



EMPLOYEE SAFETY HANDBOOK

Revised 4/16/2024

Table of Contents

Policy Statement	4
Introduction	5
HSE Charter	5
HSE Responsibilities	6
General Safety Rules	7
Disciplinary Actions for Violations of HSE Policies and Procedures	8
Stop Work Authority	9
Hazard Identification and Risk Assessment	10
Job Hazard Analysis (JHA)/Job Safety Analysis (JSA)	10
Incident and Injury Investigations/Injury and Illness Reporting	11
Vehicular Accidents	12
Fit for Duty	12
Personal Protective Equipment	13
Respiratory Protection	15
Fall Protection	15
Access to Medical Records	15
Ammonia Awareness	16
Aerial Lifts	17
Asbestos Awareness	18
Benzene Awareness	19
Bloodborne Pathogens	20
Cadmium	21
Civil and Underground Construction	22
Compressed Air	29
Compressed Gas Cylinders	29
Confined Space	31
Cranes	32
Rigging	35
Driving Safety	37
Electrical Safety Awareness	40
Emergency Action Plan	42
Excavation and Trenching	43
Fall Protection	46
Fire Protection/Extinguishers	50
First Aid and Medical Treatment	52
Fit for Duty	53
Flammable Liquids	54
Forklifts/Powered Industrial Trucks/Powered Mobile Equipment	55
General Waste Management	57

Hand and/or Power Tools	58
Hazard Communication	60
Heat Illness Prevention	62
Hexavalent Chromium	63
High Voltage Overhead Work	64
High Voltage Underground Work Rules	69
Line Clearance Tree Trimming	71
NFPA 70E	72
Hydroblasting	73
Hydrogen Sulfide	75
Journey Management	76
Ladder Safety	77
Lead	79
Lockout/Tagout	80
Manual Lifting	83
Machine Guarding	84
Noise Exposure and Hearing Conservation	85
Permit to Work	85
Preventative Maintenance	85
Protection from Wildfire Smoke	85
Respiratory Protection	86
Scaffolds	87
Silica Exposure Control	88
Traffic Safety Internal and External	90
Welding, Cutting, Hot Work	90
Working Alone	91
Workplace Violence	92

Policy Statement

YATES LINE CO., its subsidiaries, and affiliated companies, are committed to the safety and health of our employees and the protection of the environment. These are the fundamental responsibilities of each employee. YATES LINE CO.'s management believes that no aspect of the company's operations is of greater importance. Every executive, manager, supervisor, and employee is expected to be committed to the fulfillment of the YATES LINE CO. stated policy objectives while providing best-in-class products and services to our customers.

This statement of policy is the foundation that supports our entire health, safety, and environmental management system. It establishes our management philosophy with regard to health, safety, and environmental values, as well as a shared vision that safety and the protection of the environment are a personal responsibility in the performance of their duties. No aspect of anyone's job is more important. We are therefore committed to the following:

- The company will comply with all applicable health, safety, and environmental legislation, regulation, and relevant industry standards of practice concerning protection of health and safety of its employees in the workplace and other persons affected by its business activities and the prevention of environmental pollution.
- There must be visible management commitment, communication, and training to ensure the health and safety of our employees and the protection of the environment.
- We will ensure that systems are developed and implemented to identify, assess, monitor, review, and control health, safety, and environmental impacts related to our business activities. Toward that end, periodic audits and reviews of health, safety, and environmental systems and performance will be conducted.
- Measurable goals are to be established and reset each year promoting continual improvement toward hazard elimination, zero injuries, zero illnesses, and the prevention of pollution.
- The company will provide the necessary training and education to enable our employees to understand and perform the roles and responsibilities included with their job duties.
- All personnel are charged with the responsibility to make timely corrective actions where any conduct or condition may serve to jeopardize the safety, health, or well-being of any employee, customer, or subcontractor.
- All employees and subcontractors must recognize that safety and environmental protection are a condition of employment and that they are responsible for their safety, the safety of those around them, and for the protection of the environment surrounding their work area.

We ask for your full cooperation and support in the full implementation of our company's health, safety, and environmental policies.

