirators and cartridges for use at the facility or job site.
- Provide information, training, and instruction to employees on the selection, use, maintenance, and care of respirators.
- Inspect emergency and non-emergency respirators.
- Fit test employees annually who use respirators.
- Provide cleaning and disinfecting capabilities for respirators.
- Perform evaluations to determine the continued effectiveness of the respirator program.
- Perform workplace and personnel monitoring.
- Fit test employees who use respirators on a quarterly basis.
- Inspect required respiratory protection work area to ensure personnel are wearing protection.

SELECTION OF RESPIRATORS

The effectiveness of personal respiratory protection rests with the proper matching of the protective system to the hazard. Respirators are designed to protect against specific conditions. Using the wrong type of respirator for the conditions in which you are working is the same as not using any protection at all. It is important that you understand this because serious injuries can occur when you think you are protected when you are not. The company will select the proper respiratory protection based on the hazards to which the worker is exposed. The company will make all selections and only MSHA/NIOSH certified respirators would be selected and used. The supervisors and foreman will conduct periodic inspections of the work area to ensure adequate ventilation and hazard free working conditions exist.

RESPIRATOR TYPES

The following respirators will be supplied to employees depending on the appropriate hazard identified:

Dust Masks - Single use disposable dust mask respirators provide protection against non-toxic airborne matter (i.e. dusts, mists)

Chemical Cartridge Respirators - Negative pressure air purifying respirators provide protection against airborne particulate matter. (i.e. organic vapors, alkaline gases, acid gases, pesticides, mists and fumes, radioactive particulate and combinations of the above materials) They include ½ mask with twin cartridges, full-face mask with twin cartridges, and disposable ½ mask units.

Powered Air Purifying Respirators (PAPR) - Positive pressure air purifying respirators supply air to the respirator by positive pressure protecting against particulate and/or gases and vapors. (Full-face mask)

Air Supplied Respirators - Provide protection against oxygen deficient or enriched environments and in situations where high or unknown concentrations of toxic gas, vapors or particulate are present. (SCBA, airline, loose fitting suits, and hoods)

RESPIRATOR DETERMINATION

The selection of respirators for specific jobs or work areas will be based on the following:

- Type of use intended for the respirator
- Toxicological characteristics of the contaminant and the potential for exposure
- Possibility of skin exposure
- Potential of eye irritation from contaminant
- Warning properties of contaminant
- Sorbet characteristics
- IDLH concentrations
- Employee characteristics
- Industrial exhaust which may contain elements other than hot air
- Any painting or adhesive application in a space of inadequate ventilation
- When working with asbestos, silica, or lead
- Or any other identified or suspected hazard at a work site whose primary point of contact is the respiratory system

RESPIRATOR SELECTION GUIDE

The following chart will be used by the safety coordinator as a guide for recommending a respirator for a particular task depending on the potential hazard:

<u>Respirator Type:</u>	<u>Allowable Usage:</u>
½ face respirator (air purifying)	10x the PEL or less
Full face respirator (air purifying)	50x the PEL or less
Positive pressure air purifying respirator (PAPR)	50x-100x the PEL or less
Continuous flow	100x the PEL or less
Pressure demand	1000x the PEL or less
SCBA	> 1000x the PEL

The life expectancy of a respirator cartridge depends on the quantity and size of particles in the atmosphere. Therefore, when there is a change in breathing resistance (i.e. hard to inhale) stop the work activities, leave the respirator zone, and change the cartridge. You should not be able to smell any odors in the work atmosphere when the respirator fits and the cartridge is functioning properly. If you begin to smell odors, stop the work activities, leave the respirator zone, and change the cartridge. If you have any questions ask your supervisor or foreman. (Note: Some chemicals are odorless, therefore, use the breathing resistance factor as a guide for changing cartridges.)

CLEANING & DISINFECTING A RESPIRATOR

A great deal of responsibility and care is assigned to the use and maintenance of respirators as personal protection equipment so that you can be assured that the mask will perform its function every time you use it. Each employee using a respirator must clean and disinfect the unit and change the filter cartridges after each use or as appropriate. The following are basic steps used to clean and disinfect the rubber material of a respirator:

- Wash with warm soap and water
- Rinse in a disinfecting solution
- Rinse thoroughly in clean water
- Air dry

Any respirator not issued to an individual employee (i.e. emergency respirator) should be returned to the safety coordinator for cleaning and disinfecting immediately after use. If you have any questions or problems ask your supervisor or foreman.

LOCATION & PROPER STORAGE OF RESPIRATORS

If you are assigned a task, which requires the use of a respirator, you can obtain one by simply asking your supervisor or foreman to provide you with one. If the mask does not fit properly, request the supervisor or foreman to supply you with another mask.

- Respirators must be stored in a convenient, clean, and sanitary location
- Respirators should be stored so as to prevent any damage or deterioration to the valves and rubber material.
- Respirators should be protected from dust, sunlight, temperature extremes, moisture, and chemicals.
- Emergency use respirators should be kept in emergency storage cabinets.

The respirators can be reused many times and still maintain their filtering effectiveness. Once you have finished your work task examine the respirator for cuts and tears, and disinfect and clean. The respirator will then be resealed in a plastic bag and stored for future use. If you stop using the respirator and wish to continue your task in a short period of time, simply remove it from your face and place it in the plastic bag. The filter cartridges will continue to absorb vapors whether you are wearing the mask or not. That is why it is very important that you reseal the mask in the plastic bag if you wish to wear it again for protection against potential hazards.

INSPECTION OF RESPIRATORS

The respirators are cleaned and inspected on a regular basis. All masks are stored in sealed plastic bags to keep them clean and to ensure the quality of the filter cartridges. Any respirator inspection includes the following:

- Checking tightness of connections and the condition of the face piece, headbands, straps, valves, connecting tubes and hoses, and cartridges/canisters.
- Checking for pliability and signs of deterioration of rubber parts.
- Replacement or repair of worn or defective parts.

A thorough inspection will occur each time respirators are used routinely. All respirators, emergency respirators, including SCBA, will be inspected monthly and after use by the safety coordinator.

MEDICAL SURVEILLANCE

It will be determined medically that an employee is physically able to wear a respirator before that individual is assigned a job requiring the use of a respirator. In addition, once a determination is made as to physical ability to wear a respirator and perform the work task, a review of the employee's health status will be made on an annual basis. The treating physician will determine what medical factors are pertinent, which tests will be performed, such as a pulmonary function test, and ultimately whether or not an employee may wear a respirator. The following information will be obtained from the employee:

- History of respiratory disease, such as, asthma, emphysema, or chronic lung disease.
- Work History, such as, previous exposure to asbestos, silica, cotton dust, beryllium, etc.
- Any other medical information, such as, physical deformities, use of medication, and/or increased heart rate.

The following factors will be evaluated to determine a person's ability to wear a respirator:

Pulmonary/Lungs - Respirator wearers should be examined for any evidence of respiratory problems. The individual may be able to perform work adequately with continuous flow air supplied respirators. Breathing difficulty may not prohibit the wearer of a respirator if the employee is reasonably comfortable using the device, and a proper medical clearance has been obtained.

Pulmonary Function Test - These tests are known as FVC, Forced Vital Capacity, on DLSB, singular-breathing diffusion. There are seven tests, which take about one hour. The employee breaths into a mouthpiece attached to a computer that test for forced vital capacity, tidal breathing, maximum volume ventilation, functional residual capacity, diffusion test, post-dilator study-forced vital capacity, and dilator-maximum voluntary ventilation. These tests are graphed and will show possible asthma, emphysema, and obstruction.

Cardiovascular (Heart & Blood Flow) - The use of air purifying, demand type, or pressure demand supplied air devices may pose serious problems for employees with cardiovascular disease. These employees may be able to use continuous flow respirators with proper medical clearance. Consideration should be given to job assignments.

Psychological Limitations - Not clearly defined, some psychological limitations may prevent employees from wearing a respirator, such as paranoia to enclosed places. Consult a physician for advice in these situations.

Facial Limitations - Facial deformities, dentures, or excessive facial hair may prohibit wearing certain types of respirator face pieces or mouthpieces. These situations prohibit the correct seal of a respirator to the face. Excessive facial hair is more than 24-hour growth.

SURVEILLANCE OF WORK CONDITIONS

The supervisors or foremen will conduct personnel and work site inspections on a routine basis to help determine the adequacy of protective equipment. Where respirators are currently in use and where exposure levels have not been documented, conservative estimates of employee potential exposure and equipment requirements will be made. In some situations, industrial hygiene monitoring will be conducted to evaluate the level of potential contaminants. The surveillance of work conditions will consist of the following:

- Identification of the substance that may cause employee exposure.
- Whether feasible engineering controls are or can be provided to reduce or eliminate exposure.
- The estimated average and potential maximum exposure concentration on a time weighted average (TWA) basis that can be reasonably expected for normal operation. This estimate will be based on an 8 hour daily exposure and include the sum of exposure during routine operation, handling, and preparation of substances used. This estimate will be made using the best information available and will include results of industrial hygiene monitoring. The estimate will be made for each job classification.
- The estimated peak exposures that can be expected from any short-term exposure. As an example during clean up and maintenance operations.
- The location in the operation, type of respirator required, and other personal protective equipment.
- Frequency of periodic monitoring to be conducted. The periodic reviews of airborne contaminants are made to ensure employee protection and meet regulatory compliance. This review includes air sampling, process and work practice, raw materials, intermediates, product review, engineering controls, and emergency procedures.

EMERGENCY RESPIRATORY PROTECTION

Emergency escape conditions have the potential for unexpected and rapid release of dangerous concentrations of gases or vapors. There are three conditions for which respirators are used in emergency situations:

- Employees self rescue when process excursions, spills, etc., create a sudden potentially hazardous environment.
- For the rescue of personnel trapped or overcome in a hazardous environment.
- To shut down or repair an operation that is creating a hazardous environment.

RESPIRATORY PROTECTION PROGRAM REVIEW

The safety coordinator will perform annual evaluations of the respiratory protection program to ensure the continued effectiveness of the program. This evaluation will address at a minimum:

- Employee motivation and subjective evaluation.
- Actual usage of respirators.
- Written program versus actual program.
- Modifications necessary to the program due to changes in operation, technology advances, or regulatory revisions.

RECORDS MAINTENANCE

All records that are generated from the respiratory protection program are located at the corporate office. Any records generated at a particular site will be kept on file with the site superintendent. The following records will be maintained:

- Industrial hygiene monitoring (if available)
- Medical surveillance and job assessment data
- Respirator information and training acknowledgment form
- Fit test records
- Emergency equipment inspection/maintenance tags
- Respirator monthly inspection form

INFORMATION-INSTRUCTION-TRAINING

On an annual basis, the company will provide training to all applicable personnel required to wear a respirator as part of their job. Respirator training will consist of the following elements:

- An explanation of the nature of the hazards that may be present.
- An explanation as to why respirators are required.
- A discussion of the use of respirators and the proper selection processes, including supplied air respirators.
- A discussion of the capabilities and limitations of the respirator to be used.
- A discussion of the use of respirators in emergency situations.
- A discussion of the care, inspection, and maintenance procedures for the respirator.
- Familiarization with areas and times respirators must be worn at the facility or work site.
- Each individual will be given the opportunity to handle and wear the respirator in normal air for a familiarization period.
- Each individual will be fitted with a respirator.
- Each individual will be taught two methods for testing the seal of the respirator.

Records of the annual training will be retained at the corporate office for a period of five years. Fit testing records will be retained until a more current record is available. On a quarterly basis, the respirator wearer must demonstrate to their supervisor/foreman the ability to properly put on a respirator, select the correct cartridge/canister, and dispose of a used cartridge/canister. Any employee who fails to demonstrate compliance with those items listed above to their supervisor/foreman will be retrained.

AIR SUPPLIED RESPIRATORS

Breathing air used by employees will be at least Grade D air at a minimum. Grade D air must:

- Be at least 19.5% oxygen but no more than 23.5%
- Have < 5mg/m³ of hydrocarbons
- Have < 20 ppm CO
- Have < 1000 ppm CO₂
- Have no unusual odor

Breathing air used by employees may be supplied to respirators from cylinders or air compressors or through air filtering devices designed to purify plant air.

All breathing air cylinders will be tested and maintained as prescribed in the Shipping Container Specification Regulations of the Department of Transportation (401 CFR Part 178).

Breathing air containers will be marked accordingly.

All airline couplings shall be incompatible with outlets for other gas systems.

RESPIRATOR FIT TESTING

Anyone assigned a job in which a respirator may be worn will be fit tested to determine whether a particular size and brand of respirator provides a satisfactory seal against the face. This determination will be made using a qualitative fit test method.

- The individual to be fit tested is asked to don the respirator and wear it for a familiarization period prior to the actual fitting. When the familiarization period is over the individual will be fitted.
- A sufficient quantity of the qualitative test solution will be generated near the respirator wearer. The individual will then perform a series of head, face, body movements, and acknowledge whether any irritation is perceived.
- When an individual is successfully fitted with a respirator, the brand, size, and type of respirator will be recorded. The date the fitting was conducted; the signature of the individual who conducted the fitting, and the signature of the individual fitted will also be recorded.

- The employee will then be apprised of the necessary information so that he/she may obtain the correct respirator.

FIELD POSITIVE-NEGATIVE FIT TEST

As part of the fit test portion of respirator training and a field fit check, the individual is taught to perform two field fit check methods to determine if the respirator is fitting each time it is donned. These two methods are:

Negative Pressure Test - Performed by closing off the inlet valves to the respirator, inhaling gently, and briefly holding the breath. Collapse of the face piece indicates a good fit.

Positive Pressure Test - Performed by closing off the exhalation valve, and exhaling gently. If a slight positive pressure builds up in the face piece (respirator puffs outward), a good fit is indicated.

Note: In order to be fit tested, the individual must pass a physical exam as described in the medical surveillance section of this program. The employee must be fit tested in each type of respirator to be worn on the job (i.e. ½ face and full face). This does not apply to disposable respirators (dust mask) or positive pressure respirators.

BEE STEEL, INC.
FALL PROTECTION
PROGRAM

PURPOSE

To provide guidelines to ensure the safety of all employees that may be exposed to fall hazards.

SCOPE

This procedure applies to all divisions and on-site construction and maintenance projects, including contractors under contract with the company.

DEFINITIONS

100% Fall Protection means workers six feet above the floor or ground level shall be protected from the possibility of a fall hazard that could result in injury or death.

Anchorage means a secure point of attachment for lifelines, lanyards, or deceleration devices, which is capable of withstanding the forces specified in this procedure.

Approved means for the purpose of this section, tested and certified by the manufacturer, or any recognized national testing laboratory, possess the strength requirements specified in this section.

Full Body Harness means a configuration of connected straps to distribute a fall arresting force over at least the thighs, shoulders and pelvis, with provisions for attaching a lanyard, lifeline, or deceleration devices.

Competent Person means an individual knowledgeable of fall protection equipment, including the manufacturer's recommendations and instructions for proper use, inspection, and maintenance, and who is capable of identifying existing and potential fall hazards. This person has the authority to take prompt corrective action to eliminate those hazards, and is knowledgeable of the rules contained in this section regarding the erection, use, inspection and maintenance of fall protection equipment and systems.

Continuous Fall Protection means the design and use of a fall protection system such that no exposure to an elevated fall hazard exists. This may require more than one fall protection system or a combination of protective measures.

Control Zone means the area between the warning line and the unprotected sides and edges of a building/structure floor or roof surface.

Deceleration Device means any mechanism, such as a rope grab, rip stitch lanyard, specifically woven lanyard or automatic self-retracting lifeline (yo-yo), which serves to dissipate more energy during a fall arrest than does a standard line or strap webbing lanyard.

Fall Arrestor System means the use of multiple, approved safety equipment components such as, body harness, lanyards, deceleration devices, drop lines, horizontal and/or vertical lifelines and anchorages, interconnected and rigged as to arrest a free fall. Compliance with anchorage strength requirements specified in the applicable sections of OSHA or state regulations shall constitute approval of the anchorage.

Fall Protection Work Plan means a written document in which the employer identifies all areas on the job site where a fall hazard of 6 feet or greater exists. The plan describes the method or methods of fall protection to be utilized to protect employees, and includes the procedures governing the installation, use, inspection, and removal of the fall protection methods, which are selected by the employer.

Fall-Restraint System means an approved device and any necessary components that function together to restrain an employee in such a manner as to prevent that employee from falling to a lower level. When standard guardrails are selected, compliance with applicable sections governing their construction and use shall constitute approval.

Hardware means snap hooks, D-rings, buckles, carabineers, adjusters, and O-rings, that are used to attach the components of a fall protection system together.

Horizontal Lifeline means a rail, wire rope, or synthetic rope that is installed in a horizontal plane between two anchorages and used for attachment of a worker's lanyard or lifeline device while moving horizontally; used to control dangerous pendulum like swing falls.

Lanyard means a flexible line of webbing, rope, or cable used to secure a safety harness to a lifeline or an anchorage point usually 2, 4, or 6 feet long.

Leading Edge means the advancing edge of a floor, roof, or formwork that changes location as additional floor, roof, or formwork sections are placed, formed, or constructed. Leading edges not actively under construction are considered to be “unprotected sides and edges” and positive methods of fall arrest or fall restraint shall be required to protect exposed workers.

Lifeline means a vertical line from a fixed anchorage or between two horizontal anchorages, independent of walking or working surfaces, to which a lanyard or device is secured. Lifeline as referred to in this text is one that is part of a fall protection system used as back-up safety for an elevated employee.

Locking Snap Hook means a connecting snap hook that requires two separate forces to open the gate; one to deactivate the gatekeeper and a second to depress and open the gate which automatically closes when released; used to minimize roll-out or accidental disengagement.

Low-Pitched Roof means a roof having a slope equal to or less than 4/12 pitch.

Positioning Belt means a single or multiple straps that can be secured around the employee’s body to hold the user in a work position; for example, a lineman’s belt, a rebar belt, or saddle belt.

Restraint Line means a line from a fixed anchorage or between two anchorages to which an employee is secured in such a way as to prevent the worker from falling to a lower level.

Roll-Out means unintentional disengagement of a snap hook caused by the gate being depressed under torque or contact while twisting or turning, a particular concern with single-action snap hooks that do not have a locking gatekeeper.

Rope Grab means a fall arrester that is designed to move up or down a lifeline suspended from a fixed overhead or horizontal anchorage point, or lifeline, to which the belt or harness is attached. In the event of a fall, the rope grab locks onto the lifeline rope through compression to arrest the fall. The use of a rope grab device is restricted for fall restraint applications.

Safety Monitor System means a system of fall restraint used in conjunction with a warning line system only, where a competent person as defined by this part, having no additional duties, monitors the proximity of

employees to the fall hazard when working between the warning line and the unprotected sides and edges, including, the leading edge of a low pitched roof or walking/working surface.

Self-Retracting Lanyard means a deceleration device which contains a drum-wound line which may be slowly extracted from, or retracted onto, the drum under slight tension during normal employee movement, and which after onset of a fall, automatically locks the drum and arrests the fall.

Shock Absorbing Lanyard means a flexible line of webbing, cable, or rope used to secure a body belt or harness to a lifeline or anchorage point that has an integral shock absorber.

Snap Hook means a self-closing connecting device with a gatekeeper latch or similar arrangement that will remain closed until manually opened. This includes single action snap hooks that open when the gatekeeper is depressed and double action snap hooks that require a second action on a gatekeeper before the gate can be opened.

Steep Roof means a roof having a slope greater than a 4/12 pitch.

Unprotected Sides & Edges means any sides or edges (except at entrances to points of access) of a floor, roof, ramp or runway where there is no wall or guardrail system as defined in this section.

Walking/Working Surface means for the purpose of this section, any area whose dimensions are 45 inches or greater in all directions, through which employees pass or conduct work.

Warning Line System means a barrier erected on a walking and working surface or a low pitch roof (4/12 or less), to warn employees that they are approaching an unprotected fall hazard(s).

REFERENCES

29 CFR 1926.21 - 28 - 500 - 750

PROCEDURE

Prior to the start of work construction management shall make an initial survey of the types of fall hazards that are expected to be encountered and develop a plan relative to providing the kind and number of safe guards that shall protect against these fall hazards.

Project construction management shall develop and implement a written fall protection work plan including each area of the work place where the employees are assigned and where fall hazards of 6 feet or more exist. It is recommended that the written plan be upgraded every month. The fall protection work plan shall:

- Identify all fall hazards in the work area as the project work progresses.
- Describe the method of fall arrest or fall restraint to be provided.
- Describe the correct procedures for the assembly, maintenance, maps on, and disassembly of the fall protection system to be used.
- Describe the correct procedures for the handling, storage, and securing of tools and materials.
- Describe the method of providing overhead protection for workers who may be in, or pass through the area below the work site.
- Be available on the job site for inspection.
- Ensure that employees are trained and instructed.
- Inspect fall protection devices and systems to ensure compliance with applicable parts of this procedure.
- Training of employees as required by this section shall be documented and shall be available on the job site.

FALL RESTRAINT & FALL ARREST SYSTEMS

When employees are exposed to a hazard of falling from a location six feet or more in height, construction management shall ensure that fall restraint or fall arrest systems are provided, installed, and implemented according to the following requirements. Fall restraint and arrest protection shall consist of:

Standard Guardrails

- Top rail 39 to 45 inches above the working surface, and must be smooth and of a shape to permit grasping easily.
- Mid-rail (center between riser and top rail), screen or mesh (continuous) or intermediate vertical members (not more than 21 inches apart) shall be provided between the top rail and working surface.
- The top-rail shall be capable of supporting 200 pounds in the downward or outward direction.

- Mid-rail shall support a 150-pound load in the downward or outward direction.
- Top rails and mid-rails shall be at least 1/4-inch nominal thickness. (Plastic or steel banding shall not be used.)
- Chain gates shall be used to cover hoisting areas, and the guardrails shall extend 4 feet minimum on either side of the opening.
- Rails shall be so constructed so as not to deflect under test loads. If cable or rope is used it shall have tension adjusting capability and remain taut at all times.
- Pipe Railings: Post, top rails, and intermediate railings shall be at least one and one-half inches nominal diameter (schedule 40 pipe) with posts spaced not more than 8 feet (2.4 m) apart on centers.
- Structural Steel Railings: Posts, top rails, and intermediate rails shall be at least 2-inch by 2-inch (5 cm x 10 cm) by 3/8-inch (1.1 cm) angles, with posts spaced not more than 8 feet (2.4 m) apart on centers.

Harness, Lanyards, Lifeline & Anchor Points

- An approved full body harness shall be used.
- All full body harness and lanyard hardware assemblies shall be capable of withstanding a tensile load of 4,000 pounds without cracking, breaking, or taking a permanent deformation.
- Anchorage points used for fall restraint shall be capable of supporting four (4) times the intended load.
- Restraint protection shall be rigged to allow the movement of employees only as far as the sides and edges of the walking/working surface.
- Rope grab devices are prohibited for fall restraint applications unless they are part of a fall restraint system designed specifically for the purpose by the manufacturer and used in strict accordance with the manufacturer's recommendations and instructions.
- Body harness system or components subject to impact loading shall be immediately removed from service and shall not be used again for employee protection unless inspected and determined by a competent person to be undamaged and suitable for reuse.
- All safety lines and lanyards shall be protected against being cut or frayed.