Introduction

Preface

To our fellow employees and subcontractor employees:

The policies, practices, standards, expectations, and guidelines contained in this handbook are standards of conduct. We expect you to exceed these minimum standards. This handbook is an integral part of the company injury, illness, and incident prevention process. Compliance with such expectations, rules, and standards is a condition of employment for all employees and is a contractual obligation for subcontractor employees. This handbook is not all-inclusive--for additional information, refer to the specifically referenced policy or procedure, or contact your supervisor, person in charge, or the safety department.

It is our goal to eliminate injuries, control losses, and protect the environment by providing a healthy and safe workplace. We believe that through the process of recognizing and correcting unsafe conditions, changing unsafe worker behaviors, controlling energy sources, and openly communicating with our employees, we can and will eliminate all injuries.

Keeping your personal safety and well-being in mind, this document has been prepared as a tool in your daily routine and work functions. Each employee and contractor is expected to read the handbook carefully, adhere to its contents, and use it as a reference as daily work assignments are performed. We encourage all to share knowledge gained and mentor others by leading by example and working safely.

Our Vision:

We believe through collective and individual efforts: ALL INJURIES CAN BE PREVENTED

HSE Charter

YATES LINE CO. embraces health, safety, and environmental objectives as a core value. We believe all incidents and injuries to be preventable and we strive for health, safety, and environmental excellence daily.

YATES LINE CO. shall endeavor to provide for employee livelihood, client needs, and shareholder returns through the application of management systems that protect the environment, safeguard employee's health, and eliminate injuries to people.

YATES LINE CO. believes these goals are best achieved:

- By understanding that no job task is important if performed in an unsafe fashion.
- Through the education of employees on safe work performance.
- Through proactive hazard identification, elimination, and control.
- By applying continual health, safety, and environmental improvement processes.
- Through the promotion of a positive *safe* lifestyle both on and off the job.

“Working Together for a Safer Tomorrow”

HSE Responsibilities

YATES LINE CO. and subcontractor employees are referred to as *personnel* in this handbook. YATES LINE CO. employees, supervisors, and subcontractors have the following responsibilities:

MANAGERS/SUPERVISOR RESPONSIBILITIES

Each manager/supervisor is responsible for the health and safety of his/her employees and safety/environmental activities within their area of supervision. This will include the reinforcement of the belief that all injuries can be prevented. These responsibilities include:

- To read, understand, and comply with YATES LINE CO. policy statement, health, safety, and environmental management system arrangements and controls.
- Assuring accountability through employee performance, counseling, and disciplinary action.
- Setting a good example and promoting safety and environmental initiatives.
- Performing safety/environmental assessments and promptly correcting substandard behaviors and conditions.
- Holding and documenting safety and environmental meetings ensuring adequate training for employees.
- Reporting, tracking, and investigating injuries, potentially dangerous incidents, and giving appropriate feedback.
- Reporting and investigating all spills and releases.
- Ensuring adequate training for employees in their assigned tasks.

ALL EMPLOYEE RESPONSIBILITIES

Each employee shall demonstrate a positive attitude toward injury prevention, the protection of the environment, and company property. Each employee shall accept that injuries can and should be prevented. Each employee is responsible for:

- Stopping an activity or shutting down any operation which is unsafe (Refer to HSE Policy – *Stop Work Authority*).
- Promptly reporting all unsafe conditions and practices to their supervisor (Refer to HSE Policy – *Stop Work Authority*).
- Reporting every spill/release to their supervisor (Refer to HSE Policy – *Spill Prevention and Response*).
- Performing their job safely, for their personal safety, the safety of their fellow workers, the protection of the environment, and company property. This includes the proper use of safety equipment and strict adherence to safe work practices and established safety standards.
- Understanding all safety/environmental policies pertinent to their job responsibilities.
- Participating in safety and environmental training and meetings.

- All employees are required to be trained in this handbook and must keep this handbook available at the worksite in an accessible location and refer to it often.