- Body harness system shall be rigged to minimize a free fall distance with a maximum free fall distance allowed of 6 feet, and such that the employee will not contact any lower level.
- When vertical lifelines (drop lines) are used, not more than one employee shall be attached to any one lifeline.
- Full body harness systems shall be secured to anchorages capable of supporting 5,000 pounds per employee except when self-retracting lifelines or other deceleration devices are used which limit free fall to two feet; anchorages shall be capable of withstanding 3,000 pounds.
- Independent lifelines (drop lines) shall have a minimum tensile strength of 5,200 pounds, except that self-retracting lifelines and lanyards that automatically limit free fall distance to two feet or less shall have a minimum tensile strength of 3,000 pounds.
- Horizontal lifelines shall have a tensile strength capable of supporting a fall impact load of at least 5,200 pounds per employee using the lifeline, applied anywhere along the lifeline.
- Lanyards shall have a minimum tensile strength of 5,200 pounds.
- All components of body harness systems whose strength is not otherwise specified in subsection in this section shall be capable of supporting a minimum fall impact load of 5,000 pounds applied at the lanyard point of connection.
- Snap-hooks shall not be connected to loops made in webbing-type lanyards or be connected to each other. Not more than one snap-hook shall be connected to any one D-ring.
- Independent lifelines used on rock-scaling operations, or in areas where the lifeline may be subjected to cutting or abrasion, shall be a minimum of 7/8-inch wire core manila rope. For all other lifeline applications, a minimum of 3/4-inch manila or equivalent, with a minimum breaking strength of 5,000 pounds, shall be used.
- Safety harnesses, lanyards, lifelines, independently attached or attended, shall be used while performing the following types of work when other equivalent type protection is not provided. Work in hoppers, bins, silos, tanks, or other confined spaces, work on hazardous slopes, or dismantling safety nets, working on poles or from boatswains chairs at elevations greater than six feet, swinging scaffolds or other unguarded locations, and work on skips and platforms used in shafts by crews when the skip or cage does not include the opening to within one foot of the sides of the shaft, unless cages are provided.

- Full body harness systems shall be inspected prior to each use for mildew, wear, damage, and other deterioration and defective components shall be removed from service if their function or strength has been adversely affected.

Safety Nets

- Safety nets shall be installed as close as practicable under the walking/working surface on which employees are working, but in no case more than 10 feet below such levels.
- Safety nets shall extend outward at least 8 feet from the outermost projection of the work surface.
- Safety nets shall be installed with sufficient clearance under them to prevent contact with the surface or structures below when subjected to an impact force equal to the drop test specified in the Full Body Harness section.
- Safety nets and their installations shall be capable of absorbing an impact force equal to that produced by the drop test specified in the Full Body Harness section.
- Safety nets and safety net installations shall be drop-tested at the job site before used as a fall protection system. The drop-test shall consist of a 400-pound bag of sand 30+2 inches in diameter dropped into the net from the highest walking/working surface on which employees are to be protected. (Exception: The net installation shall be in compliance and certified by a qualified person when the employer can demonstrate that a drop-test is not feasible or practicable.)
- Safety nets shall be inspected weekly for mildew, wear, damage, and other deterioration, and defective components shall be removed from service.
- Materials, scrap pieces, and tools which have fallen into the safety net shall be removed as soon as possible from the net and at least before the next work shift.
- The maximum size of each safety net mesh opening shall not exceed 36 square inches nor be longer than six inches on any side measured center-to-center of mesh ropes or webbing. All mesh crossing shall be secured to prevent enlargement of the mesh opening.
- Each safety net (or section of it) shall have a border rope for webbing with a minimum breaking strength of 5,000 pounds.

- Connections between the safety net panels shall be as strong as integral net components and shall be spaced not more than six inches apart.

Catch Platforms

- A catch platform shall be installed within ten vertical feet of the work area.
- The catch platform's width shall equal the distance of the fall but shall be a minimum of 45 inches wide and shall be equipped with standard guardrails on all open sides.

GUARDING OF LOW-PITCHED ROOF PERIMETERS

During the performance of work on low pitched roofs with a ground to eaves height greater than 6 feet, project management shall ensure that employees engaged in such work be protected from falling from all unprotected sides and edges of the roof. Fall protection systems for low-pitched roofs include, but are not limited to:

- Fall restraint or fall arrest system.
- Warning line system erected and maintained for employees working between the warning line and the roof edge by the use of a safety monitor system as described in 29 CFR 1926.500. (Mechanical equipment may not be used or stored where the only protection is provided by the use of a safety monitor.)
- Employees engaged in built-up roofing on low-pitched roofs less than 50 feet wide may elect to utilize a safety system without warning.

WARNING LINES SYSTEMS & ACCESS PATHS

Warning line and safety monitor systems as described in 29 CFR 1926.500 are prohibited on surfaces exceeding a 4/12 pitch, and on any surface whose dimensions are less than 45 inches in all directions.

When mechanical equipment is not being used, the warning line shall be erected not less than four feet from the edge of the roof. When mechanical equipment is being used, the warning line shall be erected not less than ten feet from the roof edge which is parallel to the direction of mechanical equipment operation, and not less than 10 feet from the roof edge which is perpendicular to the direction of mechanical equipment operation.

The Warning Line

- The warning line shall consist of a rope, wire, or chain with a minimum tensile strength of 500 pounds and supporting stanchions.
- The rope, wire, or chain shall be flagged at not more than six feet intervals with high-visibility material.
- The rope, wire, or chain shall be rigged and supported in such a way that its lowest point (including sag) is no less than 34 inches from the roof surface and its highest point is no more than 39 inches from the roof surface.
- After being erected, with the rope, wire or chain attached, stanchions shall be capable of resisting, without tipping over, a force of at least 16 pounds applied horizontally against the stanchion, 30 inches above the roof surface, perpendicular to the warning line, and in the direction of the roof edge.
- The rope, wire, or chain shall have a minimum tensile strength of 500 pounds, and after being attached to the stanchions, shall be capable of supporting, without breaking, the loads applied to the stanchions.
- The line shall be attached at each stanchion in such a way that pulling of one section of line between stanchions will not result in slack being taken up in adjacent sections before the stanchion tips over.

Access Paths

Points of access, materials handling areas, and storage areas shall be connected to the work area by a clear access path formed by two warning lines. When the path to a point of access is not in use, a rope, wire or chain, equal in strength and height to the warning line, shall be placed at the point where the path intersects the warning line erected around the work area.

ROOF EDGE MATERIAL HANDLING AREAS

Employees working with a ground to work area height greater than four feet shall be protected from falling along all unprotected roof sides and edges of the area.

- When guardrails are used at hoisting areas, a minimum of four feet of guardrail shall be erected on each side of the access point through which materials are hoisted.

- A chain or gate shall be placed across the opening between the guardrail sections when hoisting operations are not taking place.
- When guardrails are used at bitumen pipe outlets, a minimum of four feet of guardrail shall be erected on each side of the pipe.
- When safety harness systems are used, they shall not be attached to the hoist.
- Materials shall not be stored within ten feet of the roof edge unless guardrails are erected at the roof edge.

LEADING EDGE CONTROL ZONE

When performing leading edge work, construction management shall ensure that a control zone be established according to the following requirements:

- The control zone shall begin a minimum of ten feet back from the leading edge to prevent exposure by employees who are not protected by fall restraint or fall arrest systems.
- The control zone shall be separated from other areas by the erection of a warning line system.

SAFETY MONITOR SYSTEM

When positive means of fall protection as described in OSHA are not utilized, a safety monitor system as described in 29 CFR 1926.500 (g)(iii) shall be implemented to protect employees working between the forward edge of the warning line and the leading edge.

A safety monitor system may be used in conjunction with a warning line system as a method of guarding against falls during work on low-pitched roofs and leading edge work only. In addition, the safety monitor system shall not be used in adverse weather conditions. A person acting in the capacity of a safety monitor shall be trained in the function of both the safety monitor and warning lines systems.

Safety Monitor Requirements & Responsibilities

- The safety monitor shall be a competent person as defined in 29 CFR 1926.32(f).
- Have control authority over the work as it related to fall protection.

- Be instantly distinguishable over members of the work crew.
- Engage in no other duties while acting as safety monitor.
- Be positioned in relation to the workers under their protection, so as to have a clear, unobstructed view and be able to maintain normal voice communication.
- Not supervise more than eight exposed employees at one time.
- Control zone workers shall be distinguished from other members of the crew by wearing a high visibility vest only while in the control zone.

PROTECTION FROM FALLING OBJECTS

When an employee is exposed to falling objects (overhead hazards), hard hats shall be mandatory on the job site and one of the following measures shall be implemented:

- Erect toe boards, screens, or guardrail systems to prevent objects from falling from higher levels.
- 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 displaced.
- Barricade the area to which objects could fall, prohibit employees from entering the barricaded area, and keep objects that may fall far enough away from the edge of a higher level so that those objects would not go over the edge if they were accidental displaced.

TRAINING & INFORMATION

Any employee who might be exposed to fall hazards will be provided with training and information. The training program enables each employee to recognize the hazards of falling and the procedures to follow in order to minimize these hazards. The following topics are included in the fall protection-training program:

- The fall protection standards.
- The nature of fall hazards in the work area.
- The correct procedures for erecting, maintaining, disassembling, and inspecting fall protection systems to be used.

- The use and operation of protection methods being used (guardrail systems, personal fall arrest systems, safety net systems, warning line systems, safety monitoring systems, controlled access zones, and other protection to be used).
- The role of each employee in the safety monitoring system when it is used. The limitations on 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.

All fall protection training is documented on a training certification record. Training and retraining shall be conducted on an as needed basis.

BEE STEEL, INC.

CONFINED SPACE PROGRAM

PURPOSE

This procedure establishes safe practices for entering and/or working in confined spaces that may be hazardous to employees.

SCOPE

This procedure applies to all company divisions, on-site construction and maintenance projects.

REFERENCES

29 CFR 1926.21 and 352
29 CFR 1910.134 and 146

RESPONSIBILITY

When appropriate, the company will develop a written site-specific confined space procedure, complete training of all personnel required to work in confined space operations and monitor and administer this procedure.

INTRODUCTION

Confined spaces may contain many safety and health hazards. They may include, but are not limited to: asphyxiation (unconscious or lack of oxygen), falls, burns, engulfment, chemical exposure, job function.

Following confined space procedures and safe work practices are essential to protect your health and safety. The goal is to control confined space environments and prevent accidents that could lead to injury and death. If you have a question about a confined space, ask your supervisor.

Most fatalities and injuries occur because employees are unaware of the potential hazards in confined spaces. Confined space entry can present many health and safety hazards. Personnel must be properly equipped to handle these situations. Millions of workers enter confined spaces each year and some of those never make it out alive. More than half of confined space deaths and accidents result from situations when a person rushed in to rescue a fellow employee, and they were not prepared or protected.

The objective of this program is to inform company employees to follow safe entry procedures and develop a respect for potential hazards in confined spaces. Serious consequences can result from the use of untrained personnel or failure to observe safe work practices. The goal is to eliminate accidents caused by confined space entry hazards.

DEFINITIONS

Confined Space means any space having a limited entrance or egress that is subject to the accumulation of toxic or flammable contaminants or the development of an oxygen deficient atmosphere. Confined spaces include, but are not limited to, storage tanks, bins, boilers, ventilation or exhaust ducts, sewers, underground utility vaults, tunnels, pipelines, and open top spaces more than four feet in depth, such as pits, tubs, vaults, and vessels.

Hazardous Atmosphere means an atmosphere that exposes employees to a risk of death, incapacitation, injury or acute illness. One or more of the following conditions may contribute to a hazardous atmosphere:

- An atmospheric oxygen concentration below 19.5 percent (an oxygen deficient atmosphere) or above 22.0 percent (an oxygen enriched atmosphere), by volume.
- A flammable gas, vapor, or mist in excess of 10 percent of its Lower Explosive Limit (LEL).
- A hydrogen sulfide gas concentration above 2 parts per million.
- A carbon monoxide gas concentration above 25 parts per million.
- An airborne combustible dust at a concentration that obscures vision at a distance of five feet or less.
- Presence of any substance in an atmospheric concentration above the Permissible Exposure Limits (PEL) published in Subpart Z of 29 CFR 1910.1000. If a contaminant is not published in Subpart Z consult Material Safety Data Sheets or other authoritative sources.
- Any atmospheric condition recognized as Immediately Dangerous to Life or Health (IDLH).

Chemical means any element, chemical compound or mixture of elements or compounds that include: *Liquids, Solids, and Gases*.

Material Safety Data Sheet (MSDS) means written/printed information concerning a hazardous chemical that is prepared in the format required by the OSHA standard.

Label means any written, printed or graphic sign or symbol displayed on or affixed to containers of hazardous chemicals. A label identifies the hazardous chemical, appropriate hazard warnings, and name and address of the manufacturer, importer, or other responsible party, and information about possible organ effects.

Health Hazard means a chemical, mixture of chemicals, or a pathogen for which there is statistically significant evidence based on at least one study conducted in accordance with established scientific principles that acute or chronic health effects may occur in exposed employees.

Physical Hazard means a physical hazard that includes fire or explosion, sudden release of pressure, or reactivity.

Immediately Dangerous to Life and Health (IDLH) is an atmospheric concentration of any substance that poses an immediate threat to life or would cause irreversible or delayed adverse health effects or would interfere with an individual's ability to escape from a dangerous atmosphere.

Permissible Exposure Limit (PEL) means the dermal or inhalation exposure limit.

Air Purifying Respirator is a device to protect the wearer from inhalation of harmful contaminants by cleansing the atmosphere through a mechanical and/or a chemical filtering media.

Oxygen Deficiency - An atmosphere having less than the percentage of oxygen found in normal air. Normally air contains 21% oxygen.

Threshold Limit Value (TLV) - An airborne concentration of a substance to which nearly all personnel can be repeatedly exposed, day after day, without adverse health effects.

Time Weighted Average (TWA) - The average concentration for a normal 8 hour workday and 40 hour workweek to which nearly all personnel may be repeatedly exposed, day after day, without adverse health effects.

CONFINED SPACES

A confined space is an enclosed area which:

- Is not designated for continuous occupancy.
- Is large enough and shaped so that a person can enter and perform assigned work.

- Has limited openings for entry or exit (storage tanks, silos, boilers, tanks, vessels, tunnels, vault, pipelines).
- Lacks natural ventilation.
- May contain one or more of the following: atmospheric hazards (lack of oxygen or presence of toxic vapors) potential for engulfment (silo), and chemical residue.
- All confined spaces should be marked with a sign, placard or permit. *If you have a question about a potential confined space ask your supervisor or foreman.*

NON-PERMIT REQUIRED CONFINED SPACE

- Non-permit confined spaces may exist where there is little potential for generation of hazards.
- Ensure air ventilation from clean source.
- Determine if work activities will produce hazards.
- The space must be monitored/atmospheric testing.
- If a space is deemed non-permit, entry may occur.

PERMIT REQUIRED CONFINED SPACE

- Permit required confined spaces might have a hazardous atmosphere.
- Potential for engulfment.
- Internal configuration leading to entrapment or asphyxiation
- Any other serious safety or health hazard.

CONFINED SPACE ATMOSPHERIC HAZARDS

One of the leading causes of injuries and deaths in confined spaces is an atmospheric hazard. Atmospheric hazards are caused by poor ventilation and can lead to asphyxiation. Workers rushing into confined spaces to rescue employees without proper protection leads to multiple deaths. That is why knowing the atmosphere hazard of a confined space is so important in preventing injuries and deaths. Atmospheric hazards include the following:

FLAMMABLE GAS-VAPORS-MISTS LEVELS

The inhalation of toxic vapors is a leading cause of injury and death in confined spaces. Toxic vapors immediately enter the blood stream when inhaled. *Never stick your head in a confined space to check things out.* Many gases and vapors are heavier than air and higher concentrations may be greatest at ground level. In addition, some gases and vapors can travel long distances across the ground ending up in low-lying areas.

The *Permissible Exposure Limit (PEL)* of any substance in the atmosphere must be within the limit set by the federal regulations. The PEL of a substance is the permitted dermal or inhalation level of that substance. This information can be obtained from the material safety data sheet (MSDS).

The *Lower Flammable Limit (LFL)* of any substance cannot be greater than 10% of the limit set by federal regulations. The LFL means the minimum concentration of the flammable material that ignites if an ignition source (spark) is present. Under some conditions it might be necessary to use explosion proof lighting or spark resistant tools in a confined space. This information can be obtained from the MSDS.

There are many potential causes of fires and explosions with hazardous chemicals. They include chemical reactions, ignition of explosive or flammable chemicals, ignition of materials due to oxygen enrichment, agitation of shock or friction sensitive compounds, and sudden release of materials under pressure. Fires and explosions may happen spontaneously when moving drums, accidentally mixing incompatible chemicals, introducing an ignition source. Fires and explosions of hazardous chemicals pose hazards of intense heat, open flames, smoke inhalation, flying objects, release of toxic chemicals, and threatening both on-site personnel and the public. Protecting against fires and explosions includes careful monitoring of explosive atmospheres, controlling of ignition sources, use of non-sparking tools, and following of safe work practice procedures.

AIRBORNE COMBUSTIBLE DUST LEVELS

Potentially hazardous dust exposure can occur in certain operations. Employee overexposure to airborne dust could present possible health problems. As a rule of thumb, if a material in the air capable of igniting and burning that is at concentrations where vision is limited to five foot or less, the area is not safe. Consult the MSDS for information pertaining to dust characteristics.

OXYGEN LEVELS

The normal content of oxygen in the atmosphere is 21%. Physiological effects of oxygen deficiency in humans begin to appear when it reaches 16%. Impaired attention, judgment, loss of coordination, and increased breathing and heart rates are signs of oxygen deficiency. Concentrations of oxygen lower than 16% can result in nausea and vomiting, brain damage, heart damage, and death. Oxygen Deficiency means concentrations of oxygen are 19.5% or lower. Oxygen deficiency results from displacement from another chemical (ex. chlorine, CO₂) or consumption of oxygen by a chemical reaction (ex. fire, hot work). *Confined spaces or low-lying areas are particularly vulnerable to oxygen deficiencies and should always be monitored before and continuously during entry.* Oxygen Enriched means the oxygen level reaches above 22%. This atmosphere could cause combustible materials present to explode if an ignition source is present. An ignition source could include sparks from welding.

CONFINED SPACE ENTRY PERMITS

If an employee is entering a confined space to perform maintenance work, inspections, repairs, or new construction an entry permit is required. The entry permit is designed to communicate all potential hazards to personnel involved in the entry. It also serves as a valuable checklist to make sure necessary safety precautions and procedures are followed. The following information is contained on a confined space entry permit:

An entry permit authorizes entry:

- Only by authorized employees.
- Into a specific confined space.
- For a specific purpose stating work activities.
- By a specific shift or work crew for a certain amount of time.

Other information included on the entry permit:

- Any known hazards or those that could reasonably be expected to be present in the space.
- Measures that may be needed (ex. lockout/tagout).
- Measures needed to remove or control potential atmospheric hazards (ex. purging, ventilating, flushing).
- Any testing and monitoring equipment and procedures used to

verify that acceptable conditions are maintained before and during entry.

- Rescue and other services to be used or summoned if needed and the means of communicating with those services.
- Rescue equipment provided if necessary (ex. life line, escape pod).
- Communication procedures and equipment used by entrants and attendants to maintain contact.
- Personal protective equipment necessary for the entry or rescue of workers in spaces.
- Hot work should be noted on the permit and/or on a separate hot work permit that is attached to the entry permit.

CONFINED SPACE ENTRY TEAM

Attendant Responsibilities - The attendant (Hole Watch) is the person stationed outside the confined space that monitors the authorized personnel inside. The attendant must:

- Remain outside the confined space at all times during entry.
- Know how to summon rescue and other emergency services.
- Maintain continuous contact with personnel in the space.
- Maintain an account of personnel in the space.
- Monitor activities inside/outside the space to determine if personnel are safe.
- Know and be able to recognize potential hazards in the space.
- **Never enter a space for rescue by yourself unprotected!**
- Order a space evacuation if: Unsafe conditions exist inside/outside the space, toxic symptoms are exhibited by personnel in the confined space, and if the watchman leaves the work attendant position.

Entry Supervisor Responsibilities - The entry supervisor is the person authorizing or in charge of confined space activities. The entry supervisor is responsible for:

- Determining if conditions are acceptable for an entry.
- Withholding authorization for entry if unacceptable conditions exist.

- Terminating entry if aware of potential hazards.
- Make sure the entry permit is prepared correctly.
- Removing unauthorized individuals from entry permit area.
- Signing permit.
- Entry Supervisor may also assume the duties of *either* the attendant or entrant after training.

Entrant Responsibilities - The entrant is the person entering the confined space to complete job tasks. The entrant responsibilities are:

- Know how to use personal protective equipment required.
- Understand symptoms of overexposure to potential toxic hazards in the space.
- Stay in constant contact with the attendant.
- Be on the lookout for new potential hazards & communicate or evacuate the space.
- Evacuate the space if told to do so.

PERMIT REQUIRED CONFINED SPACE ENTRY PROCEDURE

Training

- Affected employees must be trained in all aspects of the purpose and use of the Confined Space Entry Procedures.
- Each employee must be trained in the use and purpose of all personal protective equipment. The training must include simulated emergencies during which respirators will be donned and rescue procedures practiced. A written training program based on this procedure shall be written by the Safety Manager and used as the training document.

Sequence of Confined Space Entry

- Before any employee is allowed to enter a tank or other confined spaces, supervisory authorization must be obtained and a CONFINED SPACES ENTRY PERMIT must be initiated. The project supervisor in charge of the work must initiate this action.

- Prior to issuance of the permit, appropriate tests of the atmosphere must be made by authorized personnel from outside of the confined space to determine if established air contaminant limits are exceeded, or if the oxygen concentration is less than or greater than permissible concentrations. Tests must be made with the appropriate monitoring equipment. The person authorized to monitor the atmosphere must be trained in the proper use, calibration, and care of the monitoring instruments and must remain at the site when work is being performed in a confined space.
- Tests may indicate the atmosphere is initially safe, but the work may produce a hazardous atmosphere from such processes as cutting and welding, distributing of accumulated sludge, or use of solvents. Entry without continuous air monitoring, safety harness and lifeline will not be permitted.
- If tests indicate that the atmosphere is unsafe, the confined space must be ventilated until the hazardous atmosphere is removed, prior to employee entry.
- If after ventilating the space, tests indicate the atmosphere is less than 19.5 percent oxygen or levels of toxic contaminants hazardous to health, no person will be allowed to enter unless equipped with an approved airline respirator or a self-contained breathing apparatus.
- Employees entering contaminated confined spaces shall be kept to a minimum and only for emergency maintenance.
- The employee entering the space must wear protective clothing if the contaminant can cause dermatitis, chemical burns, or can be absorbed through the skin.
- The CONFINED SPACE ENTRY PERMIT will not be issued unless provisions have been made for: (1) constant communication and/or observation with an employee in the immediate area who is not in the confined space: (2) an adequate rescue procedure: (3) someone to be readily available who has been trained in cardiopulmonary resuscitation (CPR).
- In all cases, the company procedure will be followed. Before entering a confined space, the contents must be drained and clean-out doors opened where provided. Further, all lines/pipes serving the confined space must be isolated by positive means which may include, but is not limited to, blanking, miss-aligning, and securing valves in a closed position. Closure of double valves with lock and tag out is preferred over single valve closure.

- A hole watch shall be stationed outside the entrance to each confined space when employees are inside the confined space. The hole watch shall be trained in his/her duties regarding maintaining communication with employees and initiating rescue services if required. Hole watches shall not leave an entrance while employees are still in the confined space.

Special Considerations

- In potentially explosive or flammable atmosphere, non-sparking tools and portable vapor-proof electric lighting not exceeding 12 volts must be used. Smoking, open flames, and cutting or welding will be prohibited.
- Personal protective equipment, such as coveralls, impervious gloves, boots, face and eye protection, must be used as required by the nature of the operation to be performed.
- In the event of a sudden life-threatening or otherwise potentially dangerous situation requiring immediate action which involves entry into a confined space as defined in this procedure, and in the absence of time to complete testing and ventilation procedures, the atmosphere will be considered as unsafe to enter. Anyone entering into such a confined space for rescue or to monitor shall be properly trained in the use of and wear a SCBA.

Equipment

- A combination combustible gas/oxygen meter, which samples for combustible vapors and oxygen deficiency simultaneously, is required. However, individual meters to sample for combustible atmospheres and oxygen deficiency may also be used. Other atmospheric monitoring equipment must be purchased and used for evaluation for other known gases such as hydrogen sulfide, sulfur dioxide, etc., which may be present in an enclosed space (tanks, vessels, etc.) at a client's process facility.
- Supplied-air breathing apparatus, such as self-contained respirator with full face piece operated in pressure demand mode (SCBA), or TYPE-C supplied-air respirator with full face piece operated in pressure demand mode with an emergency backup SCBA or escape bottle operated in a pressure demand mode must be used in atmospheres Immediately Dangerous to Life and Health (IDLH) and from which the user can readily escape.

- A supplied-air TYPE-C respirator may be used but is not mandatory. Either continuous flow or pressure demand mode may be used in areas that are not Immediately Dangerous to Life and Health (IDLH) and from which the user can readily escape.
- **Harness and Lifelines:** A harness should be capable of retrieving an inert body in an upright position. A full body harness with a single lifting ring attached to the upper back, or with dual lifting rings attached to the shoulder straps, is recommended for work in open areas. Where egress through narrow openings is necessary, wristlets with attached lifting rings are required in addition to a body harness. Sufficient lifelines of at least one-half inch manila must be provided to insure constant connection between the employee in the confined space and the attendant outside.
- When using hose line supplied-air units, breathing air must be delivered through a filter board. The air quality of compressor-supplied air must meet the requirement as specified in 29 CFR 1910.134.
- **Ventilation:** A portable blower with a minimum capacity of 600 dfm at 1.5 inches static pressure should be used to supply air and ventilate the enclosed space prior to and during occupancy. If the space is large enough, additional air volume may be required.

Maintenance of Equipment

- A competent person must maintain and issue all self-contained and/or supplied-air breathing apparatus required by this procedure.
- The safety designee shall be responsible for issuing all entry permits.
- The safety designee shall maintain and ensure calibration of all combustible gas/oxygen meters that must be readily available for use as required.

RECORDS

A confined space permit indicating the expiration time and date of the permit must remain posted at the entrance to the confined space for the duration. A copy of this permit will remain in the project files for the duration of the project along with the completed copy and test results of the atmospheric testing for the confined space.

BEE STEEL, INC.

FORKLIFT SAFETY PROCEDURE

PURPOSE

The purpose of this procedure is to establish guidelines for safe operations of powered industrial trucks.

SCOPE

This procedure applies to all personnel in the company.

REFERENCES

29 CFR 1910.178

INTRODUCTION

Forklifts are powerful vehicles designed to handle heavy loads. Operating a forklift is serious business and recklessness or carelessness will create dangerous situations that could lead to accidents, injury, and death. The safe operation of a forklift is a big responsibility and accidents can be avoided. A professional forklift operator understands how forklifts operate, is familiar with company rules and safe operating procedures, completes the pre-shift inspection form, uses safety equipment (seat belt), and keeps the vehicle under control at all times.

FORKLIFT BALANCE & CENTER OF GRAVITY

The stability of a forklift is based on the *principal of balance*. The drive wheels are the balance or pivot points of a forklift. An internal combustion forklift uses the engine, transmission, steer axle, counterweight, and frame to help offset or counterbalance a load. An electric powered forklift uses the battery, control panel, motors and pumps, steer axle, counterweight, and frame to help offset or counterbalance a load.

The center of gravity is located within an object at a point around which all weight is evenly distributed. The forklift center of gravity is located within the “*stability triangle*” which is an area contained inside a set of straight lines drawn between the two drive tires and the center point of the steer axle. If the center of gravity remains within the “stability

triangle”, the forklift will remain counterbalanced. The center of gravity will move as a result of two forces, static and dynamic:

- *Static Forces* - Static forces are load characteristics, lift height, amount of tilt, and tire condition.
- *Dynamic Forces* - Dynamic forces are acceleration, travel speeds, braking, and surface conditions.

Imbalance occurs when the center of gravity extends beyond the “***stability triangle***” and can result in loss of steering, loss of traction, unstable loads, and potential tip over. By properly positioning the load on the forks the forklift becomes balanced. Always put the load as close to the backrest as possible. The weight of the vehicle and the position of the load determine the amount a forklift can lift. If the load is too heavy it will bring the front of the forklift down and the back of the vehicle up. You can find the lifting capacity of your forklift on the identification plate. **Do not exceed the weight limit. If you have any questions consult your supervisor.**

FORKLIFT WARNING LABEL & IDENTIFICATION PLATE

All forklifts are required by law to have labels warning that improper operation could result in injury or death. The identification plate also displays certain performance data of the forklift. This information includes:

- Machine working capacity
- Gross vehicle weight
- Rated load center
- Maximum lift height
- Attachment identification
- Tire data

FORKLIFT TIRES

There are two types of forklift tires, cushion or solid and pneumatic or air-filled. The type of surface a forklift is operating on will determine the tire best suited for purposes of stability, load sensitivity, and the overall safety of load movement.

- *Cushion or Solid* - These tires are used mainly indoors because they operate effectively on smooth surfaces.

- *Pneumatic or Air-Filled* - These tires are used on uneven surfaces because the tire design provides a smooth ride which helps stabilize a load.

TYPES OF FORKS

Most of the forklifts used in industry today use one of two general types of forks, half-tapered and full-tapered. *Half-Tapered Forks* are preferred for heavier loads. They can be identified by the appearance of the fork with a gradual increase in the width of the tip to its maximum thickness about midway back on the fork. *Full-Tapered Forks* are usually preferred for lighter duty lifting. They are also more convenient for pallet lifting and stacking.

FORKLIFT POWER SOURCES

Forklifts can be powered by:

- Diesel Fuel
- Gasoline
- Liquid Propane (LP)
- Battery

SAFE OPERATING PROCEDURE & RULES

- All nameplates and markings shall remain in place and be maintained in a legible condition.
- Only trained and authorized operators shall be permitted to operate powered industrial trucks. Operators shall be trained in the safe operation of each powered industrial truck used at the facility or on projects.
- No person shall be allowed to stand or pass under the elevated portion of any truck, whether loaded or empty.
- No person shall ride on the lifting mechanism of a forklift, or use the forklift as a work platform. A manufactured approved personnel basket may be used if all stipulations of the manufacture are met.
- When a powered industrial truck is unattended, loads shall be fully lowered, controls neutralized, power shut off, and brakes set. Wheels shall be blocked if the truck is parked on an incline.

- Always use caution and proper positioning when loading, lifting, traveling, or executing turns.
- If a powered industrial truck is found to be in need of repair, is defective, or is in any way unsafe, the truck shall be taken out of service until it has been restored to safe operating condition. Authorized personnel shall make all repairs.
- Maintain a clear view, watch out for fellow employees, obey all posted signs and stay in designated areas.
- Do not block emergency exits and equipment and call attention to hazards.
- Stay aware of overhead clearance.

FORKLIFT INSPECTIONS

According to OSHA standards, industrial powered trucks shall be examined before being placed into service. This is required to protect you and your employees, prolong equipment life, and assist maintenance personnel in effective replacement of parts and repairs.

VISUAL CHECKS

- Tire Condition (foreign particles, gouges, cuts, pressure)
- Fuel System (check for leaks)
- Radiator (Check level) Caution!
- Engine Oil (Check level)
- Head and Tail Lights (Condition)
- Mast, Fork, Carriage, or Attachment (Check for loose or missing bolts, etc.)
- Oil and Water (Check for leaks)
- Radiator Water Level
- Fuel Level or Battery Charge
- Battery Connector (Cleanliness, tight)
- Hydraulic System (Check for leaks)
- Safety Equipment (Back-up alarm/seat belt)

OPERATIONAL CHECKS

- Horn
- Steering
- Service Brakes
- Parking Brakes
- Hydraulic Controls
- Seat
- Brake
- Battery Load Test

TRAINING & INFORMATION

- Only a trained and authorized operator shall be permitted to operate powered industrial trucks.
- Operators shall be trained in the safe operation of each powered industrial truck used at the facility or construction site.
- Training documentation will be kept on file by the safety coordinator.

BEE STEEL, INC.

HEARING CONSERVATION PROGRAM

POLICY

The company is committed to provide a hazard free workplace and will take all practical measures to eliminate the hazard of excessive noise levels through a Hearing Conservation Program that will ensure the safety, health, and hearing conservation of all employees.

SCOPE

Compliance with this program is mandatory and is applicable to all employees. Failure to comply will result in disciplinary action and/or is grounds for termination.

SUMMARY

To ensure the company is in compliance with 29 CFR 1910.95, all employees exposed to high noise levels in the workplace where exposure is equal to or exceeds a time weighted average (TWA) of 85 decibels for an eight hour period will receive annual audiometric testing to establish a baseline for future reference. In addition, employee training will provide all applicable employees with information necessary to understand noise, the hazards associated with noise, the proper use and care of protective equipment, and when and where hearing protection is required.

DEFINITIONS

Frequency - is the pitch of the sound (high or low)

Intensity - refers to the loudness of a sound

Decibels (dB) - units used to measure the loudness of sound

Baseline - the first audiometric exam results used for future reference

Noise Reduction Rating (NRR) - sound level protection built into a hearing protection device

INTRODUCTION

Hearing loss due to excessive noise exposure in the workplace is usually not identified as a health hazard because it often takes a long period of time to develop. By the time hearing loss is detected, it is too late to correct it. Loss of hearing is frequently blamed on the aging process and little thought is given to the possibility that damage occurred in the workplace. Studies have linked exposure to high noise levels with headaches, high blood pressure, ulcers, and sleeping disorders.

WHAT IS NOISE?

Noise is something that everyone is exposed to on a daily basis either at home, work, or recreation. It can be described as unwanted sound that can be loud, prolonged, and deafening. The effects of sound depend on the loudness in relationship to pitch, length of exposure, and a person's existing health and age. Temporary hearing loss is attributed to short-term exposure and normal hearing usually returns within a short amount of time. Prolonged exposure to high noise levels over a period of time gradually causes permanent hearing damage.

To understand how sound affects our hearing it is important to identify and examine the source. Sounds are sent into the air as vibrations that are known as *sound waves*. These sound waves enter the ear and are changed into nerve impulses that are received by the brain and are then interpreted.

The ear identifies sound through *frequency* and *intensity*. Frequency is the pitch of the sound and can be high or low. A high frequency sound tends to cause more damage to the ear than a low frequency sound. Intensity refers to the loudness of the sound. Decibels (dB) are used to measure the loudness of sound. Intensity is used to establish hearing protection guidelines in the workplace. If the intensity of noise exceeds an average of 90 dB over an eight-hour workday hearing loss may result.

TYPES OF NOISE

There are three types of noise to understand:

- *Wide Band* - Noise that is spread over a wide range of pitches. An example is a production area, where many machines operate at the same time producing different pitches.
- *Narrow Band* - These noises are associated with a narrow range of pitches. An example is a power tool.

- *Impulse/Impact* - Impulse noise can be identified by temporary “beats” that can occur in a pattern or randomly. An example is a hammer.

THE EFFECTS OF NOISE

Overexposure to noise can cause temporary hearing loss and permanent hearing loss can occur due to exposure over a period of years. High blood pressure, headaches, ulcers, and irritability may exist from high noise exposure. The strain of talking or listening over loud sounds may cause communication problems and misunderstood instructions resulting in production errors. Reasons for hearing loss may include not wearing ear protection, not wearing ear protection properly, use of inadequate ear protection, and exposure to off-the-job noise where ear protection is not used, and ear infection or disease.

THE PURPOSE OF AUDIOMETRIC TESTING

The purpose of audiometric testing is to measure an employee’s level of hearing. This test is an effective tool for early detection of hearing loss. The results from the exam are recorded on an *audiogram*. The first exam is called a *baseline* and it shows the endurance level for each ear and provides a reference for future test results. This exam is conducted annually and any change in hearing ability is recorded. This change is known as a *hearing threshold shift*.

MONITORING & REQUIREMENTS

The company will conduct noise level surveys when applicable and advise employees of the various noise levels present. Monitoring will be completed in a manner that will accurately identify employees who are exposed to noise. Noise level monitoring will take place when new equipment, machinery, or production processes are introduced into the workplace. Every effort will be made to make engineering or mechanical changes where feasible, to eliminate or reduce noise to a level below 85 dB. However, employees are required to wear hearing protection where noise levels equal or exceed 85 dB. Exposure measurements shall include the following:

- All intermittent, continuous, and impulsive noises within 80-130 dB.
- Measurements shall be taken during normal working hours and procedures.

- Employees who are monitored must be informed of the results.
- Monitoring instruments shall be calibrated.
- The final report shall include: Employee monitored, type of instrument used, calibration date, monitoring area, TWA, peak sound exposure, and date employee was monitored.

DESIGNATED HEARING PROTECTION AREAS

While a time weighted average of 85 dB may not be present at some work areas, there are designated areas in the operation where the noise level *may be* equal to or exceed 85 dB. As a result, all employees are required to wear hearing protection whenever they are working in these designated areas. The company will provide proper hearing protection to all employees who have a chance of exposure at 85 dB or greater.

Due to the style of fieldwork the company performs, seldom at the same location, it is difficult to determine when specific exposures may occur. All employees and assisting employees operating all equipment that produces 85 dB or higher are required to wear hearing protection.

THE PURPOSE OF HEARING PROTECTION

Hearing protection can help prevent the loss of hearing and it is important to understand what hearing protection devices are best for the workplace. There are advantages and disadvantages to all types of hearing protection. The hearing protection depends on sound level protection built into the hearing protection device. These levels are known as the *Noise Reduction Ratings* (NRR). The number on the label indicates the hearing protection effectiveness.

HEARING PROTECTION DEVICES

Earplug Protectors

These hearing protection devices are normally referred to as inserts or earplugs. These types of earplugs are made of rubber, plastic, acoustical fibers, foam, and wax impregnated cotton.

- *Molded Inserts*. They usually have an NRR within the range of 25-26 dB and are made of soft silicone, rubber, and plastic. *Advantages*: Generally inexpensive, able to wash and reuse, and there is little danger of inserting the plug too far into the ear canal.

Disadvantages: Often hard to get a snug fit because of ear canal sizes, eventually the molded insert hardens and shrinks, must maintain a variety of sizes, and possible allergic reaction due to earplug material.

- *Form-able Inserts.* Due to the design of form-able inserts, they have an NRR that ranges from 27-33 dB. The materials used are often fine glass fiber, expandable plastic, foam, and wax impregnated cotton. *Advantages:* Can fit all ears, mold to the ear canal, and available with a cord. *Disadvantages:* Possible to push plug too far into the ear canal, usually good for one time use, becomes dirty easily, and more prone to cause ear infections.

Canal Cap Protectors

This type of protection is made to rest against the outer edge of the ear canal. They are made of a soft rubber and are held in place with a headband. The NRR on this type of protector ranges from 17-25 dB.

- *Advantages:* Reusable and one size fit all with an adjustable headband.
- *Disadvantages:* Does not provide a high NRR, and requires regular cleaning.

Earmuff Protectors

Earmuffs are designed to fit over the entire ear and ear lobe and seals against the side of the head with suitable cushion or padding. They generally have an NRR that ranges from 22-29 dB when used properly.

- *Advantages:* A good alternative to those who are allergic to inserts, easy to replace the protective seal, and many can be adjusted easily to fit an individual's head.
- *Disadvantage:* Perspiration eventually stiffens the plastic seal, not practical for confined space work, electricians need to wear non-conductive earmuffs, and efficiency of the muff type protector is reduced when worn over the frames of eye protection.

FIT & CARE FOR HEARING PROTECTION

Earplugs

- *Proper Fit.* Wash your hands. Slowly roll and compress foam plugs into a very thin cylinder. Reach around the head and pull the ear outward and upward during insertion. While compressed - insert plug well into the ear canal, and hold in place for a moment until it begins to expand.
- *Proper Care.* Keep plugs as clean as possible. Inspect before reinsertion and if damaged or dirty - dispose of immediately and replace. Periodically check to be sure the fit is still snug, and do not share ear plugs with others.

Earmuffs

- *Proper Fit.* Earmuffs must fully enclose the ears to seal against the head. Adjust the headbands so cushion exerts even pressure, and keep hair from underneath the cushion.
- *Proper Care.* Clean with warm water and mild soap; do not use alcohols or solvents to clean cushions. Replace the cushion if stiff, worn, cut, or torn, and check the headband for deterioration.

RECORD KEEPING & EMPLOYEE ACCESS

Employees have the right of access to any and all information regarding this hearing conservation program as well as the right of access to the results of their individual audiogram and related audiometric test results. Employees are responsible for understanding the results and corrective measures to be taken. Hard copy audiometric test results will be kept in the employee personnel file.

- Audiometric test results will be retained for the duration of the tested employee's employment and as long thereafter as inactive records are maintained.
- Job site and equipment noise exposure measurement records will be retained for two years, or until new measurements are recorded.
- All records pertaining to hearing conservation shall be provided upon request to employees, former employees, representatives designated by the employee and the Assistant Secretary of Labor.

INFORMATION & TRAINING

The company will conduct annual information and training sessions. Information and training requirements will be accomplished through handouts and video programs. Topics will include a review of this program, how noise affects hearing, how hearing works and is diminished by excessive noise, where hearing protection is required, and the selection, fitting, use, and care of hearing protection devices. Upon completion of training all employees will be given a written quiz to test their understanding of the material covered. All information and training will be documented and kept in employee personnel files.

PERMISSIBLE EXPOSURE LIMITS CHART

OSHA CFR 1910.95

<u>DURATION PER DAY (Hours)</u>	<u>SOUND LEVEL (dBa)</u>
8	90
6	92
4	95
3	97
2	100
1½	102
1	105
½	110
¼ or less	115

Noise levels are determined using a Type 2 sound level meter measuring on the A-scale at slow response. Maximum level 140 dB impact noise.

BEE STEEL, INC.
BLOODBORNE PATHOGENS
EXPOSURE CONTROL PLAN

INTRODUCTION

The Occupational Safety and Health Administration (OSHA) has a variety of regulations that all employers must follow to ensure the health and safety of employees in the workplace.

This company program is designated to comply with Title 29 of the Code of Federal Regulations Part 1910.1030 that says that when first aid is given to someone who is injured, there is a chance that the first aid provider may come in contact with the blood or body fluids of the person being treated. Many diseases such as AIDS and HEPATITIS are transmitted by this exposure.

This blood borne pathogen program gives us procedures to protect ourselves. The written program may sound very technical and, there are many record keeping requirements however, there are only three key points to remember:

- Any human blood or body fluid can contain disease that can infect you.
- Whenever you might come in contact with blood or body fluid **PROTECT YOURSELF** - cover any part of you that may come in contact, gloves for your hands, mask over your nose and mouth, safety glasses over your eyes, etc.
- Clean up and sanitize any spills

POLICY

The company has adopted the Bloodborne Pathogen Program as part of the comprehensive Safety Program to help insure all employees are provided with a safe and hazard free workplace. The company will provide at no cost to employees personal protective equipment and Hepatitis B vaccines to those who have reasonable chance of contact with body fluids and have had specific first aid training.

SCOPE

Compliance with this Bloodborne Pathogens Program is mandatory and all employees are responsible for reporting any exposure to blood or bodily fluids.

SUMMARY

This program details the methods that will be used to prevent employee exposure to Bloodborne Pathogens like Hepatitis B while administering first aid resulting from an accident such as a serious laceration resulting from the use of tools. The program complies with all of the regulations explained in 29 CFR 1910.1030 (the bloodborne pathogens standard).

DEFINITIONS

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

Bloodborne Pathogens, means pathogenic microorganisms that are present in the human blood and can cause disease in humans. These pathogens include, but are not limited to, hepatitis B virus (HBV) and human immunodeficiency virus (HIV).

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

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

Contaminated Sharps means any contaminated object that can penetrate the skin including, but not limited to, needles, scalpels, and broken glass.

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

Engineering Controls, means controls (i.e. sharps disposal container, biohazard bag and box) that isolate or remove the Bloodborne pathogens hazard from the workplace.

Exposure Incident means a specific eye, mouth, or other mucous membrane, non-intact skin, or potential contact with blood or other potentially infectious materials that result from performance of employee duties.

HBV, means hepatitis B virus.

HIV, means human immunodeficiency virus.

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

Universal Precautions is an approach to infection control. According to the concept of universal precautions, all human blood and certain human body fluids are treated as if to be infectious for HIV, HBV, and other Bloodborne pathogens. This means, proper personal protective equipment should always be used insuring protection to all routes of exposure, points of entry (orifice, skin, eyes, etc.).

EXPOSURE DETERMINATION

Pre-Incident Determinations

The company has performed an exposure analysis to determine which employees may incur occupational exposure to blood or other potentially infectious materials. This determination is based on risks incurred while performing job procedures without the use of personal protective equipment.

All employees have a very remote to no risk of exposure in the workplace environment. However, an employee having remote potential of exposure would be that person in close proximity to an employee experiencing an incident. Accidents are random; therefore, there is no method for determining the exact circumstance of any given incident or location of incident.

For the purpose of rendering first aid to an injured employee the company maintains a policy of self-assistance for minor injury. This policy relies upon the injured individual to assess their minor need at the time of the incident and respond accordingly using readily available First Aid Kits which contain such supplies as aspirin, band-aids, eye-wash, tweezers, gauze and gauze tape, and personal protective equipment.

The following tasks have risk to occupational exposure and should only be performed by trained and authorized employees:

- First Aid for Wounds
- CPR
- First Aid for Vomiting
- Spill cleanup and sanitation
- Other Rescue

Responsibilities Of The First Responder (trained personnel)

First Responder action, as defined by the company, is an incident in which the severity of the injury presents the possibility of exposure to potentially infectious materials to the assistor. In the event of First Responder action, the First Responder has assigned responsibilities and has been provided with training on basic first aid procedures. The First Responder is responsible for implementing first aid procedures according to the methods set forth in the Exposure Control Plan.

The only employee having the assigned risk of exposure is the designated first responder provider. The following is a list of job classifications in which employees may have risk to occupational exposure:

- First Responder
- CPR/First Aid Trained

METHOD OF COMPLIANCE

As summarized in the exposure determination, the potential for exposure only exists in the event of an accident. Therefore, the actual presence of infectious material within the workplace is a rare event. The approach to prevent employee exposure includes six specific attributes. Universal Precautions (see definitions for meaning) will be used to prevent potential contact with blood or other potentially infectious materials.

Work Practice Control Methods

The term work practice control methods as defined by the company means a combination of physical facilities (washrooms), portable hand sanitizer cleanser and procedures which when followed will eliminate the possibility of employee exposure to bloodborne pathogens. Some general policy guidelines are:

- Wash exposed areas before eating
- Wash exposed areas after giving first aid
- Wash exposed areas after clean-up

Engineering Controls

Washroom facilities are available to all employees for hand washing activities. Washing facilities are located in the employee laboratory. Employees are encouraged to wash their hands on an ongoing as needed basis. This will minimize or prevent the potential either to self inflicted exposure or cross contamination resulting from contact with others. In addition, the available washroom facility also provides hand cleaner stations. These stations contain approved disinfectant solutions for hand cleaning. The use of these hand cleaners also addresses individual concerns for dermal reactions to the various chemicals. Field operations use portable hand sanitizer cleanser.

Personal Protective Equipment

Equipment provided for protection against potential bloodborne pathogen exposure includes, but is not limited to, gloves, masks and eye protection that are located in the biohazard/first aid kit. The purpose of this personal protective equipment is to prevent blood and other potentially infectious materials to pass through to or reach the employees work clothes. Information and training is provided to employees on the correct use, laundering and disposal of potentially contaminated clothing and personal protective equipment.

Designated Provider Control Methods

This helps control the possibility for exposure by limiting employee response to personnel that are formally trained in exposure control procedures. Situations where infectious materials may disperse and result in exposure of others are controlled by the actions of the designated first responder. It is the responsibility of the responder to administer first aid in a specified exposure containment manner, thus localizing the infectious or presumed infectious materials.

Housekeeping and Laundry

The work areas will be kept in a clean and sanitary condition. Any equipment or working surface will be cleaned and disinfected after contact with blood or other potentially infectious material with a bleach solution (one cup commercial/house hold bleach to 9 cups water). Receptacles intended for refuse will be inspected and decontaminated on a regular basis. Any material (i.e. tissue or paper towel) that is a potential biohazard will be saturated with the bleach solution and placed in receptacles intended for trash. Contaminated sharps will be discarded in closed containers that are puncture resistant and leak proof. Potentially contaminated laundry will be handled as little as possible. Contaminated laundry will be placed in leak proof bags or containers and labeled accordingly. All regulated waste disposal will comply with applicable federal and state regulations.

Hepatitis B Vaccination

The hepatitis B vaccine will be made available to employees within 10 working days of assignment who have been identified as having potential exposure as part of their job duties. Employees who choose to not be vaccinated must sign a declination form but still have the option to receive the vaccine at a later date. In the event the first responder is exposed to blood or other potentially infectious material, the hepatitis vaccine will be offered within 24 hours of the exposure if the employee has not previously been vaccinated.

INCIDENTAL EXPOSURE

If an employee is exposed to blood or body fluid it should be reported to the safety coordinator or supervisor immediately. This enables the proper response and precautions concerning the potentially exposed individual. All records of exposure incidents will be kept on file by the office supervisor. Individuals who incur an exposure incident will be offered a post exposure evaluation and follow up. Examples of types of exposures can be but are not limited to:

- Stabbed with a sharp object
- Blood or body fluid in the eye
- Blood or body fluid on the skin
- Any other method of contact that may allow absorption into the body

INCIDENT INVESTIGATION

A primary responsibility of the designated first provider is the investigation and report of findings of the actual circumstances of the exposure incident. The response procedure to an exposure incident has been structured to be highly visible to management. This was done intentionally to keep management informed and provide a mechanism to assess ongoing procedures and make modifications as necessary to continuously improve safe conditions.

At the conclusion of any incident, the first provider must provide a completed Incident Investigation Form to management. The investigation form addresses specific issues of the incident and defines actions to eliminate potential risk and prevent recurrence.

POST EVALUATION AND FOLLOW-UP

All employees who incur an exposure incident will be offered post-exposure evaluation and follow-up in accordance with the OSHA standard. This follow-up will include the following:

- Documentation of the route of exposure and the circumstances related to the incident.
- If possible, the identification of the source individual and, if possible, the status of the source individual. The blood of the source individual will be tested (after consent is obtained) for the HIV/HBV.
- Results of testing of the source individual will be made available to the exposed employee with the exposed employee informed about the applicable laws and regulations concerning disclosure of the identity and infectivity of the source individual.
- The employee will be offered the option of having their blood collected for testing. The blood sample will be preserved at least 90 days to allow the employee to decide if the blood should be tested for HIV serological status. However, if the employee decides prior to that time that testing will be conducted then the appropriate action can be taken and the blood sample discarded.
- The employee will be offered post exposure prophylaxis in accordance with the current recommendations of the U.S. Public Health Service.
- The treating physician will give the employee information on what potential illnesses to be alert for and to report any related experiences to appropriate personnel.

DESIGNATED FIRST PROVIDER PROCEDURES

The following are defined as the first responder methods and responsibilities:

- Open “First Aid Kit” and put on Personal Protection Equipment. Administer First Aid to stop bleeding and make the individual comfortable.
- Contact your supervisor immediately to determine where to send the individual for medical care.
- Call for medical assistance or drive the individual to the care facility.
- While the individual is at the care facility you should fill out the indicated questions on the Incident Investigation Form and the Information Provided to the Health Care Professional.
- Get a copy of any paperwork given to the worker by the treating physician.
- Supervise the safe clean up and decontamination of any areas of the workplace which may have been contaminated during the incident. Use the personal protective equipment contained in the “First Aid Kit” and a 10% bleach solution to decontaminate equipment and floors.
- Disinfect transport vehicle and place all contaminated materials in the Biohazard Containment Box for controlled disposal.
- Use the Biohazard Containment Box to store any contaminated sharps or garments. Place all cleanup materials on the Biohazard Containment Box for safe disposal.
- Conduct an inventory of the supplies and equipment used so that the appropriate supplies may be replaced and give the report to the safety coordinator or your supervisor.
- Get these three pages and the doctor’s paperwork to the office by the close of business on the day after the accident. (Incident Report-Inventory Replacement Form-Information Provided to the Health Care Professional).

INFORMATION AND TRAINING

Training for all employees will be conducted prior to initial assignment to tasks where occupational exposure may occur. Training will be conducted in the following manner:

Training for employees will include the following:

- The OSHA Standard for Bloodborne Pathogens.
- Epidemiology and symptomatology of Bloodborne diseases.
- Modes of transmission of Bloodborne Pathogens.
- This Exposure Control Plan, i.e. points of the plan, lines of responsibility, how the plan will be implemented, etc.
- Procedures that might cause exposure to blood or other potentially infectious materials at this facility.
- Control methods that will be used at the facility to control exposure to blood or other potentially infectious materials.
- Personal protective equipment available at this facility and who should be contacted concerning it.
- Post Exposure evaluation and follow-up.
- Signs and labels used at the facility.
- Hepatitis B vaccine program at the facility.

Training will be conducted using videotapes, written material, etc. and all employees will receive annual refresher training. The materials used for training are located in the Bloodborne Pathogen Training Handout on file at the corporate office.

RECORDS MAINTENANCE

Five separate information forms are generated and maintained as an integral part of the Bloodborne Pathogen Program. A sample copy of each form is included in this program. The specific forms are as follows:

- Incident Investigation Form
- Training Acknowledgment & Renewal Endorsement (maintained for 3 years)
- HBV Vaccine Status Form
- Inventory Replacement Form

The title of each form is self-explanatory as to the substance and justification of the form and the summary information provided by the completion of the forms complies with the record. All required records would be maintained and kept confidential by authorized personnel. Medical records must have employee consent before release to anyone.

BEE STEEL, INC.

ASBESTOS PROCEDURE

PURPOSE

The purpose of this procedure is to protect the health and safety of all employees from accidental exposure to asbestos during construction operations.

DEFINITIONS

Asbestos - Includes chrysotile, amosite, crocidolite, tremolite asbestos, anthophyllite asbestos, and any of these minerals that has been chemically treated and/or altered.

Employee Exposure - Means that exposure to airborne asbestos that would occur if the employee were not using respiratory protective equipment.

Regulated Area - Means an area established by the employer to demarcate areas where airborne concentrations of asbestos exceed or can reasonably be expected to exceed the permissible exposure limit.

Demolition - Means the wrecking or taking out of any load-supporting structural member, or any related razing, removing, or shipping of asbestos products.

Removal - Means the taking out or stripping of asbestos or materials containing asbestos.

Renovation - Means the modifying of any existing structure, or portion thereof where exposure to airborne asbestos may result.

Repair - Means any reconstructing, or reconditioning of structures or substrates where asbestos is present.

OPERATIONS PROCEDURES

Employees of the company generally are not required to perform any work involving asbestos or asbestos like materials. However, if workers suspect the presence of such materials at any work site, they should

immediately inform their supervisor. Workers should not touch, remove, demolish, or in any other manner disturb materials that are suspected to contain asbestos. Supervisors should inform the safety director immediately if asbestos is suspected to be present at a job site. The safety director will determine methods to identify and if necessary control or abate the material prior to further operations.

MULTI-EMPLOYER SITE

When a supervisor determines that another employer onsite is performing abatement, measures should be taken to protect employees from entering regulated areas. This may be accomplished by using barricades, “danger” tape, and warning signs.

TRAINING

On projects where contact with asbestos containing materials is likely due to the nature of the work to be accomplished, proper training on the appropriate asbestos handling procedure will be conducted. Company employees are restricted from such tasks until such training is given.

BEE STEEL, INC.

LEAD PROTECTION PROGRAM

POLICY

To provide a hazard free workplace and have a Lead Protection Program to ensure the safety and health of all company employees performing job tasks in which a potential lead exposure could occur.

Compliance with this program is mandatory and is applicable to all company employees who work in an environment where lead is present in any amount. Failure to comply will result in disciplinary action and/or is grounds for termination.

METHODS OF COMPLIANCE

The nature of job activities sometimes involves working with lead environments where there is a potential for lead exposure. Prior to commencing work on a job site where potential lead exposure is identified as a hazard, a pre-job investigation using the Lead Assessment Form is completed which allows the company to provide effective control methods for employees. The Lead Protection Program incorporates all of the requirements of 29 CFR 1926.62(e)(2)(ii)(A)-(I) as follows:

- 1926.62(e)(2)(ii)(A) A description of each activity in which lead is emitted; e.g. equipment used, material involved, controls in place, crew size, employee job responsibilities, operating procedures and maintenance practices.
- 1926.62(e)(2)(ii)(B) A description of the specific means that will be employed to achieve compliance and, where engineering plans and studies used to determine methods selected for controlling exposure to lead.
- 1926.62(e)(2)(ii)(C) A report of the technology considered in meeting the PEL.
- 1926.62(e)(2)(ii)(D) Air monitoring data which documents the source of lead emissions.
- 1926.62(e)(2)(ii)(E) A detailed schedule for implementation of the program, including documentation such as copies of purchase orders for equipment, construction contracts, etc.

- 1926.62(e)(2)(ii)(F) A work practice program which includes items required under paragraphs (g) *protective work clothing and equipment*, (h) *housekeeping*, and (i) *hygiene facilities and practice* of this program and incorporate other relevant work practices such as those specified in paragraph (e)(5) *employees will follow safe work practice*.
- 1926.62(e)(2)(ii)(G) An administrative control schedule required by paragraph (e)(4) *administrative controls-implementation of a job rotation schedule*.
- 1926.62(e)(2)(ii)(H) A description of arrangements made among contractors on multi-contractor sites with respect to informing affected employees of potential exposure to lead and with respect to responsibility for compliance with this program.
- 1926.62(e)(2)(ii)(I) Other relevant information. (e.g. site inspections, revision of the program every six months, and reviewing the performance of mechanical ventilation).

Once the site specific Lead Assessment Form is completed (this form provides a specific step by step sequence for implementing all aspects of the program) all applicable employees will receive information and training for the identified areas of potential lead exposure at that site. During work activities, the site foreman or supervisor will periodically inspect the area to maintain the effectiveness of the lead protection program. If the inspection reveals a change in the work environment that could increase potential lead exposure, all employees will evacuate the area and a follow-up lead assessment will be completed and the necessary additional precautions will be implemented before work activities resume.

DEFINITIONS

Permissible Exposure Limit - means the dermal or inhalation exposure limit figured on an (8) eight-hour time weighted average of (50) micrograms per cubic meter of air.

Time Weighted Average (TWA) - the sum of all exposure over an 8-hour work shift.

Action Level - employee exposure, without regard to the use of respirators, to an airborne concentration of lead of 30 ug/m³ averaged over an (8) hour time weighted average.

Exposure Assessment - Employers are required to determine if any employee is exposed to lead concentrations at or above the action level of (30) thirty microns per cubic meter of air at an (8) eight hour TWA.

Lead (Pb) - metallic lead, all inorganic lead compounds, and organic lead soaps. It is a heavy metal at room temperature and pressure and is a basic chemical element. It can combine with various other substances to form numerous lead compounds. Excluded from this definition are all other organic lead compounds.

Final Medical Determination - the outcome of a multiple physical review or an alternate medical determination.

INTRODUCTION

Exposure to lead occurs in at least 120 different occupations, including primary and secondary lead smelting, lead storage, battery manufacturing, lead pigment manufacturing and use, shipbuilding and ship repair, auto manufacturing, and printing. As an employee of the company, potential exposure to various forms and amounts of lead may occur during certain jobsite activities. Lead exposure is not limited to the lead industries; in fact, food, water, and air all contain certain amounts of lead. Therefore, each of us has normal amounts of lead stored in body tissue.

FORMS OF LEAD EXPOSURE

- Lead Metal
- Lead Dust
- Lead Fumes
- Lead Mist

Non-occupational exposure to lead is less than industrial exposure. Lead and lead forms are found at operations such as stacking, pasting, casting, burning and smelting, oxide manufacturing and assembly. There may be a potential health hazard at manufacturing facilities where lead is a part of operations.

WAYS LEAD CAN ENTER THE BODY

- Inhalation
- Ingestion

When lead is absorbed into the body in certain doses it is a toxic substance. Lead is not absorbed through the skin, but can enter the body by inhalation and ingestion. When lead is scattered through the air as a dust, fume, or mist it can be inhaled and absorbed by the lungs and upper respiratory tract.

Inhalation of airborne lead is generally the most important source of occupational lead absorption. Lead can also be absorbed through the digestive system if swallowed. Handling food, cigarettes, chewing tobacco, or make-up with hands contaminated with lead will contribute to ingestion. It is for these reason that eating, drinking, and smoking in identified lead areas are avoided.

Lead blood levels will continue to increase if exposure is not controlled. A significant portion of the lead that you inhale or ingest gets into the blood stream. Once in your blood stream, lead is circulated throughout your body and stored in various organs and body tissue. Some of the lead is filtered out of the body by excretion, but some remains in the blood and other tissues. The amount of lead stored in the body will increase if lead absorption is more than body excretion. The lead stored in the body can slowly cause irreversible damage to cells, organs, and the body system.

HEALTH EFFECTS OF LEAD OVEREXPOSURE

If steps are not taken to control exposure, continued absorption of lead could result in:

- Constipation or diarrhea
- Lack of appetite
- Weight loss
- Nausea
- Abdominal pain
- Adverse effects in the male and female reproductive systems
- Adverse effects in an unborn fetus

Short Term Overexposure (Acute)

Lead is a systemic poison that serves no known useful function once absorbed by the body. Exposure to lead in large enough quantities can kill in a matter of days. A condition affecting the brain may arise, known as acute encephalopathy that develops into seizures, coma, and death. A short-term exposure of this magnitude is highly unlikely, but not impossible. There is no sharp dividing line between developing acute and chronic health effects. Lead adversely affects numerous body systems and causes forms of health impairment and disease that arise after periods of exposure as short as days or as long as several years.

Long Term Overexposure (Chronic)

Chronic overexposure to lead may result in severe damage to your blood-forming, nervous, urinary, and reproductive systems. Some common symptoms of chronic overexposure include loss of appetite, metallic taste in the mouth, anxiety, constipation, nausea, excessive tiredness, weakness, insomnia, headache, nervous irritability, muscle and joint pain or soreness, fine tremors, numbness, dizziness, and hyperactivity. At this stage, a qualified physician may diagnose lead poisoning.

Human Reproductive & Fetal Health

The medical and scientific community has recognized that lead exposure can have significant adverse health effects on an unborn fetus and the reproductive systems of males and females. At current acceptable OSHA blood-lead levels there are no known teratogenic effects that may result in birth defects or malformations, however, at higher blood-lead levels diverse effects have been reported. Some symptoms of lead overexposure affecting the male reproductive system may include a decrease in sexual drive, impotence, decreased ability to produce healthy sperm and sterility. With respect to females, these effects may include menstrual disturbances, decreased viability of the fertilized ovum and changes in reproductive capacity.

REPORTING OF PROBLEMS

Immediately notify your supervisor if you develop potential signs or symptoms associated with lead poisoning. You should also notify your supervisor if you have difficulty breathing while wearing a respirator or suspect problems with other personal protective equipment.

EXPOSURE ASSESSMENT

The company will determine if employees are exposed to concentrations of lead at or above the action level of 30 ug/m³ on an eight-hour TWA. The exposure determination shall be based on the following:

- Personal exposure monitoring
- Objective data demonstrating that the lead containing material, product, process, operation, or activity cannot result in exposure at or above the action level
- Historical measurements of airborne lead that have been taken within the last 12 months

If the initial exposure determination reveals employee exposure to be at or below the PEL, monitoring will be performed at least every six months. If the exposure determination reveals employee exposure above the PEL, monitoring will be performed quarterly. Additional monitoring will take place if a change in an operations production process occurs which may result in additional exposure to lead. In addition, employees will be given written notification of the results of their exposure assessment within five working days.

PREVENTING LEAD ABSORPTION

Proper control of exposure to lead is the responsibility of both the employer and the employee. All of the control methods discussed below are essential to minimize additional sources of lead absorption from inhalation or ingestion of lead that may accumulate on you, your clothing, or your possessions. High personal standards of cleanliness are necessary. Strict compliance with these provisions can virtually eliminate several sources of lead exposure that significantly contribute to excessive lead absorption.

Respiratory Protection

Exposure to hazardous materials requires special precautions against absorption of toxic compounds. While engineering controls (e.g. ventilation systems) are the primary means of controlling materials such as lead dust, fumes, vapors, and mists, it is often necessary to rely on respiratory protection. The respirator will give you the proper amount of protection based on the nature of the hazard. Only use respirators tested and certified by the National Institute for Occupational Safety & Health (NIOSH). The cartridges that come with the mask are approved for the environment in which you will be working. Never use a cartridge respiratory in an atmosphere containing less than 19.5% oxygen or an

atmosphere immediately dangerous to life and health (IDLH). In addition, observe the requirements of the Respiratory Protection Program.

Protective Work Clothing & Equipment

Protective clothing and equipment must be worn when the exposure to lead and lead compounds is above the PEL. If work clothing is provided, it will be given to you in a clean and dry condition at least weekly, and daily if your airborne exposure to lead is greater than 200 ug/m³. Protective work clothing and equipment can include coveralls, tyvek coveralls, gloves, hats, shoes, shoe coverlets, face shield or vented goggles. All clothing and equipment will be repaired, replaced, cleaned, laundered, or disposed of as necessary by the company. Contaminated work clothing and equipment must be removed in the designated change room and placed in the provided closed containers to be cleaned or disposed of. At no time may lead be removed from protective clothing or equipment by any means which disperses lead into the workplace air.

Hygiene Facilities & Practices

Employees exposed to lead above the PEL must change, shower, and eat in designated areas. After changing and showering no clothing or equipment worn during the shift should be carried home, this includes shoes and underwear. The change area will be equipped with separate storage facilities for protective work clothing and equipment and for street clothing to prevent cross-contamination. The container for lead contaminated clothing will be labeled as follows: CAUTION: CLOTHING CONTAMINATED WITH LEAD. DO NOT REMOVE DUST BY BLOWING OR SHAKING. DISPOSE OF LEAD CONTAMINATED WASH WATER IN ACCORDANCE WITH APPLICABLE LOCAL, STATE, OR FEDERAL REGULATIONS. Lunchrooms may not be entered with protective clothing or equipment unless surface dust has been removed by vacuuming, down draft booth, or other accepted cleaning method. Finally, workers exposed above the PEL must wash both their hands and face prior to eating, drinking, smoking, or applying cosmetics.

Housekeeping & Cleaning Practices

All surfaces will be maintained as free as practicable of accumulation of dust. In addition, the use of compressed air to clean floors and other surfaces is restricted. When vacuuming methods are used, take special precaution when emptying the vacuum to minimize the re-entry of lead into the workplace atmosphere. Where vacuuming methods are not feasible, shoveling, dry or wet sweeping, and brushing are acceptable.

Administrative Controls & Practices

Based on the specific site lead assessment, the company will implement a job rotation schedule as one means of reducing an employees TWA exposure to lead. The schedule includes the name or identification number of each effected employee, the duration and exposure levels at each job or work station where effected employees are located, and any other information useful in assessing the reliability of the administrative controls used to reduce potential lead exposure.

MEDICAL SURVEILLANCE

The medical surveillance program is part of the comprehensive approach to the prevention of lead related disease. Its purpose is to supplement the lead program that is aimed at minimizing airborne concentrations of lead and sources of ingestion. Only medical surveillance can determine if the provisions of the lead program have effectively protected an employee. Periodic medical surveillance of individual employees will help detect those failures in the lead program and engineering techniques.

Biological Monitoring

The initial phase of the medical surveillance program includes blood-lead and zinc level tests. Biological monitoring will be made available to all employees who are exposed in excess of the action level for more than thirty days a year:

- At least every six months.
- If the last blood sampling and analysis indicated a blood lead level at or above
- 40 ug/100g of whole blood, monitoring will continue every two months.
- Monitoring will continue until two consecutive blood samples and analysis indicate a blood lead level below 40 ug/100g of whole blood.

Written notification of test results will be given to employees within five days indicating blood lead levels and be given medical removal protection benefits when blood sampling and analysis indicate a blood lead level at or above 40 ug/100g of whole blood.

Medical Examinations and Consultations

The second phase of medical surveillance is medical examinations and consultations for employees who meet the following conditions:

- Employees who are exposed in excess of the action level for more than thirty days a year.
- At least annually for each employee for whom a blood-sampling test conducted at any time during the preceding 12 months indicated a blood level at or above 40 ug/100g.
- Prior to the assignment for the first time to an area in which airborne concentrations of lead are at or above the action level.
- As soon as possible, upon notification by an employee, that he/she has developed signs and symptoms commonly associated with lead intoxication, or desire medical advice concerning the effects of current or past exposure to lead and the ability to procreate a healthy child.
- As medically appropriate for each employee either removed from exposure to lead due to risk of sustaining material impairment to health, or otherwise limited pursuant to a final medical determination

A licensed physician will perform all medical examinations and a laboratory licensed by the Center for Disease Control will perform consultations, sampling and analysis tests.

MEDICAL REMOVAL PROTECTION

Excessive lead absorption subjects employees to increased risk of disease. Medical Removal Protection (MRP) is a means of protecting employees when, for whatever reasons, such as engineering controls, work practices, and respirators, have failed to provide the needed protection. MRP involves the temporary removal of an employee from his or her regular job to a place of lower exposure without loss of earnings, seniority, or benefits.

POSTING WARNING SIGNS

A warning sign must be illuminated, kept clean, and posted in work areas where the exposure to lead exceeds the PEL. The sign must read WARNING - LEAD WORK AREA - POISON - NO SMOKING OR EATING.

EMPLOYEE INFORMATION & TRAINING

Information and training will be given to all employees who may be exposed to lead above the action level, or who may suffer skin or eye irritation from lead. The training program will inform employees of the following:

- Specific hazards associated with their work environment
- Personal protective equipment
- Lead exposure
- Dangers of lead
- Health hazards associated with lead overexposure
- Employee rights under the lead standard

Documentation of employee information and training is kept on file at the corporate office.

RECORD KEEPING

The following records will be kept on file at the corporate office or job sites, if applicable:

Exposure monitoring for airborne lead

- Name and job classification of employees measured
- Details of the sampling and analytic techniques
- Results of the sampling
- Type of respiratory equipment worn
- Records will be kept on file for 40 years or for at least 20 years after termination of employment, whichever is longer

Biological Monitoring & Medical Evaluations

- Names of employees and social security numbers
- Physicians written opinion
- Copy of exam results
- Records will be kept on file for 40 years or for at least 20 years after termination of employment, whichever is longer

Temporary Removal

- Name and social security number
- Date of removal and return
- How the removal was or is being accomplished
- Whether or not the removal was an elevated blood lead level
- Kept for duration of employment

Job Rotation Schedules

- Name and identification number of each effected employee
- Duration and exposure levels at each job or work station where each affected employee is located
- Any other information useful in assessing the effectiveness and reliability of the rotation schedule

Lead Assessment Form

- Description of the facility and potential lead exposure areas
- Job description of employees working in the potential lead exposure area
- Any specific operating and maintenance procedures
- Any engineering controls necessary or in place to prevent potential exposure to lead
- All air and emissions monitoring results of the area are copied for company records
- Any specific protective clothing and respiratory protection required
- Any job specific rotation schedules
- Necessary hygiene facilities and practices
- Mandatory housekeeping and cleaning practices
- All mechanical ventilation will be evaluated for effective performance
- Identification of safe work practice controls

Acknowledgment of Training Form

- Documentation of employee training

Note: This program must be updated every six months.

BEE STEEL, INC.

PERSONAL PROTECTIVE EQUIPMENT

PURPOSE

To ensure the use of appropriate company approved personal protective equipment wherever and whenever there is a potential for exposure, either real or assumed, to hazardous working conditions, or where a hazardous condition exists and a need is indicated for using such equipment.

SCOPE

This procedure applies to all employees within the company.

REFERENCES

- 1 OSHA 29 CFR 1926 & 1910
- 1 Applicable Current ANSI Standards

PROCEDURE

The company reserves the right to select and/or approve all personal protective equipment to be issued and used by its employees and only such equipment issued or approved will be allowed on its job sites. Failure to comply with this procedure will result in disciplinary action up to and including termination.

Personal Work Clothing

The minimum work clothing that is acceptable for all employees is long pants, good work shoes or boots, and a shirt that completely covers the worker's shoulders and provides adequate protection against such hazards as concrete splash, abrasions to the skin, oil or grease spills, and slag from welding or cutting. Do not wear loose clothing, rings, watches, necklaces or long hair, all of which may catch in power driven equipment. Tank top type or sleeveless shirts are not allowed on company projects. A minimum of 4-inch sleeves is required.

Welders should be cautioned against wearing any type of highly flammable clothing, such as polyester, double-knit, etc. Wool and specially treated cotton are two natural fibers that are fire-resistant and

comfortable. Heat-resistant material, such as leather, is used to protect against dry heat, flames, and molten material. Fire-resistant clothing also protects from high workplace temperature and electrical operations.

Rubber and rubberized fabrics, neoprene, and plastics protect against some acids and chemicals. Disposable chemical suits are used to protect against dusty materials and materials that splash. For materials that are extremely toxic, a fully encapsulated suit may be necessary.

Eye and Face Protection

To prevent possible eye and face injuries suitable eye protection must be worn. Potential eye and face injuries occur from flying objects, liquid chemicals, acids or caustic liquids, molten metal, chemical gases or vapors, and light radiation. Eye protection must provide adequate protection, be reasonably comfortable, fit snugly, be durable, capable of being disinfected and cleaned, kept sanitary and in good repair.

It is important to use the proper shade lenses when working with injurious light energy. Welders must wear a welder's hood with lenses that have the correct color density for the type of welding involved. Welder's helpers must wear the same, or at the minimum, must wear burning goggles with the correct color density.

Eye and face protection purchased prior to July 5, 1994 must be in accordance with ANSI Z87.1-1968 and any eye or face protection purchased after July 5, 1994 must comply with ANSI Z87.1-1989. If you have questions about eye or face protection ask your supervisor or refer to the manufacture instructions.

Foot & Leg Protection

Most foot injuries occur from employees not wearing protective footwear. The typical foot injury is caused from objects falling fewer than 4 feet. For protection from falling or rolling objects, sharp objects, molten metal, hot surfaces, and slippery surfaces, employees should use appropriate foot guards. The wearing of sneakers, sandals, or shoes that have been slit or have holes cut in them, will not be permitted.

Protective footwear purchased prior to July 5, 1994 must comply with ANSI Z41.1-1967 and protective footwear purchased after July 5, 1994 must comply with ANSI Z41-1991.

Hand & Arm Protection

Arm and hand protection is used to prevent skin contact and absorption with potentially harmful materials, to prevent burns, and electrical shock. Where needed, workers should wear work gloves in good condition that are suited to the type of work involved. Some of the factors taken into account when gloves were selected are the toxic properties of chemicals handled by employees, the degree of dexterity required, duration, frequency, degree of exposure to the hazards, and physical stress that will be applied. The company relies on the manufacturers standard test procedures for hand and arm protection performance characteristics.

It is important to wear the right type of glove for the task. During material handling leather gloves shall be worn. Make sure they fit properly, not too tight or too loose. They should be able to be removed quickly.

Hard Hats

Head injuries are caused by falling or flying objects, or by bumping the head against a fixed object. Head protection will accomplish two things, resist penetration and absorb the shock of a blow. The shell of the hard hat is made of a material hard enough to resist the blow. The shock absorbing lining is composed of a headband and crown straps to keep the shell away from the skull. Headband assemblies must be in good condition and should be exchanged whenever they become broken or weakened. The area between the top of the headband and the top of the hard hat should never be used for storage. Head protection shall be worn properly with the *brim in front*.

All employees that wear company issued hard hats must wear them at all times when working on construction projects or areas of an existing facility that have been designated as a “Hard Hat Area.”

Hard hats that have been altered will not be permitted, nor will those that have been altered by the addition of any items on the outside of the hat other than safety, or site stickers. When it is necessary to use additional personal protective equipment that must be attached to the hard hat, only those hard hats designed for this purpose may be used. Protective helmets for electrical workers must meet Z89.2-1971. Protective helmets purchased after July 5, 1994 shall meet ANSI requirements Personal Protection-Protective Headgear for Industrial Workers Z89.1-1986.

Respiratory Protection

Company issued respiratory protective devices, appropriate for the hazard, must be used where airborne contaminants, such as fibers, dust, smoke, vapors, and mists exist and may exceed acceptable levels. Respiratory protection shall be worn according to the task or job, where exposure exceeds the Permissible Exposure Limit (PEL), in regulated areas of the facility, and in emergency situations. Respirators shall not be manipulated and shall meet ANSI standards. Respiratory protective devices must be used in accordance with the provisions of the company Respiratory Protection Program.

Hearing Protection

The primary objective of hearing protection is to prevent exposure of personnel to excessive noise levels and thereby preventing hearing loss or impairment during the course of employment. Excessive noise levels can create physical and psychological stress. There is no cure for hearing loss so hearing conservation is the only way to protect employees and avoid hearing damage. Our employees shall not be exposed to more than an average of 90 db over an 8-hour period, and hearing protection is required when noise is above 85 db. Hearing protection will be provided whenever necessary and training in the proper use and care will be provided. For more specific information refer to the Hearing Protection Program.

FILTER LENS SHADE NUMBERS FOR PROTECTION AGAINST RADIANT ENERGY

WELDING OPERATION	SHADE NO.
Shielded metal-arc welding 1/16, 3/32, 1/8, 5/32 inch diameter electrode	10
Gas-shielded arc welding (non-ferrous) 1/16, 3/32, 1/8, 5/32 inch diameter electrodes	11
Gas-shielded arc welding (ferrous) 1/16, 3/32, 1/8, 5/32 inch diameter electrodes	12
Shielded metal arc welding 3/16, 7/32, 1/4 inch diameter electrodes	12
Shielded metal arc welding 5/16, 3/8 inch diameter electrodes	14
Atomic hydrogen welding	12 to 14
Carbon arc welding	14
Torch soldering	2

Torch brazing	3 or 4
Light cutting, up to 1 inch	3 or 4
Medium cutting, 1 inch to 6 inches	4 or 5
Heavy cutting, over 6 inches	5 or 6
Gas welding (light), up to 1/8 inch	4 or 5
Gas welding (medium), 1/8 inch to ½ inch	4 or 5
Gas welding (heavy), over ½ inch	6 or 8

EYE HAZARD & PROTECTION APPLICATIONS CHART

OPERATION	HAZARDS	PROTECTORS
Acetylene-Burning Acetylene-Cutting Acetylene-Welding	Sparks, harmful rays molten metal, flying particles	5, 6, and 7
Chemical handling (for severe exposure add 8)	Splash, acid burns	3
Chipping (for severe exposure add 8)	Flying particles	1, 2
Electric (arc) (in combination with 1)	Sparks, intense rays	8 with tinted lens
Welding (in combination with 1)	Molten metal	8 with tinted lens
Furnace Operations (for severe metal exposure add 8)	Glare, heat, molten	5, 6, 7
Grinding-Light (for severe exposure add 8)	Flying particles	1, 2
Grinding-Heavy (for severe exposure add 8)	Flying particles	2
Laboratory (for severe glass breakage exposure add 8)	Chemical splash	3
Molten Metals (8 in combination with 1 in tinted lenses)	Heat, glare, sparks, splash	5, 6
Spot Welding (limited tenses advisable, for severe exposure add 8)	Flying particles, sparks	1,2

Refer to the following for appropriate protectors:

1. Safety spectacles with side shields
2. Goggles, flexible fitting, regular ventilation
3. Goggles, flexible fitting, indirect ventilation
4. Face shield, plastic
5. Welding goggles, eyecup type, tinted lenses
6. Welding goggles, cover spec type, tinted lenses
7. Welding goggles, cover spec type, tinted plate
8. Welding helmet

BEE STEEL, INC.

MATERIAL STORAGE & HANDLING

PURPOSE

The purpose of this procedure is to provide guidelines enabling individual supervisory personnel to develop and implement procedures for the safe handling and storage of materials.

SCOPE

This procedure applies to all material storage and handling activities by the company.

RESPONSIBILITY

Company personnel will initiate a material-handling plan prior to work activity.

SAFE WORK PRACTICE

Recognizing that proper storage and material handling procedures and methods will provide for conservation of materials and equipment, increase productivity by providing a smooth flow of materials as needed, and reduce the number of accidents and injuries usually associated with this function, the following practices must be followed:

- Both temporary and permanent storage should be neat and orderly. When planning material storage, a minimum of 24 inches of clearance must be allowed under sprinkler heads. Automatic sprinkler controls and electrical panel boxes must be kept free and unobstructed.
- There must be unobstructed access to fire hoses and extinguishers, and access to emergency exits and aisles shall always be maintained. Areas immediately outside of emergency exits shall also be left clear for egress.
- Materials shall be segregated as to kind, size, and length, and placed in neat, orderly piles that are safe from falling. If the piles are high, they shall be stepped back as the height increases, and shall be secured by cross piling or cross tying. Piles of materials shall be arranged so as to allow for passageways.

- Storage of materials will be facilitated and hazards reduced, with the use of storage bins and racks that are in good condition. Storage racks shall be secured to the wall and/or floor as well as to each other. Damaged racks shall not be used for storage and employees shall not be allowed to climb racks.
- Depending on the value of the materials in storage, it may be advisable to provide some type of security to enable the preservation of the materials.
- Supervisors must give advance consideration to the size, shape and weight of materials to be handled and plan the most efficient and safest method to accomplish the task. Proper tools shall be provided for the job and alternate methods should be considered.
- Employee selection should be considered so that work assignments will match the employee to the job in terms of knowledge and physical abilities. Whenever unusual or hazardous operations are to be performed, prior to commencing the work, employees shall be warned about all possible hazards and given specific safety instructions by their immediate supervisor.
- Special precautions shall be taken to prevent hernias and back injuries. Employees naturally tend to bend at the waist and attempt to lift loads with their hands and arms. This is improper and causes injuries, Instead, employees should be cautioned to bend the knees and lift with their legs. Avoidance of these injuries begin with instructing the employee in the correct way to do the work and changing any bad lifting habits. Employee's first efforts following safety instruction should be closely monitored to ensure that proper lifting methods are used.
- Maintain proper storage methods and designated areas for flammable and combustible liquids and posting of warning signs, tags, or bulletins as may be required.
- Maintain proper stacking of materials as regard to size, type, and length in piles, shelves, racks, or bins as necessary.
- Maintain good housekeeping procedures throughout job site at all times and proper disposal of scrap and waste materials.
- Provide the necessary grounding and bonding required for specific materials.
- Maintain proper receiving and dispensing of incoming and outgoing materials that will include chocking and blocking of trucks during loading and unloading operations.

- Provide proper personal protective equipment that may be necessary for certain products.
- Ensure that only properly trained personnel are used in the handling of hazardous materials and to assure that proper material handling methods are used.
- Provides prompt reporting of any unsafe conditions or practices that cannot be corrected.

BEE STEEL, INC.

HOUSEKEEPING AND SANITATION

PURPOSE

To provide the basic guidelines necessary for a good housekeeping program which will be a part of the daily routine at each division or jobsite, with clean-up being a continuous operation.

REFERENCES

29 CFR 1926.51
29 CFR 1910.22

RESPONSIBILITY

All company personnel will follow this procedure.

SAFE WORK PRACTICE

Good housekeeping is an important element of accident prevention and must be a primary concern to all superintendents and foremen. Housekeeping will be planned at the beginning of a job and will be carefully supervised and followed through to the final clean up. A clean and orderly work place will not only contribute greatly to the prevention of accidents and injuries, but will also lend itself to the proper utilization of available facility space.

- The area supervisor or foreman is responsible for good housekeeping. Regardless of the size of the work force, housekeeping shall not be left undone. Duties shall be assigned to one or more responsible persons.
- All materials shall be maintained in neat stockpiles for ease of access. Aisles and walkways shall be kept clear of loose materials and tools. Combustible material shall not be stored under stairways. Clean up loose materials, waste, etc., immediately. This is especially important on scaffolds and in the vicinity of ladders, ramps, stairs, and electrical or mechanical equipment. Tools and loose materials shall be removed immediately if a hazard is created.
- Empty bottles, containers, papers, and discarded equipment shall not be allowed to accumulate where lunches are eaten on the job site. Trash containers shall be provided with covers and their use enforced. Spills of oil, grease, or other liquids shall be removed immediately or sprinkled with sand, cleaned up, and removed.

- An effective means of preventing litter is the provision of suitable receptacles for waste, scrap, etc. Combustible waste, such as oily rags, paper, etc., shall be stored in a safe place, such as a covered metal container, and disposed of regularly as a hazardous waste. All containers shall be labeled as to permissible contents. Common trash that does not contain any hazardous waste, shall not be stored.
- Adequate lighting shall be provided in or around all work areas, passageways, stairs, ladders, and other areas used by personnel.
- There must be unobstructed access, at all times, to such areas as electrical panels, safety disconnect switches, fire extinguishers, emergency exits, etc.
- Typhoid fever, dysentery, and other diseases could be caused by contaminated drinking water by the lack of proper sanitation at the job site. It is essential that the provision of adequate sanitary facilities to accommodate the number of employees involved be one of the first operations initiated at the job site.
- Temporary toilets shall be maintained in accordance with local, state, or federal ordinances. Toilets shall be constructed so as to shield the occupants from view and protect against weather and falling objects. They shall be lighted and ventilated, and all windows and vents screened. Adequate tissue shall be provided. All toilet facilities shall be cleaned and emptied when necessary.
- An adequate supply of fresh, portable water, from a city water line if possible, shall be provided at a readily accessible location for drinking purposes. Portable water containers used to dispense drinking water must be capable of being tightly closed, sealed and equipped with both a tap and a paper cup dispenser. Where paper cups are supplied, a receptacle for disposing of the used cups should be provided. The use of dippers or a common drinking cup for dispensing drinking water is prohibited. When city water is not used, periodic testing of the water is required.
- Any container used to distribute drinking water must be clearly marked as to the nature of its contents and not used for any other purpose. If for any reason water which is unfit for human consumption is provided at the jobsite, it must be identified and labeled to clearly indicate that the water is unsafe for drinking, washing, or cooking purposes. Any employee observed removing the lid of a water container, except for those employees assigned to sanitize and clean such containers, shall be subject to disciplinary action including possible discharge. Portable water containers must be cleaned daily.

BEE STEEL, INC.

POWDER ACTUATED TOOLS

PURPOSE

To establish procedures for the safe use of powder actuated tools.

SCOPE

This procedure applies to all company divisions, on-site construction and maintenance projects.

REFERENCES

OSHA 29 CFR 1926.302

ANSI A1 0.3 - 1977

RESPONSIBILITY

All management will enforce this procedure where powder actuated tools are used and ensure that those employees under their direction have been trained and certified in the safe use of this tool. Employees who use powder-actuated tools will be trained and certified in their use and how to follow the project's safety requirements and manufacturer's recommendations when operating this type of tool.

SAFE WORK PRACTICE

- All manufacturers' recommendations and applicable local laws governing the proper use, inspection and maintenance of powder-actuated tools shall be followed.
- Only authorized, certified employees will be allowed to use powder actuated tools.
- General precautions apply to all types of powder actuated stud guns.
- The explosive powder-actuated tool and ammunition must be kept in a locked box at all times (other than when being used) to prevent unauthorized use.
- Storage of the tool, ammunition and studs shall be controlled so that only AUTHORIZED, TRAINED personnel can withdraw them for use.

- The manufacturer’s representative of the tool to be used shall train, qualify, and certify site employees in the use and maintenance of the stud gun.
- A current certification card for the powder-actuated tool being used must be in the operator’s possession while tool is being used.
- The powder-actuated tool shall not be used where the stud is to be driven into surface-hardened steel, cast iron, glazed brick or tile, marble, granite, live rock or similar brittle materials.
- Tools must not be used in any location where explosives, flammable gases, vapors or dusts are present.
- The tool operator and any nearby employees must wear face shields and goggles when the tool is being used. Ear protection shall be used 100% of the time this tool is in use. Other co-workers in the near vicinity shall wear ear protection.
- The utmost care must be exercised to insure that ammunition, studs, nails, etc., are of the proper specification.
- The tool must at all times be equipped with the proper ricochet or spall guard.
- Signs shall be posted warning of the use of powdered actuated tools in use.

High Velocity Guns

- Only the “captive stud” type gun should be used. Guns capable of firing a stud into free flight at high velocity are prohibited.
- No stud is to be driven closer than three inches to the edge of brick, concrete or masonry surfaces because of their tendency to split or crack. Exception to this rule may be made where steel safety shields are placed on the sides of the surfaces as in the case of concrete curbs to prevent flying pieces.
- In case of misfire, the tool shall be kept in operating position for one full minute and then placed in vertical position muzzle down while the charge is removed.
- The tool shall never be pointed at anyone. The line of fire, whether up, down, or across, must be clear of personnel. Do not assume the stud will not shoot all the way through something.
- Studs shall never be driven through pre-drilled or pre-punched holes in fixtures or material without a special guard designed for this type of operation.

Low Velocity

- This type gun employs the principle of a powder actuated captive piston (high mass) driving a free stud at low velocity. Stud-driving energy is derived from piston inertia. Once free of the piston, the stud alone has insufficient inertia to produce free flight, ricochets, penetration, etc. This type gun is recommended from both safety and productivity standpoints.
- Adherence to the general precautions in the procedure section will afford adequate protection.

BEE STEEL, INC.

HAND & POWER TOOLS

PURPOSE

The purpose is to provide guidelines for the safe use of hand and power tools.

SCOPE

This procedure applies to all operations within this company.

REFERENCES

29 CFR 1910.241 to 1910.244

29 CFR 1926.300 to 1926.305

SAFE WORK PRACTICE

- Use hand and power tools only for the purpose for which they were designed.
- Use hand and power tools that are in good condition. Worn or broken tools must be repaired or replaced.
- Always use appropriate safety equipment.
- Store tools that are not in use. Proper storage includes toolboxes, tool racks, and cabinets.
- Do not leave tools on overhead work areas where they may fall and strike someone below.
- Do not carry a sharp or pointed tool in pockets or belts unless the point or edge is protected with a cover.
- Follow all manufacturers instructions regarding the safe storage, operation, and maintenance of hand and power tools.
- Do not use a power tool unless you have been trained on how to use it properly and safely.
- All guards must be in place before operating a power tool.
- Appropriate eye protection must be worn.

- Do not wear loose fitting clothing or jewelry when using power tools.
- Disconnect the tool before changing blades, bits, etc. Remove chuck keys, etc. before using a power tool.
- Disconnect power tools from the power source by pulling out the plug—do not pull on the power cord.
- Make sure that tools are either double insulated, or have three prong plugs with grounded extension cords and receptacles.
- Keep your finger off the trigger and make sure the switch is “off” before plugging in a tool.
- Do not use electric tools that have worn or damaged plugs or cords.
- Secure small pieces of work with a clamp, or in a vise.
- When using power tools, keep the work area free of any trip hazards, or slippery conditions.
- Never use compressed air to blow off yourself, equipment, or clothing; use a brush.

GUARDS

- All moving parts of power tools need to be safeguarded. Moving parts are, but not limited to, belts, gears, shafts, pulleys, sprockets, spindles, drums, fly wheels, chains, or other reciprocating, rotating, or moving parts of equipment. These types of parts must be guarded if exposed or contact is a possibility.
- Guards should be provided to protect the operator and others from the point of operation, nip points, rotating parts, and flying chips.
- **Safety guards must never be removed when a tool is being used.** For example, portable circular saws and grinders must be equipped with guards. An upper guard must cover the entire blade. A retractable lower guard must cover the cutting edge, except when it makes contact with the work material. The lower guard must automatically return to the covering position when the tool is withdrawn from the work.
- Anytime an adapter is used to accommodate a two-hole receptacle, the adapter wire must be attached to a known ground. The third prong should never be removed from the plug.

DOUBLE INSULATED TOOLS

Double insulated tools are protected in two ways:

- Normal insulation on the wires inside.
- A housing that cannot conduct electricity to the operator in the event of a malfunction.

POWERED ABRASIVE WHEEL TOOLS

- Abrasive grinding, cutting, polishing, and wire buffing wheels present special safety problems because they may throw fragments.
- Before an abrasive wheel is mounted it should be inspected and sound or ring tested to be sure that it is free of cracks or defects. Tap the wheel with a non-metallic instrument. If it sounds cracked or dead, it could fly apart. A good wheel will give a clear metallic tone or ring.
- Be sure the wheel fits freely on the spindle. The spindle nut should be tight but, the flanges should not be distorted.
- Due to the possibility of a wheel disintegrating (exploding) during start-up, the employee should never stand directly in front of the wheel as it accelerates to full operating speed.
- Portable grinding tools need to be equipped with safety guards to protect employees not only from the moving wheel surface, but also from flying fragments in case of breakage. In addition, when using a powered grinder always use eye protection, turn off the power when not in use, and never clamp a hand-held grinder in a vise.

PNEUMATIC TOOLS

- Pneumatic tools are powered by compressed air. Examples are, but not limited to, chippers, drills, hammers, and sanders.
- Getting hit by one of the tools attachments or by a fastener is one of the main hazards.
- Eye and face protection is required for employees working with pneumatic tools.
- Proper hearing protection is required when using pneumatic tools.
- Pneumatic power tools must be securely attached to the compressed air hose.

- Do not make adjustments to pneumatic tools until you are sure that no air pressure is being supplied to the hose or tool.
- Do not hoist, lower, or carry a tool by the hose.
- Follow the manufacturer's guidelines for safe operating procedures.
- Locate all air hoses so they do not present a tripping hazard.

BEE STEEL, INC.

SCAFFOLD SAFETY

PURPOSE

To provide safety guidelines for erecting and dismantling elevated work platforms.

SCOPE

This procedure applies to all company divisions, on-site construction and maintenance projects.

DEFINITIONS

Fixed Scaffolds include the following; tubular welded frame, bracket scaffolds, tube and coupler (tube-lox) scaffolds, woodpole scaffolds and trestle scaffolds.

Suspended Scaffolds include the following: two-point suspended scaffolds, multilevel suspended scaffolds, floats, needle-beam scaffolds, boatswain's chair and electric hoist platforms.

Qualified Person means a person with specific training, knowledge and experience in the area that the person has the responsibility and authority to control.

REFERENCES

OSHA 29 CFR 1926.451 - Scaffolding
ANSI A 10.8 - Safety Requirements for Scaffolding

RESPONSIBILITY

Supervision is responsible for implementing and administering this procedure. In addition, supervision is in charge of the scaffolding erection and are responsible for the work being performed

SAFE WORK PRACTICE

- Any elevated work presents a potential fall hazard; therefore, it is essential that precautionary measures are thorough.
- All working platforms must be capable of sustaining a minimum-working load of 75 psf on 6-ft spans or have a safety factor of 4 to 1 for the intended load.
- Posts shall be plumb, and scaffold platforms shall be level.
- Scaffolds less than 3 feet wide shall be secured according to the manufacturer's recommendations or secured at the closest horizontal member for the 4:1 height and be repeated every 20 feet or less in height. Scaffolds 3 feet wide or greater shall be secured every 26 feet or less.
- Outriggers may be used in lieu of tying off, or scaffolds may be clamped together so that the height does not exceed three times the smallest base dimension without additional stabilization.
- A qualified person shall determine the structural integrity of structural steel, reinforcing steel, and concrete or building members prior to the attachment of scaffolds by bracing or tie off.
- Where persons are required to work or walk under scaffolding, a screen guard of No. 18 gage $\frac{1}{2}$ in. wire mesh or equivalent shall be provided between the toe board and handrail.
- All employees shall tie off with a safety harness when there is no or an incomplete handrail, when there are openings over 18 inches in the working platform, or when on suspended working platforms.
- Swinging stages, floats, and boatswain's chairs shall be tested before using (test by applying a dead load with unit close to floor or ground).
- Crews requiring scaffolds shall request them well in advance to avoid delays and to allow time to provide the best scaffold for the job.
- Scaffold erection crews shall inspect all components for defects as the erection proceeds. Any components found to be defective shall be set aside and tagged for repair or disposal.
- Daily inspections shall be performed under the direction of competent supervision responsible for the work being performed. All defects shall be corrected at once or have defective tags attached.

- All lumber used in scaffolding should be fire-retardant treated except when otherwise specified in writing by the companies division or client. Fire retardant may be applied by pressure treatment or fire retardant paint. Non-combustible scaffolding such as aluminum pick boards or aluminum grating should be used whenever it is practical to do so.

FIXED SCAFFOLDS REQUIREMENTS

Fixed scaffolds include tubular welded-frame scaffolds, bracket scaffolds, tube and coupler (Tube-lox) scaffolds, and trestle scaffolds.

Tubular Welded-Frame Scaffolds Requirements

- Scaffolds of 10 ft or more in height shall include diagonal braces, handrails, mid-rails, toe boards, and 2 in. x 10 in. or 2 in. x 12 in. scaffold planks or manufactured scaffold decking which will provide a complete working deck without gaps or openings. Corner posts shall have the metal feet in place.
- On soft ground, wooden sills of at least 2 in. x 10 in. lumber or channel iron shall be provided. Scaffold planks shall be rough-cut undressed lumber.
- Scaffold planks shall be painted on each end for 12 in. to designate it as an inspected plank only to be used for scaffolding, and marked for overhang limits.
- When scaffold sections are erected, only scaffold pins are to be used for the corner post connections. (Do not use tie-wire or welding rods.)
- When casters are used for a rolling scaffold, they shall be locked except when the scaffold is being moved. No one shall be permitted on a scaffold while it is being moved.
- Scaffold screw jacks shall be extended in accordance with the manufacturer's recommendations but in no case shall they be extended in excess of 12 in.
- Whenever screw jacks and casters wheels are not used, metal base plates must be used for adequate base support. All supports are to be pinned and secured.
- Scaffolds shall have solid footing and shall be erected so that vertical members are always plumb and the platform is as horizontal as practical.

- Scaffold planks must have cleats, be wired down, or otherwise secured against accidental displacement.
- Wedge shims shall not be used. Work from incomplete scaffolds, when approved, will require that the employee take added precautions to meet accident prevention and fall protection requirements.
- Safety harnesses must be worn if handrails are missing or the platform is incomplete or other fall hazards exist.
- Horizontal braces of 2 in. x 4 in. lumber or equivalent shall be secured across corner posts when it is necessary to remove the diagonal braces. Diagonal braces shall not be removed from more than one section in a series of sections unless there are four braced sections between.
- Ladders shall be used if access to the scaffold platform is blocked or the scaffold climbing devices are more than 16 in. apart.
- Every scaffold higher than 50 ft. must be inspected and approved by a licensed professional engineer. This inspection shall be documented and kept on file.
- Toe boards shall be secured in a firm manner by interlocking at the corner posts with notches, wiring, nailing, U-clamping to the bearing members, or by use of approved commercial toe board systems.
- Employees gaining access to scaffolds shall have both hands free at all times and shall use the hand-over-hand method of climbing on the rungs. Employees shall not use toe boards as handholds or footholds to gain access to the platform.

Bracket Scaffolds Requirements

- Where more than one layer of horizontal bars has been placed and conditions permit, the scaffold shall be secured to an inside horizontal bar.
- If conditions do not permit attaching the bracket scaffold to an inside horizontal bar, the scaffold shall be secured with a minimum of three 3/8-in. diameter U-bolts attached to each end and middle of the outer horizontal or vertical bar. Additionally, No. 9 wire shall be placed at a minimum of every fourth tie location.
- The horizontal reinforcing bar shall be secured to a vertical reinforcing bar that is either embedded in concrete or has been spliced by an approved method.

- Each scaffold shall have a 4 ft x 1/4 in. safety chain attached to the ends of the scaffold and secured to an inner rebar other than the bar that is supporting the scaffold.
- Guardrails and toe boards shall be installed on all open sides and ends of scaffolds.
- No more than three persons plus the necessary tools and equipment shall be permitted on a single scaffold section at any one time. The load is not to go beyond the scaffold's designed capacity. Bracket scaffolds shall be constructed to support 1,550 lb. and the capacity shall be posted on the scaffold.
- Employees working with safety harnesses shall have the lanyard secured above the point of operation, but under no circumstances shall it be attached to the scaffold.
- Scaffolds may be painted caution yellow to give the adjacent crane operators a better perspective when working close to them during the day or night.

Tube and Coupler (Tube-Lox) Scaffolds

- Posts shall be erected on suitable bases and maintained plumb.
- Diagonal cross bracing shall be provided horizontally every third section, vertically every fourth section, and whenever posts are farther apart than 7 ft, the braces shall be at 45 degree angles.
- Runners shall be erected along each side vs. the scaffold at the bottom and top of each section.
- Bearers and braces shall extend past the posts a minimum of 4 in., but not more than 12 in. Extensions of these shall not protrude into walking or climbing areas.

Trestle Scaffolds

- Trestle scaffolds shall have at least a 6 in. ridgepole and should be limited to one level only.

SUSPENDED SCAFFOLDS REQUIREMENTS

Suspended scaffolds include two-point suspended scaffolds, multilevel suspended scaffolds, floats, needle-beam scaffolds, boatswain's chairs, and electric hoist platforms.

Two-Point Suspended Scaffolds

When two-point suspended scaffolds are used, the following rules will apply:

- These scaffolds shall have standard toe boards, mid-rails and handrails.
- A lifeline for each employee shall be provided and secured independently from the scaffold support lines.
- Employees shall be tied off at all times when on the scaffold, using a triple sliding hitch or catch hardware. Employees must be provided with a safe method of moving to and from the scaffold.
- When moving the scaffold root supports, co-workers must remain behind the guardrail or be tied off with a safety boil to an independent support if there is no guardrail.
- Protection for areas below the work shall be provided by the use of signs and barricades and screened staging, when applicable.
- Do not lower the scaffold below the point of three turns of the supporting cables on the drum of a swinging stage scaffold. Supporting cables shall be marked or painted to include limits.
- Check the loading on the stage one foot off the ground before using it.
- Outrigger beams, when required, should extend from 1 ft to 6 ft beyond the edge of the building, and the inboard length from the fulcrum should be at least 1½ times the outboard length from the fulcrum. A mechanical stop to retain the supporting cables shall be secured at the outer end of the outrigger.
- If cornice hooks are used, each hook must be tied back to something solid. All hooks must be latched.

Multilevel Suspended Scaffolds Requirements

- Multilevel suspended scaffolds are used primarily for large-area vertical work such as installation of siding.
- Multilevel suspended scaffolds shall have two lifelines attached to the scaffold, independent of the supporting lines.
- Employees on the top stage will tie off with a safety harness to an independent lifeline.
- Employees on the lower stages will tie off with a safety harness to the scaffold itself.

Floats

- Floats shall be in accordance with standard rigging practices, using a 1 in. manila rope, or equivalent. The supporting ropes shall be run diagonally under the platform from corner to corner.
- Employees working on floats shall tie off with a safety harness before getting on a float and untie after getting off a float.
- Floats are to be constructed to the standard 4 ft. x 6 ft. size, and additional support shall be given to the platform with diagonal 1 in. x 4 in. braces on the bottom.
- The platform shall be of 3/4 in. plywood or equivalent, with 4 in. x 1 in. minimum edging on top to prevent items from rolling off.

Needle-Beam Scaffolds

- Needle-beam scaffolds shall be supported by 1 in. manila rope, ½ in. wire rope cable, 1/4 in. or high test chain or equivalent, using a standard scaffold hitch or eye splice, with supports on the beam not to be more than 10 ft. apart for the 4 in. x 6 in. timbers.
- Needle-beams shall be construction grade lumber, with a minimum of 1,500-psi fiber stress.
- The platform span between needle-beams shall not exceed 8 ft. when 2-in. scaffold plank is used. The overhang of scaffold planks shall not be less than 6 in. or more than 12 in.
- Handrails and toe boards shall be used, and employees shall wear a safety harness.

Boatswain's Chairs

- Seats shall be a minimum of 12 in. x 24 in. and 2 in. thick. Cleats fastened on the underside shall prevent splitting of the board.
- Boatswain's chairs shall be suspended with the standard 5/8-in. nylon rope boatswain's sling through four corner holes.
- The employee shall be tied off to an independent lifeline with a safety harness.

Electric Hoist Platforms

- When working platforms are suspended from electric hoist mechanisms and used to raise and lower employees to and from working positions, a safety harness shall be worn and properly attached to a lifeline secured independently from the platform support line.
- Such platforms shall have sides 42 in. in height above the platform.
- Prior to each use, the hoist mechanism shall be visually inspected and the load support checked at 1 ft. off the ground.
- The cable and the lay of the cable on the spool shall be checked constantly.

Scaffold Erection and Dismantling Requirements

A risk of serious accident may exist when scaffolds are being erected or dismantled. All individuals working on scaffolds at these times shall comply with the following safety rules and regulations:

- Employees must keep both hands empty for secure handholds when moving above on scaffolds.
- Pockets, pouches, and tool belts are to be used to carry the necessary tools for the work.
- Scaffold members shall be hoisted or lowered with a hand line or passed from and to hand. Throwing items up to employees or dropping them is not permitted.
- Constant fall prevention measures must be maintained. Provisions shall be established for using a safety harness and working on firm scaffold decks when this can be done safely.
- Scaffold feet shall be established on a firm and level base of support.

- When scaffolds are to be secured to fixed structures or outriggers are to be used, they shall be installed as soon as possible. When dismantling a scaffold, these should be left on as long as is practical.
- The coordination of this activity with surrounding operations and environment shall be given priority consideration.

MOUNTING & DISMOUNTING SCAFFOLDS

This activity is the most common cause of scaffold accidents. Therefore, all individuals mounting and dismantling scaffolds shall comply with the following safety rules and regulations:

- Do not carry objects in hands, but keep both hands empty for climbing handholds.
- Step only on secured ladder or access rungs.
- Give full attention to stability while getting on and off the working platform. Do not use the toe board as a handhold or foothold.
- Pay attention to each step and handhold; most falls occur near the top of the ladder or near the bottom.

SCAFFOLD TAGGING

General Scaffold Tagging Requirements

This scaffold tagging procedure is designed to ensure the safe use of all jobsite scaffolds.

- A scaffold that is ready for use shall be tagged with either a green or a yellow tag.
- A green scaffold tag designates a complete scaffold, as defined by the manufacturer.
- A yellow scaffold tag designates a scaffold that is not complete but which is altered to suit a specific job and may be used safely. A yellow scaffold tag shall detail the reason or reasons the scaffold is incomplete and safety measures needed.
- If scaffold is in the process of being erected, changed, or dismantled, it shall have a red tag. A scaffold that contains a red scaffold tag shall be considered unsafe and shall not be used.
- If a scaffold has been damaged or is defective, a Red Tag must be attached.

- The yellow, red, and green scaffold tags are approximately 4 in. wide by 8 in. long with a hole centered at the top of the tag.

Installation & Removal of Scaffold Tags

- A qualified person shall determine whether a useable scaffold receives a yellow or a green tag. He/she shall be responsible for completing all pertinent information on the tag and affixing the tag to any scaffold erected under his/her supervision.
- The scaffold tag shall be affixed to each scaffold access ladder approximately 5 ft., 6 in., from its base, where it will not interfere with normal access.
- The qualified person may remove a scaffold tag from a scaffold that has been damaged, has been improperly modified, is missing components, or is deficient in any safety aspect. A red tag may be used in these circumstances.
- After a scaffold has been repaired, the qualified person shall inspect it to determine whether it is ready to be re-tagged and shall do so accordingly.
- Periodic inspections shall be performed to ensure that all tags are legible and in good condition.
- Inspection, attention, and stability are three keys to scaffold safety. No tag on scaffold shall be considered the same as a red tag.

INSPECTION AND TESTING - SCAFFOLD PLANKS

- Scaffold planks shall be inspected and tested upon receipt, prior to use, and users shall examine each plank visually prior to each use.
- Examine planks for knots, excessive grain slope, shakes, decay, dry rot, and other defects.
- Density of lumber should be equivalent to Douglas Fir and capable of supporting four times the intended load. Moisture content should not exceed 20 percent.
- All scaffold planks shall be scaffold grade or equivalent as recognized by approved grading rules.
- Planks shall be 2 in. x 10 in. or 2 in. by 12 in. heavy duty (75 psi on 6 ft. span).

- Discard the plank as a scaffold plank if evidence of a defect is noted.

SPECIAL SCAFFOLDING

Any scaffold a qualified person must approve.

STORAGE OF SCAFFOLDING

Scaffold materials shall be temporarily stored in a manner that will protect and prevent damage to them. Scaffold materials shall not be left in work areas where they obstruct traffic and/or cause fire hazards.

RECORDS

Completed tags shall be kept on file.

BEE STEEL, INC.

MOBILE CRANES

PURPOSE

This procedure provides guidance for the protection of personnel operating mobile cranes or working in the area of operation.

SCOPE

This procedure applies to all company divisions, on-site construction and maintenance projects.

REFERENCES

ASME/ANSI B30.5 Current.

RESPONSIBILITY

Management is responsible for reviewing this procedure periodically and requiring the necessary changes to keep equipment current. Supervision is responsible to implement, monitor and administer this procedure.

PROCEDURE

Equipment Inspection and Testing

- Each mobile crane will be inspected by a competent person for mechanical defects upon its arrival and before its use on the project and at 30-day intervals thereafter.
- Maintenance records will be completed and retained. A third party inspector approved by the Department of Labor will perform all annual crane inspections. When a crane has been dismantled or has had major repairs, a third party inspector approved by the Department of Labor will inspect it.
- It is recommended that the equipment be load-tested only in accordance with the manufacturer's specifications and limitations and American National Standard Institute (ANSI) B30.5 Current, Mobile and Locomotive Cranes.

- The project or any individual without the manufacturer's written approval will make no modifications or alterations that affect the capacity or safe operation of the equipment.

OPERATOR CERTIFICATION

- All mobile crane operators must be instructed in or given the opportunity to read and understand the manufacturer's Operator's Manual for assigned make and model machine, applicable OSHA and ANSI standards. The mobile crane operator must be certified to operate the specific make and model crane assigned.

OPERATIONS

- Each day the operator, prior to starting work, will check all safety features of the crane. These include but are not limited to: Fire extinguisher, Seat belts, Tire pressure, Window glass, Horn, Back-up alarm, Lights, and Signs.
- Accessible areas within the swing radius of the rotating superstructure counterweight of a crane will be barricaded to prevent employees from being struck or crushed by the counterweight unless the superstructure is elevated 7-feet or more.
- The ground shall be level to within 1 degree of the horizon. All applicable danger signs shall be posted. This includes but is not limited to: 1) Danger Electrical Hazard; 2) Swing Radius Warning; 3) Stop Warnings.
- The hand signals to be used are those prescribed by the ANSI standard applicable to each crane. Only one individual will assume the flagging duties and no other person shall flag during the lift, with the exception of a person giving an emergency stop signal.
- A copy of the manufacturer's Operator's Manual for each make and model machine must be on the project site and the manufacturer's specifications and limitations noted in it will be observed.
- In the operations and use of any hydraulic crane, when both an auxiliary and main hoist lines are revved, an anti-two blocking warning system is required on both auxiliary and main hoist lines.
- Attachments used with cranes will not exceed the capacity rating or scope recommended by the crane manufacturer.

- No person will ride the headache ball, the hook, or the load being handled by the crane. All operations involving the use of suspended personnel baskets or platforms shall comply with OSHA regulations and the crane shall be equipped with a positive action anti-two blocking device.
- Equipment will not be lubricated while in use unless it is designed for safe lubrication application while in use.
- No person(s) shall ride on the machine; the machine should not be used for personnel transportation or be equipped with a personnel carrier.

ELECTRICAL HAZARDS

A crane will not be operated, under any circumstances, where any part of the crane or load will come within 10 feet of energized electrical distribution lines rated 50 kV or below unless the following conditions are met:

- The lines have been de-energized and are grounded at the point of work.
- Insulating barriers that are not part of the hoisting equipment have been erected.
- For lines rated over 50kV, the minimum clearance between lines and any part of the machine or load will be 10 feet plus 0.4 inch for each kilovolt over 50kV or twice the length of the line insulator. The clearance will not be less than 10 feet.
- All lines will be considered energized unless the person or utility owning the lines indicated that they are not energized and that the lines are grounded at the point of operation.

TRAVELING WITH A LOAD (PICK AND CARRY)

- Traveling with a load (pick and carry) is not recommended as a means of transporting load from one location to another on the project and should be used as a last resort. Wagons, forklifts, boom trucks, and flat bed trucks should be used to transport these loads rather than “pick and carry” operations.
- Traveling with suspended loads entails many variables, i.e., the type of terrain, boom length, momentum in starting and stopping, etc. Therefore, it is impossible to formulate a single standard procedure with any assurance of safety. Thus, when traveling

with load, the operator must evaluate the prevailing conditions and determine the applicable safety precautions. No matter what, manufacturers' guidelines shall not be exceeded.

The following precautions would fall into a general category:

- DO NOT exceed rated “on rubber” capacity chart.
- Position the boom parallel to the direction of travel.
- Engage the swing (house) lock.
- Maintain as short a boom length and as low a boom angle as possible.
- Secure load off to carrier.
- Provide tag or restraint lines to snub load swing.
- Load should be carried close to ground.
- Do not start and travel until outriggers are fully stowed (retracted).
- Terrain must be smooth, firm, and level.
- Maintain travel speed suitable to terrain.
- Avoid sudden starting and stopping.
- Maintain correct tire pressure for type of tire used.
- Always use flagmen, both front and rear, to give directions and watch for hazards.
- Flagman should watch for power lines and other overhead obstructions.
- No person shall ride on the machine during “pick and carry” operations.

WIRE ROPE

Wire rope with one or more of the following defects will be removed or replaced immediately. If one wire rope of a set (pendant lines, multi-leg slings, etc.) requires replacement, the entire set of ropes will be replaced.

- In standing ropes, more than two broken wires in one lay in areas beyond end connections or more than one broken wire at an end connection.
- In running ropes, six randomly distributed broken wires in one lay or three broken wires in one strand in one lay.

- Wear of one-third of the original diameter of the outside individual wires caused by abrasion, scrubbing, flattening, or penning.
- Kinking, crushing, bird caging, or any other damage resulting in distortion of the rope structure.
- Evidence of heat damage from any cause.
- Reduction from nominal diameter of more than: 1/64 inch for diameters up to and including 5/16 inch; 1/32 inch for diameters from 3/8 inch up to and including 1/2 inch; 3/64 inch for diameters 9/16 inch to and including 3/4 inch; 1/16 inch for diameters from 7/8 inch up to and including 1 1/8 inches; 3/32 inch for diameter from 1 1/4 inches up to and including 1 1/2 inches.

NOTICES AND POSTING

- Rated load capacities, recommended operating speeds, special hazards warnings, operating notes, and special instructions will be posted on all equipment and will be visible to the operator while he/she is at the control station. Illustrations of the hand signals used in connection with the operation of equipment will be posted at the project site.

RECORDS

Maintenance records shall be maintained at the project.

BEE STEEL, INC.

VEHICLE SAFETY

POLICY

It is the policy of the company to systematically inspect, repair, and maintain all company vehicles.

SUMMARY

The company believes in getting the most out of their equipment and vehicles by investing in a regular maintenance program. A maintenance schedule promotes highway safety, prolongs the life of equipment, reduces unscheduled downtime, and reduces unscheduled repairs.

RESPONSIBILITY

For passenger cars, pick-ups, and vans, each assigned vehicle operator will be responsible for the unit's maintenance and repair.

SAFE WORK PRACTICE

- All employees operating vehicles and the passengers in the vehicles are required to wear seat belts at all times.
- Drivers must have a current, valid vehicle operator's license.
- Drivers must comply with all federal, state, and local traffic regulations.

Transporting Personnel and Material

- Personnel will not be used to support or steady loads while a vehicle is in motion.
- Pick-up truck running boards may not be ridden.
- Employees must be seated, with arms and legs within the confines of the vehicle and mount or dismount vehicles only when fully stopped.
- Personnel may not stand and ride in a moving vehicle.
- Personnel are to vacate all vehicles being loaded by a crane, backhoe, shovel, loader, etc., and are to move away from the vehicle.

- Loads extending beyond the back of a truck or wagon are to be flagged, and marked at night with red lanterns or clearance lights. Loads are to be secured to prevent any movement.
- Only three (3) people may ride in the cab of a truck. Seat belts must be used.
- When left unattended, vehicles must be shut off, and left in gear with brakes set. If vehicle is parked on a grade or incline, wheels must be chocked. Vehicles are not to be left running while unattended.
- When repair work or maintenance of any sort is performed on any vehicles, the parking brake shall be set and the wheels chocked to prevent movement of the vehicle.
- Personnel should know the mechanical condition of their vehicles at all times and communicate any problems that could develop into a breakdown.
- The vehicles should be maintained in accordance with the manufacturers' suggested guidelines and a record of the service and repairs should be maintained in the rear of the owner's manual.
- Prior to the start of each day the operator must do a basic inspection to determine fluid levels, tire pressure, cleanliness, etc. This is especially important prior to long trips.
- Monthly inspections of passenger cars, pick-ups, and vans utilizing the Drivers Daily Inspection Form. This form records the condition of critical components. Completed reports should be turned in to the Fleet Safety Coordinator for record keeping.
- If necessary, vehicles will be removed from operation until repairs are completed.

Vehicle Equipment

All vehicles used on site will be equipped in accordance with state and local laws and regulations.

- Non-glare rear view mirror.
- Left-hand outside rear view mirror.
- Seat belts to accommodate all passengers.
- Turn signals.

- Three flares for emergency use. Flares should be placed 300' behind, 150' behind and adjacent to the disabled vehicle.
- Two windshield wipers.
- Back-up lights.
- First-aid Kit.
- Snow tires and chains, where conditions warrant.
- A minimum 2-1/2 pound ABC rated fire extinguisher.
- A working horn.
- A back-up alarm.

RECORDS

All vehicles will be inspected using a vehicle safety inspection checklist. Completed inspection forms will be kept on file.

BEE STEEL, INC.

AERIAL MANLIFT SAFETY

PURPOSE

To establish guidelines for proper use of equipment and procedure for safe operation of all aerial man-lifts.

SCOPE

This procedure applies to all company divisions, on-site construction and maintenance projects.

DEFINITIONS

Outrigger- extension device for expanding the stabilization base of the platform ground support.

Competent person - A person who because of training and experience, is capable of identifying hazardous conditions in scissors lifts and of training employees to identify such conditions.

Portable outrigger- outriggers designed to be moved from one work location to another.

SAFE WORK PRACTICE

- Only trained authorized individuals can operate a man lift and all training shall be documented.
- Each scissor lift must have a clearly noted rating chart posted where the operator can see it. **Do not exceed the rated maximum loadings listed.**
- Equipment must be inspected regularly.
- Employees shall always stand firmly on the floor of the lift. Don't sit or climb on the edge or use the planks of the lift for a ladder.
- An effective two-way voice communication system can be provided between the operators and stationary people on the ground.
- When required a diaper and wheel covers must be used.

OPERATOR RESPONSIBILITY

- It is your responsibility to read and understand the manufacturer's manual(s) and this safety handout before operating an aerial scissor lift.
- Remember that YOU are the key to safety. Good safety practices not only protect you but also protect the people around you.
- Ensure the operating manual is stored in a weatherproof storage compartment.
- Ensure a pre-start inspection is accomplished at the beginning of each shift.
- Report any problems or malfunctions and do not operate prior to repair.
- Make sure you have been properly trained.
- Check the area in which the aerial platform is to be used for possible hazards.
- Ensure that the operation of the aerial platform is within the provisions outlined in the operator's manual.
- Ensure all personnel on the aerial platform comply with the provisions outlined in the operator's manual.
- Brakes shall be set to ensure that the lift does not move when the boom is elevated in a working position with an employee in it.
- Outriggers must be used when lift is extended.
- Transportable outriggers can be used as a method of suspension for ground rigging work for scissor lifts where the point of suspension does not exceed 300 feet above the safe surface.
- Before the lift can be moved the boom shall be inspected to insure that it is properly cradled and outriggers are in the properly stowed position.
- When using outriggers make sure they are totally extended and they are located to support the load.
- If outdoors remember to check for sewers and pipes if loads are very heavy.

TRAINING REQUIREMENTS

- Only a competent person can perform training.
- Prevention of accidents and injuries
- Establishing the criteria for design, manufacture, testing, performance inspection, maintenance, training, and operation.
- Establish understanding of responsibilities.

INSPECTIONS REQUIREMENTS

According to ANSI and OSHA standards, three inspections are required when using an aerial scissor lift. The inspections include a daily visual inspection, daily lift control inspection, and a monthly detailed documented inspection. These inspections are necessary to minimize or eliminate potential serious injury or death.

Daily Visual Inspection

- Check for missing, damaged, or unreadable safety signs.
- Check for broken, missing, damaged or loose parts.
- Check pivot pins for damaged or missing retaining devices.
- Check the tires for cuts, bulges, and pressure as specified by the manufacturer.
- Perform all maintenance procedures as outlined by the manufacturer of the machine.
- Check for cracked welds and other evidence of structural damage.
- Check hydraulic system for leaks and damage.

Daily Lift Control Inspection

- After starting, recheck all gauges and lights.
- Check all audible and/or visual alarms (if provided). Make sure everything is functioning correctly.
- Check all control functions, including emergency stop mechanism, from the upper control station and the lower control station (if provided). If the aerial platform does not respond correctly when each control is operated, do not use the machine until it is fixed.
- Move slowly until you are sure everything is operating properly.
- Recheck the steering and platform making sure it works properly.

Monthly Documented Inspection

A competent person shall also inspect all lifts at 30-day intervals using the check sheet that shall be kept on file. If anything is found to be unsafe, operation of the unit will not be allowed until it is repaired. A sample checklist is attached.

WORKING ON OR AROUND ELECTRICAL EQUIPMENT

- Electrical conductor parts of the power supply system shall be protected against accidental contact.
- Electrical grounding shall be provided.
- General building electrical installations shall comply with all standards and electric codes.
- Safe operating procedures can be reached by using the minimum safe approach distance (M.S.A.D.).
- Maintain M.S.A.D. from all other energized lines and parts.
- Assume all electrical parts are energized.
- Do not maneuver machine or personnel inside prohibited zone.
- Where flammable vapors or combustible dusts may be present, electrical installations shall be in accordance with all standards that may apply.
- Watch out for electrical lines and cables-they result in fatalities.
- To use the M.S.A.D. system refer to the chart that follows:

VOLTAGE RANGE (PHASE TO PHASE)	MINIMUM SAFE APPROACH DISTANCE	
	(FEET)	(METERS)
0 TO 3	AVOID CONTACT	
Over 300V to 50V	10	3.05
Over 50KV to 200KV	15	4.60
Over 200KV to 350KV	20	6.10
Over 350KV to 500KV	25	7.62
Over 500KV to 705KV	35	10.67
Over 750KV to 1000KV	45	13.72

BEE STEEL, INC.

LADDER SAFETY

PURPOSE

The purpose is to provide guidelines for the proper selection and use of ladders.

SCOPE

This procedure applies to all employees within the company.

REFERENCES

29 CFR 1926.450

29 CFR 1926.951

SAFE WORK PRACTICE

Ladders present one of the major hazards in construction work, and their improper use is the cause of many serious accidents. An analysis of accidents involving ladders revealed that the five principal causes of such accidents are:

- Ascending or descending improperly,
- Failure to secure ladder at top and/or bottom,
- Structural failure of the ladder itself,
- Carrying objects in hands while ascending or descending ladders,
- Employees leaning out from the ladder (over reaching).

Ladder Selection

- Great care should be taken in the selection of the proper size and design of the ladder for the use intended.

Straight Ladders

- Ladders must be selected to be of sufficient length to end not less than thirty-six inches (36') above any platform or landing, which they serve.

- All portable straight ladders must be equipped with approved safety shoes.
- All metal ladders are electrical conductors. Their use around electrical circuits of any type, or places where they may come in contact with such circuits, is not recommended. Metal ladders should be marked with signs reading “CAUTION: DO NOT USE AROUND ELECTRICAL EQUIPMENT”.

Step Ladders

- Stepladders sometimes referred to as “A” frame ladders, must have positive locking spreaders that will be fully spread and locked when the ladder is in use.
- Stepladders will not be used as straight ladders. They should be of sufficient height to preclude the necessity of employees using the top two steps of the ladder.
- Employees will not be allowed to work from the top two steps of a stepladder.
- Stepladders shall be firm and well constructed. Special care shall be taken when setting any ladder on grating. Often the feet of a stepladder can slip through the grating causing the ladder to fall.
- Stepladders shall be tied off or a worker shall hold the ladder when the user is 6 feet or more above the floor.

Ladder Usage

- The feet of the ladder shall be placed approximately one-quarter of its supported length away from the vertical of its top support (1 to 4 ratio). Extension ladders should be positioned based on the 1/4 rule. (Example - If the ladder is 12 feet, the base of the ladder should be 3 feet from the structure). Most ladders provide a pictorial guide to assist in proper ladder positioning. What happens if you do not use the 1/4 rule? If the ladder is set too far from the structure there is a greater chance the ladder will slide down the structure. If the ladder is set too close to the structure there is a greater chance of a fall backwards away from the structure.
- Only light, temporary work should be performed from ladders. Employees should be cautioned frequently about the danger of trying to reach too far from a single setting.

- Since, in most ladder applications, the weight of the employee is unevenly distributed over an area of approximately 3 inches long by 3 inches wide, any effort that tends to shift the balance of the employee should be discouraged. This includes using the upper torso for activities as pulling, pushing, prying, etc,
- Ladders shall not be placed in front of doors that open toward the ladder unless the door is locked or otherwise guarded.
- The ladder's feet shall be placed on a firm base, and the area in the vicinity of the bottom of the ladder shall be kept clear. When using straight ladders, both the top and bottom of the ladder shall be secured to prevent displacement. Use ladder shoes, stakes, or other means of securing the ladder.
- Ladders leading to landings, walkways, platforms, etc., must extend thirty-six inches above this point and must be securely fastened to prevent moving. Long ladders must be braced at intermediate points as necessary to prevent springing.
- When ascending or descending ladders, employees are to face the ladder and use both hands to hold onto the side rails. If material must be moved from one level to another, a rope, block and tackle, or other means must be used. Materials are not to be hand carried on ladders.
- ***Ladders must never be used in horizontal position as runways or scaffold.***

Ladder Inspection

- Ladders must be inspected prior to each use and monthly for deterioration and damage. Close visual inspection is recommended in preference to load testing. Jumping on a ladder that is supported horizontally subjects the ladder to more severe loads than it is intended to carry and may result in damage that can lead to sudden failure while in use.
- Metal ladders require frequent inspection. All parts should be checked for wear, corrosion, and structural failure.
- No employee will be allowed to use for any reason any ladder that has broken, loose, or cracked rungs, side rails or braces. Any ladder found in this condition will be removed from service immediately (TAG IT!). All inspections shall be documented and ladders shall be color coded for each month.

Ladder Maintenance

- Metal ladders should have the rungs cleaned to prevent accumulation of materials that might destroy their non-slipping properties, and all metal fittings should be carefully checked for rust and corrosion.
- When not in use, all types of ladders shall be stored under suitable cover protected from the weather. Ladders stored horizontally should be supported at both ends and at intermediate points to prevent sagging of the middle section, which tends to loosen the rungs and warp the rails. A rope should be spliced onto one of the top rungs of a ladder to provide a ready method to secure the ladder to the support.

Ladder Safety Reminders:

- Get training before using ladders
- Follow manufacturer's instructions
- Inspect ladders before use
- Use proper ladder positioning
- Properly secure ladders
- Use common sense and take time to do the job right

Before the job:

- Use the right ladder for the job.
- Use the 4/1 rule.
- The ladder must extend 3 foot above the exiting surface.
- Tie the ladder off to at a stationary point on the roof to prevent movement.

During the job:

- Always face the ladder when climbing up or down.
- Keep both hands free to hold on to the ladder when climbing.
- Keep your body centered with the rails when climbing.
- If you need tools, etc. they should be handed to you or pulled up on a rope once you are in position to work.

- The general rule of thumb, when standing or working on a ladder is that you should not go above the top 1/3 of the ladder. If you need to go higher, you should get a higher ladder.
- **Never climb on the top rung of any ladder.**

BEE STEEL, INC.

GENERAL FIRST AID

PURPOSE

To define minimum company requirements and responsibilities for providing quality first aid and medical care for occupational injuries and illness.

SCOPE

This procedure applies to all company divisions and on-site construction and maintenance projects.

RESPONSIBILITY

- First aid kits will be available at each division, on-site construction and maintenance project.
- A record of first aid provided should be noted on the First Aid Injury Log that is maintained at the corporate office.
- If no medical attention is available within 4 minutes, an individual trained in first aid and CPR will be available.
- The contents of a first aid kit will meet or exceed requirements of ANSI Standard Z308.1-1998.
- The shop supervisor or designee will be responsible for inspecting the first aid kit before it is sent to a job site.
- The site foreman will visually inspect the contents of the first aid kit weekly.
- The site-specific emergency action plan is completed by the foreman and it identifies phone numbers and addresses of emergency facilities and personnel.
- Eye and/or body flushing solutions will be available in the first aid kit, gang box, or site trailer.

BEE STEEL, INC.

FIRE PROTECTION

PURPOSE

Provides guidelines for the protection of personnel from fires and for the prevention of fires.

SCOPE

This procedure applies to all company divisions, on-site construction and maintenance projects.

DEFINITIONS

The following is a brief description of fire classifications and the recommended extinguisher to be used on each:

- CLASS “A” FIRES include ordinary combustibles such as rubbish, paper, rags, scrap lumber etc. A cooling agent extinguishes these fires. The recommended extinguishers are water through the use of hose, pump type water cans, pressurized extinguishers and soda acid extinguishers.
- CLASS “B” FIRES include flammable liquids, oils, and greases. These fires are extinguished by a smothering effect. The recommended extinguishers are ABC units, dry chemical, foam, and carbon dioxide. Fighting the fire - start at the base of the fire and use a swinging motion from left to right, always keeping the fire in front of you.
- CLASS “C” FIRES are electrical fires. These fires require a non-conducting extinguishing agent. The recommended extinguishers are ABC units, carbon dioxide, and dry chemical.

PROCEDURE

- Good house keeping and fire prevention go hand-in-hand for obvious reasons, not only on your job site but in the home and office, as well. Fires can start anywhere at any time and this is why it is important to know how to use a fire extinguisher and which fire extinguisher to use on different types of fire.

- The fact that fire extinguishers are our first line of defense in the event of a fire should warrant a periodic and complete inspection. Fire extinguishers must be kept clean to attract attention, they must be kept accessible to eliminate lost time when needed, and the rubber hose, horn or other dispensing component must be checked to assure against blockage. Also know where and how to activate the fire alarm and sprinkling systems.
- An alarm system will be established for notification of all employees at the site of an emergency. The alarm system should include lights, horns, sirens, or other appropriate devices to ensure that every employee is aware of shop/project emergencies.
- To prevent ignition hazards, electrical wiring and equipment will be installed in accordance with the National Electrical Code and National Fire Protection Association (NFPA) Code 70. Smoking will be prohibited in areas where fire hazards may exist, and “No Smoking” signs will be posted.
- A fire extinguisher rated not less than 2A will be provided for each 3,000 square feet of building area and in each yard storage area. Travel distance to any fire extinguisher will not exceed 100 feet from any protected area.
- One or more extinguishers rated not less than 2A will be located on each floor of a multi-storied building. At least one 2A-rated extinguisher will be located adjacent to a stairway in a multi-storied building. Extinguishers rated not less than 10B will be provided between 25 feet and 75 feet of any area in which more than 5 gallons of flammable or combustible liquids or 5 pounds of flammable gas are being used or stored. Note: This does not apply to fuel tanks of motor vehicles.
- Extinguishers will be conspicuously located where they will be readily accessible and immediately available in case of a fire, and their locations will be conspicuously marked. Extinguishers will be installed on hangers or in the brackets provided. Those extinguishers are not more than 5 feet from the floor. Those extinguishers weighing more than 40 pounds will be installed so the top is not more than 3 feet from the floor.

STORAGE OF FLAMMABLE & COMBUSTIBLE LIQUIDS

- Above ground storage tanks shall have spill containment capable of controlling 110% of capacity of tanks.
- A 20-pound ABC fire extinguisher shall be posted between 25 feet and 75 feet from storage area.
- Storage tanks shall be grounded.
- Storage tanks and container to be filled shall be bonded.
- Storage tanks shall be vented.
- Storage tanks shall have automatic shut off on dispensing hoses.
- Storage tanks shall have impact protection, in some form, from vehicle traffic.
- Storage area shall be at least 25 feet from buildings.

INSPECTIONS

- Extinguishers will be inspected monthly, or more often when circumstances warrant, to ensure that they have not been actuated or tampered with, and to detect any damage. Inspection tags will be placed, and the date of inspection will be indicated after each inspection. Hydro-testing or weighing in accordance with NFPA requirements should be completed.
- Each extinguisher will have a durable tag securely attached to show the maintenance test and recharge date and the initials or signature of the person who performed the services. A discharged fire extinguisher will be removed from service immediately and replaced with equipment protection.

RECHARGING

A plan will be established for the prompt recharging and testing of fire extinguishers in accordance with NFPA standards.

SUBSTITUTIONS

In areas where 2A extinguishers are required, the following may be substituted for each extinguisher:

- One 55-gallon barrel of water with three pails.

- A water hose of not less than ½ inch diameter, of not more than 100 feet in length, and with a discharge capacity of 5 gallons per minute.
- One fire hose of not less than 1 ½ inch diameter, of not more than 100 feet in length, and with a discharge capacity of 25 gallons per minute.

Note: The hose referred to above must be of sufficient length and have a stream range so as to reach all points in the protected area. These substitutions will not apply where the possibility of freezing exists.

EMPLOYEE TRAINING AND INFORMATION

The company will use a combination of handouts, videotapes, and classroom presentations to accomplish fire and fire extinguisher training for all new employees. All employees will be informed of fire behavior, the classes and types of fire, and will be instructed on the safe use of fire extinguishers. All employees will attend additional training, as appropriate.

RECORDS

Fire protection systems and fire extinguisher inspections and training records will be maintained for one year.

BEE STEEL, INC.

WELDING AND CUTTING

PURPOSE

To provide guidelines for the safe operation of welding and cutting equipment, and to itemize some of the fundamental hazards inherent with the use of this equipment.

SCOPE

This procedure applies to all operations involving this company.

REFERENCES

29 CFR 1926.350, .354, .556, .153, .406, and .102

TRAINING & INFORMATION

- Cutters, welders and foremen will be properly trained in the operations, equipment, and safe work practices in the tasks performed.
- All operators of welding and/or cutting equipment must be trained to operate the equipment that they will use. Appropriate safety procedures must be reviewed and understood prior to the use of this equipment.
- Employees in charge of oxygen or fuel gas supply equipment will be properly trained and instructed in the potential hazards and proper procedures for that job.
- All fire watch personnel will receive fire protection and extinguisher training. All fire watches will attend additional training, as appropriate.
- All company employees will be familiar with these procedures and safe work practices related to welding and cutting.

DEFINITIONS

Industrial Gases - Oxygen - Oxygen itself is not flammable, but the presence of pure oxygen accelerates the combustion reaction. In the presence of oxygen, oil and grease become highly explosive.

Fuel Gasses - Acetylene is an unstable gas when compressed above 15 psig. Acetylene cylinders are filled with a porous material and saturated with liquid acetone. Acetylene, when pumped into the cylinder, dissolves in the acetone and is held in a stable condition. If the acetylene cylinder is stored or used in the horizontal position, the acetone may leak out, leaving an explosive mixture of acetylene. It is for this reason, that all acetylene cylinders be stored and used in the upright or vertical position.

MAPP Gas is a stabilized mixture of methylacetylene, and has considerably fewer tendencies to backfire than acetylene. Maximum allowable use pressure is 94 psi versus 15 psi for acetylene.

GENERAL SAFE WORK PRACTICE

- Equipment must be industrial rated, in good condition and always be inspected before each use.
- Never use oil or grease on any fittings or apparatus in contact with oxygen.
- Blow out the cylinder valves before attaching the regulators to the cylinders.
- Release the adjusting screw prior to opening the cylinder valves.
- Never stand directly in front of or in back of a regulator when opening the cylinder valve; stand so that the cylinder valve is between you and the regulator.
- Always open the cylinder valves slowly. If a wrench is used, keep it on the valve.
- An acetylene cylinder should never be opened more than one full turn.
- Always purge the oxygen and fuel passages separately before lighting the torch.
- Light the fuel gas first before opening the oxygen valve on the torch.
- Do not take short cuts or use defective equipment.
- Never begin any welding or cutting without the proper permits.
- Always check to see that you have appropriate fire protection equipment immediately available before doing any welding or cutting.

- Welders must not wear any flammable or disposable type clothing.
- Welders must wear head and eye protection that is required in the area in which they are working.
- Heli-arc and MIG welding operations emit intense ultra-violet radiation that can result in third degree burns to exposed skin areas as well as painful flash burns to the eyes. Welding hoods must be checked periodically to insure that they are light tight.
- Arc gouging generally produces a great deal of slag and hot metal sparks. Additional personal protective equipment such as boots, nomex suits and mini-goggles may be appropriate.
- Electrodes should never be changed with bare hands, wet gloves, or when standing on a wet floor or grounded surface.
- Cables that become worn enough to present a hazard must be replaced immediately.
- Confined space and ventilation procedures and protocols will be implemented if welding or cutting operations are to be performed in a confined space.
- First aid supplies and kits are maintained in gang boxes and the site trailer.

FIRE PROTECTION & FIRE WATCHES

- Fire protection will be maintained in all immediate work areas.
- The company will gain an understanding of the site-specific fire protection and emergency action plan and communicate these procedures to all employees.
- Before work is performed the foreman will complete an inspection of the area using a hot work permit to identify precautions and fire protection requirements.
- If fire hazards can't be removed from immediate work areas additional fire protection measures will be implemented that include, but are not limited to, fire blankets, fire watches and other site specific procedures to protect immovable fire hazards from ignition sources.
- If fire protection measures can't be implemented or followed welding and cutting may not be performed in that work area.
- A fire watch will be required when locations where more than a minor fire might develop, combustible materials are closer than 35ft. to point of operation, and wall or floor openings within 35 feet radius of the work area.

STORAGE OF COMPRESSED GAS CYLINDERS

- Cylinders shall be kept away from radiators and other sources of heat.
- Inside buildings, cylinders shall be stored in a dry, well-ventilated, well-protected location. Assigned storage spaces shall be located where cylinders will not be knocked over or damaged by passing or falling objects, or be subject to tampering by unauthorized persons. Cylinders shall not be kept in unventilated enclosures such as lockers and cupboards.
- Empty cylinders shall have their valves closed.
- Storage of empty cylinders shall be separated from charged cylinders. Storage racks shall be identified as to compressed gas cylinder content and condition.
- Valve protection caps, where cylinder is designed to accept a cap, shall always be in place and hand tight (except when cylinders are in use or connected for use).
- Protection from solar radiant heat shall be provided where cylinders are directly exposed to sunlight.
- Compressed gas cylinders shall be secured in an upright position at all times, including when being hoisted or transported.
- Retention chains or straps will be provided on storage racks and carts so that compressed gas cylinders will be secured against falling.
- Compressed gas cylinder storage area must have a 20-pound ABC rated fire extinguisher (minimum) placed no closer than 25 feet, but not further than 75 feet to fuel gas storage areas.
- Compressed gas cylinder storage areas must have warning signs that shall be conspicuously placed and shall read, "Danger-No Smoking, Matches, Open Lights or Flames" or other equivalent wording.
- Compressed gas cylinder storage area inside buildings (except those in use or attached for use) shall be limited to total gas capacity of 2000 cubic feet or 300 pounds of liquefied petroleum gas.
- Oxygen cylinders in storage shall be separated from fuel gas cylinders or combustible materials (especially oil or grease) by a minimum of 20 feet, or by a non-combustible barrier at least five feet high having a fire resistant rating of at least one-half (1/2) hour.

RECORDS

- A Burning Permit may be required for specific areas prior to the start of any form of hot work.
- A copy of the Hot Work Permit will be kept on file for a 24 Hour period and will then be discarded.

EYE AND FACE PROTECTION

To prevent possible eye and face injuries, suitable eye protection must be worn. Potential eye and face injuries occur from flying objects, liquid chemicals, acids or caustic liquids, molten metal, chemical gases or vapors, and light radiation. Eye protection must provide adequate protection, be reasonably comfortable, fit snugly, be durable, capable of being disinfected and cleaned, kept sanitary and in good repair. When selecting eye and face protection consider what kind and degree of hazard is present. This will assist in deciding the proper protection. Employees who use corrective spectacles and are required to wear eye protection must wear face shields or goggles over the spectacles or safety glasses with protective optical corrective lenses. It is important to use the proper shade lenses when working with injurious light energy.

In general, start with a shade that is too dark to see the weld zone. Then use a lighter shade that gives sufficient view of the weld zone without going below the minimum protection. Oxy-fuel gas welding or cutting produces a yellow light, it is suggested to use a filter lens that absorbs the yellow or sodium line in the visible light of the operation.

Eye and face protection shall be appropriate for the task. When a hazard assessment determines that eye and face protection is necessary, protection shall be worn at all times without exception. Eye and face protection purchased prior to July 5, 1994 must be in accordance with ANSI Z-87. 1-1968 and any eye or face protection purchased after July 5, 1994 must comply with ANSI Z87.1 -1989. If you have question about eye protection ask your supervisor/foreman or refer to the manufacturer's instructions.

BEE STEEL, INC.

ROPE, CABLE & SLING INSPECTION

PURPOSE

To provide guidelines for the inspection of all ropes and cables used for personnel and material handling prior to use and as deemed necessary during their use, in order to ensure the safety of employees

SCOPE

This procedure applies to all material handling activities within the company.

REFERENCES

29 CFR 1926.251 and 29 CFR 1926.550

PROCEDURE

Although OSHA Standard 29 CFR 1926.251 pertains primarily to rigging equipment for material handling, the rope, cable and sling portions of the standard will be applied to all hoisting equipment, winches, pullers, and safety lines in use by the company. The OSHA guideline regarding visual and detailed inspections, disposition of damaged items, and lubrication procedures will be the policy.

Ropes, cables and slings, regardless of whether they are made of natural or synthetic fibers, steel wire, or metal mesh, are subject to certain hazards that cannot be removed by mechanical means, but only by the exercise of intelligence, care, and common sense. It is therefore essential to have personnel involved in the proper care, use and inspection of this equipment who are competent, careful, and well trained.

VISUAL INSPECTION

Since safety depends on the proper use and care of all types of ropes, cables and slings a visual inspection of these items must be performed daily by an appointed person. Items to look for while conducting the visual inspection should include the following:

- Deformed, worn or flattened surfaces
- Kinks or severe twists

- Nicks, breaks, frayed or unraveled edges
- Shortened or lengthened rope lays
- Corroded or pitted surfaces

DETAILED INSPECTION

The following, more detailed inspection, must be performed by a designated person at least monthly, or at more frequent intervals, depending on operating conditions and use:

- Run out rope completely and note conditions, such as number of broken strands, broken wires in one lay, reduction in rope diameter, corrosion, shorting of the lay, or fraying.
- Run a soft cloth, preferably cotton, over the entire length of wire rope and examine any rope lays that pick up threads of the cloth.
- Determine the extent of damage due to broken wires, nicks, cuts, frayed, or unraveled edges.
- Ensure that wire rope is properly lubricated.

When any of the above conditions exist and show evidence of abnormal deterioration, the item must be watched and re-inspected daily. If this condition continues to worsen, the item must be condemned and replaced.

DISPOSITION OF DAMAGED RUNNING ROPE

The length and type of service, as well as the severity of operation, must be taken into consideration before determining the disposition of ropes or cables that show signs of damage. Where failure of the rope or cable might endanger life or equipment, the rope cable must be condemned and replaced immediately. In all cases, the rope or cable must be condemned and replaced if any of the following conditions are found to exist.

- Broken Wires: Six or more wires broken in any one wire lay. Three or more wires broken in any one strand of one rope lay.
- Worn Outside Wires: Wearing of one-third or more of the original diameter of the outside individual wires.
- One or more broken strands.
- Kinking, Crushing, Unraveled, or Other Damage: Rope severely kinked, crushed, cut, frayed, bird caged, or unraveled, or any other damage resulting in distortion of the rope structure.

- Heat or Weld Damage: Any evidence of heat damage or weld splatter.
- Corrosion: Considerable corrosion in the valleys between strands or corroded broken wires at end connections.
- Reduction in Diameter: Noticeable reduction from normal rope diameter.

SLINGS

Slings are generally used in conjunction with other material handling equipment for the movement of material by hoisting. Slings are made of alloy steel chain, wire rope, metal mesh, natural or synthetic fiber, or fibers woven into a web. Many manufacturers of slings will produce their slings with a safety mark already on them. An example of this would be a sling with a red colored strand woven right into the material. If the sling has been cut or nicked to the point where the red colored strand is visible, the sling should be replaced immediately. However, since not all manufacturers make this safety mark, it will have to be up to the inspector to determine when the sling should be replaced.

Sling Inspection

- Each day or before each use, the sling and all fastenings and attachments must be inspected for damage or defects by a competent person designated by the company. Damaged slings shall be removed from service per manufacturer's recommendations.
- Additional monthly inspections should be performed during sling use, and where service conditions warrant. Damaged or defective slings must be immediately removed from service and/or replaced.
- Wire rope slings shall not be used if, in any length of eight diameters, the total number of visible broken wires exceeds 10% of the total number of wires, or if the rope shows other signs of excessive wear, corrosion, or defect.
- In the case of alloy steel chain slings, the inspection shall include a thorough check for wear, defective welds, deformation of the links, and increase in length. When such defects or deterioration are present, the chain sling must be immediately removed from use.

ROPE CLIPS

Fixtures are usually attached to wire rope by means of wire rope clips, commonly referred to as either “U” clips or “U” bolts. These wire rope clips are also used when making a loop at the end of a wire rope. There is a right way and a wrong way to use a wire rope clip. The correct method for installing a wire rope clip is to attach the clip with the base or saddle over the long or live end of the wire rope. This will allow the clip to develop 81 to 90 percent efficiency and is the only correct method of attaching wire rope clips. The saying, “Never Saddle a Dead Horse” will help prevent incorrect mounting of wire rope clips.

RECORDS

Inspection Records shall be maintained.

BEE STEEL, INC.

EXCAVATION AND TRENCHING

PURPOSE

To provide guidelines to ensure the safety of all employees who are required to work in and around excavations.

SCOPE

This procedure applies to all company divisions, on-site construction and maintenance projects.

REFERENCES

29 CFR 1926.650 - 652

RESPONSIBILITY

Project Supervision and the site foreman in charge of the excavation work is responsible for ensuring the following:

- All preparatory work is conducted as set forth in this procedure prior to any excavating.
- Excavation work is performed within the guidelines as set forth in this procedure.
- An Excavation Permit has been issued and properly completed by the appropriate personnel.
- Locating any electrical lines in the vicinity of the excavation to be dug. If electrical lines are present, the company must communicate their exact location to the person in charge of the excavation work.
- Locating any acid, steam, water, fuel-gas and/or other process/service type underground line in the vicinity of the excavation to be dug. If pipelines as those described above are present, the company must communicate their exact location to the person in charge of the excavation work.

- The company will ensure that prior to assigning any employee to perform trenching and excavation work, all safeguards are in place and a completed Excavation Permit has been posted in the area where excavation and trenching operations will be constructed.
- The site foreman is the designated competent person.

SAFE WORK PRACTICE

- Before any excavation can be made, an Excavation Permit must be filled out and approved by the company.
- A qualified person shall make soil classification. Unclassified soil will be sloped 1 ½ : 1 or shored when the excavation exceeds 4 feet in depth.
- All shoring for excavations over 20-feet must be designed by a registered professional engineer and all shoring installed must be approved and signed off by a registered professional engineer.
- All spoils must be placed a minimum of three (3) feet from the edge of the excavation.
- Excavations four (4) feet in depth or greater, must have a stairway, ladder, ramp or other safe means of egress within 25 feet of any employee.
- All excavations shall be inspected at the start of each shift, after heavy rains, and after freezing and/or thawing temperatures occur.
- For all excavations four (4) feet in depth or greater, the atmosphere in the excavation must be tested to ensure that no hazardous atmosphere exists. Ventilation equipment will be used when necessary.
- The foreman will inspect the excavation throughout the work period and stop operations when unsafe conditions exist.
- Different forms of fall protection are used to protect against falls around the excavation. These include temporary guardrail systems and limiting access by using temporary fence systems. Crossing and walkways are considered on a case-by-case basis and designed according to site-specific conditions.
- The number of workers in the excavation is to be limited to the number needed to perform the work.
- Employees will not work under suspended load.

TRAINING & INFORMATION

- The foremen receive additional competent person trenching and excavating safety work practice training on an annual basis.
- All company employees receive annual trenching safety awareness training.

RECORDS

A copy of the excavation permit will be maintained in the safety file.

BEE STEEL, INC.

ELECTRICAL SAFETY

PURPOSE

To eliminate unsafe conditions involving electrical equipment and tools, including faulty insulation, improper grounding, loose electrical connections, defective parts, ground faults in equipment and unguarded live electrical parts.

SCOPE

This procedure applies to all company divisions, on-site construction and maintenance projects.

REFERENCES

- 29 CFR 1926.400 - Subpart K
- National Electrical Code (NEC)

RESPONSIBILITY

- Foremen are responsible for the implementation of the procedure and are required to maintain this procedure and all paper work generated from the procedure at the project.
- Employees are responsible for compliance to this procedure and the requirements reflected in the written GFCI Programs.

DEFINITIONS

Labeled - Equipment or materials to which has been attached a label, symbol, or other identifying mark of a qualified testing laboratory that indicates compliance with appropriate standards or performance in a specific manner.

Qualified Person - One familiar with the construction and operation of the equipment and hazards involved

GENERAL

- Each project and shop must provide a safe place to work for every employee that includes protecting the employee from electrical hazards such as fault currents to ground.
- When an electrical ground fault occurs, the current flows through the path with minimum impedance to ground. It is imperative that any employee does not inadvertently become the conductor of the current.
- There are two approved methods of protecting the employee from a ground fault. These methods are in addition to other requirements for equipment grounding conductors. They are the use of ground fault circuit interrupters (GFCI) or assured equipment grounding conductor program.
- All electrical sources will be grounded or the use of a portable ground fault circuit interrupter (GFCI) is required.

GROUND FAULT CIRCUIT INTERRUPTER - GFCI

The two major aspects in the effective use of ground fault circuit interrupters are:

- Attention shall be given to the proper installation and maintenance of ground fault circuit interrupters within the requirements of the National Electric Code (NEC). The system shall be tested prior to being activated into service and the test results documented and kept on file.
- If a fault trip-out occurs after the circuit has been tested and activated into service, a thorough investigation must be made to determine the cause. The necessary repairs or corrections shall be made before re-using. Application of a silicone solution may be helpful if the fault trip-out is due to excessive moisture.

In purchasing ground fault circuit interrupters the specifications shall state that ground fault circuit interrupters shall conform to Underwriters Laboratories Standard 943, "Ground Fault Circuit Interrupters". Each circuit protected by a circuit breaker ground fault circuit interrupters requires its own neutral conductor. Receptacle type ground fault circuit interrupters may be used on common neutral systems and where receptacles are more than 250 feet from the breaker. A special ground fault circuit interrupter polarity tester shall be used to ensure trip current values and to test the satellite receptacles downstream from the receptacle containing a GFCI.

HOW & WHEN TESTING IS PERFORMED

It is recognized that in order to prevent injury from a ground fault, the integrity of the grounding system must be maintained at all times. To achieve this, a program of inspection and testing shall be implemented.

All employees are responsible for the inspection and testing of each cord set, electric tool, piece of electrical equipment and receptacle; (1) before first use, (2) before equipment is returned to service following repairs, (3) before equipment is used after any incident that can be reasonably suspected to have caused damage, and (4) every month.

DAILY TESTING

The user on a daily basis shall inspect each cord set, electric tool, or piece of electrical equipment visually before use for signs of damage. They shall be inspected for signs of frayed or damaged insulation, crushed cable, loose or missing covers or screws, missing ground prongs on plug, and other similar substandard conditions. Equipment found to be damaged or defective shall not be used until repaired, and equipment suspected of being damaged or defective shall be inspected and tested prior to using.

MONTHLY TESTING

The monthly inspections shall be the responsibility of site management. Each cord set, electric tool, receptacle, and piece of electrical equipment shall be tested to ensure a continuous ground circuit, and that the equipment grounding conductor is connected to its proper terminal. The testing equipment shall be capable of testing for ground conductor continuity and resistance line fault, and proper connection of conductors to terminals. All testing equipment shall also be tested each month and these results shall be documented and the documents maintained by the corporate office.

Receptacles that are a permanent part of the wiring of permanent buildings are excluded from the monthly testing and inspection requirements of this procedure. Also excluded are trailers, change shacks, Butler-type buildings, and similar structures. However, after installation and before initial use, each receptacle shall be tested. Note: If permanent receptacle in permanent building, trailers, change shacks, Butler-type building or similar structure are used to support construction activities, a ground fault circuit interrupter device will have to be employed in conjunction with each cord set, electric tool or piece of electrical equipment.

RECORDS

All tests performed in the GFCI Program shall be recorded.

BEE STEEL, INC.
SUBCONTRACTOR SAFETY
REQUIREMENTS

PURPOSE

The subcontractor is responsible for developing, implementing and adhering to their own environmental, safety, and health policies and procedures.

PROCEDURE

- Each subcontractor will be expected to be aware of and comply with all local, state, federal, and site safety standards and regulations.
- Subcontractors are required to submit company safety programs for review.
- The subcontractor will identify and provide to the designated competent safety person telephone number so that they can be contacted.
- Prior to the commencement of any work on the subcontractor will ensure that all personnel, both supervisory and hourly, receive a safety and health orientation and training.
- The subcontractor must furnish first aid supplies which are to be located in a place where they are immediately available to his personnel.
- All subcontractor accidents are to be reported immediately and a copy of each accident report prepared is to be provided.
- Subcontractors must conduct safety checks of each work area and report any unsatisfactory conditions to the company.
- Subcontractors will be required to correct any unsatisfactory safety conditions created as a result of their operations within a reasonable period of time. If this is not done, violation procedures will apply.
- Subcontractors are required to conduct documented safety meetings.

BEE STEEL, INC.

SAFETY INSPECTIONS

PURPOSE

To provide a guide for conducting regular site safety inspections to ensure that corporate and regulatory standards are being adhered to and to ensure the safety of all employees and visitors on the jobsite.

SCOPE

This procedure shall be applied to all company divisions, on-site construction and maintenance projects as deemed necessary to ensure safe work conditions and practice.

RESPONSIBILITY

The company's safety designee is responsible for conducting documented safety inspections of the field projects. Supervisory personnel are to conduct visual inspections of their work areas on a regular basis throughout the shift. Unsafe conditions and unsafe acts observed are to be corrected immediately. All personnel are responsible for implementing those safety recommendations to correct safety hazards observed during safety inspections of the project.

CONDUCTING SAFETY INSPECTIONS

The most widely accepted way to identify hazards is to conduct safety inspections. The only way you can be certain of the actual situation is to look at it from time to time. Safety inspections are a must if you are to know where hazards exist and if they are under control.

Checklists are by no means all inclusive. You may wish to add or delete portions that do not apply to your division or site. Consider carefully each item as you come to it and then make your decision. Completing the checklist will give you some indication of hazards that exist in your shop or construction site.

Make sure the safety inspection is done properly and consistently. Leave nothing to memory or chance. Write down what you see, do not see, and what you think should be done to correct any unsafe conditions.

Once the hazards have been identified, you can institute control procedures using the OSHA standards as guidelines. The OSHA standards can be of great assistance since they address controls in order of effectiveness and performance for

- (1) eliminating the hazard from a machine, the method, the material or plant structure,
- (2) abating the hazard by limiting exposure or controlling it at the source, and
- (3) prescribing personal protective equipment to protect employees against the hazard.

A thorough inspection must be made as needed or per customer requirements. Even areas that are used not used frequently shall be inspected. Housekeeping, stairway lighting, work methods, equipment, tools, etc. should be examined to identify hazardous conditions that may have escaped routine detection. Special attention should be given to things or conditions that have caused injury or illness on the particular job site or other job sites.

Any and all unsafe or unhealthy places or conditions shall be immediately corrected or reported. Unsafe and unhealthy conditions at the job site, even though these conditions result from work performed by others and are the responsibility of the General Contractor, are of serious concern to the company's employees and management. It is absolutely essential that where the company does not have the responsibility or authority to eliminate unsafe conditions at the job site, these conditions must be reported, in writing, to the General Contractor or Owner/Client.

A Safety Inspection & Report Record shall be used to record all unsafe conditions. This record shall be kept current and maintained in a clean, clear and legible manner. Any and all activities are subject to immediate inspection at any time. All activities shall be documented in full compliance with applicable federal and state safety standards and shall be ready for compliance inspections at all times.

BEE STEEL, INC.

FLAMMABLE LIQUID & COMPRESSED GAS STORAGE

PURPOSE

The purpose is to provide guidelines for the safe handling and storage of flammable liquids and compressed gases.

SCOPE

This procedure applies to all material storage and handling activities in this company.

PROCEDURE

Petroleum Product Storage

- Petroleum products delivered to the job site and stored there in drums shall be protected during handling to prevent loss of identification through damage to drum markings, tags, etc. Unidentified petroleum products may result in improper use, with possible fire hazard, damage to equipment, or operating failure.
- Bulk delivery and storage of petroleum products requires care in identification and particular attention to fire hazards during handling and storage. Appropriate fire extinguishers must be easily accessible in the immediate storage location. The storage area shall have a dike to prevent the spread of accidentally released material (outside storage of bulk material).

Flammable Liquid Storage

- All liquids should be considered as flammable unless the label clearly indicates that no such exposure exists.
- Conditions on construction sites change so rapidly that extreme care is necessary whenever flammable liquids are being used. Flammable liquids can be ignited by open flames, sparks, or excessive heat, so it is necessary that each of these factors be considered when setting up safe storage facilities for these items.
- No other equipment or materials should be contained in the area where flammable or combustible liquids are stored.

- All areas that are to be used for the storage of flammable liquids should be conspicuously designated as such, and No Smoking signs posted.
- The “No Smoking” must be vigorously enforced. These areas shall always be located so that local fire protection will always have access to the material.
- Only approved containers can be used for the storage of flammable liquids, and each container must have an emergency-venting device.
- All containers, from which flammable liquids are to be dispensed, shall be grounded, and when transferring flammable liquids, the dispensing container shall be bonded to the receiving container.
- Fire protection should be available no closer than 25 feet but no further than 75 feet of the flammable liquid storage area.

Storage of Compressed Gas Cylinders

- Cylinders shall be kept away from radiators and other forms of heat (protected from solar).
- Inside buildings, cylinders shall be stored in a dry, well-ventilated and protected area. Cylinders shall not be stored in unventilated enclosures such as lockers and cupboards.
- Assigned storage spaces shall be located where cylinders will not be knocked over or damaged by passing or falling objects, or be subject to tampering by unauthorized persons.
- Empty cylinders shall have the valves closed. Storage of cylinders shall be separated and identified with content and condition (full or empty).
- When cylinders are not in use the caps shall be in place and the cylinders shall be secured (chained) in an upright position at all times, including when being hoisted or transported.
- Small, hand held compressed gas cylinders used for propane torches, gas detector test cylinders, etc. should be stored in the upright position.
- A 20-pound ABC rated fire extinguisher (minimum) shall be placed no closer than 25 feet, but not further than 75 to a compressed gas storage areas.

- Warning signs shall be conspicuously placed and shall read, “Danger-No Smoking, Matches or Open Lights or Flames,” or other equivalent word in a compressed gas storage area.
- Inside buildings, cylinders (except those in actual use or attached for use) shall be limited to a total gas capacity of 2,000 cubic feet or 300 pounds of liquefied petroleum gas.
- Oxygen cylinders in storage shall be separated from fuel-gas cylinders or combustible materials (especially oil or grease) a minimum of 20 feet, or by a noncombustible barrier at least five feet high having a fire-resistant rating of at least one-half (1/2) hour.
- LPG gas cannot be stored inside buildings. LPG gas must be stored in a tamper resistant structure with ventilation and have no open flame or smoking signs posted.



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