General Safety Rules

1. Immediately report injuries and/or incidents, no matter how slight, to your supervisor. If necessary, treat the injury at the nearest appropriate medical facility (Refer to HSE Policies- *Incident Investigation and Injury/Illness Reporting*).
2. Immediately report all fires and spills, no matter how small, to your supervisor. (Refer to HSE Policies – *Fire Protection/Extinguishers and Spill Prevention and Response*).
3. Immediately report any unsafe condition or practice to your supervisor (Refer to HSE Policy – *Stop Work Authority*). Unsafe equipment must be tagged, marked *DANGER, DO NOT OPERATE*, and locked out, if possible, to prevent use (Refer to HSE Policy – *Lockout/Tagout*).
4. Horseplay or fighting on company premises of any worksite while representing the company is prohibited.
5. All passengers in company vehicles, including rental cars, must wear seat belts. The driver is responsible for ensuring that all passengers are wearing seat belts prior to putting the vehicle in motion. Trips involving long distances may require a journey management plan. (Refer to HSE Policy – *Journey Management*).
6. The illegal use, possession, transportation, or sale of drugs, alcoholic beverages, firearms, deadly weapons, or explosives while on company premises or in a company vehicle is prohibited. The use of prescription drugs must be reported in advance to the employee's supervisor. Employees reporting for work must be *fit for duty*, healthy, and prepared to work along with not being under the influence of illegal drugs or alcohol (Refer to HSE Policy – *Fit for Duty*).
7. Smoking is permitted in designated areas only.
8. Whenever a safety device is removed from service and/or defeated, the appropriate supervisor shall be notified, the device tagged and locked, if possible, with the action properly documented (Refer to HSE Policy – *Lockout Tagout*).
9. No work may be started in any area or on any equipment without the knowledge and consent of the person in charge. Do not operate equipment on which you are not trained.
10. Under normal operations, all operating machinery and electrical switchgear must have the design safety guards, switches, and alarms in place and functional.
11. All block valves on pressure relief systems must be locked or sealed open.
12. Use only proper tools and equipment maintained in good working condition. Operation of equipment having a *DANGER, DO NOT OPERATE* tag is prohibited. (Refer to HSE Policy – *Lockout/Tagout*).
13. All jewelry including finger rings, loose clothing, unsecured long hair, and other loose accessories are not to be worn while working. Wrist watches shall not be worn within arm's reach of rotating, electronic or unguarded machinery.
14. When ascending or descending stairways, use a handrail and take one step at a time to always maintain a three-point contact. Running in work areas, except for emergency purposes, is prohibited.

15. Erect barricades around areas of hazardous work such as holes in decking and work areas, trenches, overhead hazardous work, open unattended vessels, or hazardous storage. Only the person in charge may grant permission for entry in these areas.
16. Climbing or standing on equipment hoses, piping, or valves is discouraged. Approved scaffolding, ladders, and appropriate fall protection (Refer HSE Policies, *Fall Protection*, *Ladders*, and *Scaffolding*) is required if working at heights greater than six feet.
17. Fire extinguishers, alarm boxes, fire doors, air packs, eye wash stations, first aid kits, and all other emergency equipment must be in good condition, inspected regularly, and kept clear of any obstructions (Refer to HSE Policies – *Fire Protection/Extinguishers* and *First Aid*).
18. Use proper lifting techniques (such as bending of knees), obtain assistance for heavier loads, and use mechanical lifting aids when available. Do not twist while lifting, pulling, or carrying a load (Refer to HSE Policy – *Manual Lifting*).
19. All rules established by company customers to whom the company is contracted will be strictly adhered to by all parties. Where there is a conflict of rules, the more stringent will be enforced.
20. Leaving a workplace without permission is prohibited.
21. The use of cell phones in any fashion is prohibited while operating equipment, machinery, or while driving your vehicle.
22. While driving in a company vehicle or traveling on company time, all company safety policies, procedures, or rules, and state, federal, or local laws shall be strictly adhered to.
23. The use of cell phones, in any fashion, is prohibited while operating equipment, machinery, or while driving in your vehicle.

Disciplinary Actions for Violations of HSE Policies and Procedures

Following the company's HSE policies and procedures ensures a safe work environment for each employee, others in the working environment, the public, and guarantees protection of assets and the environment. Appropriate to the severity and frequency of the violation, disciplinary action may be administered. Discipline may take the form of the following (Refer to HSE Policy – *Disciplinary Program*):

- Verbal warning
- Written warning
- Remediation training
- Probation
- Suspension
- Transfer
- Demotion
- Termination

Stop Work Authority

It is the Health, Safety, and Environmental (HSE) policy of YATES LINE CO., to maintain a safe and secure work environment for ALL personnel. YATES LINE CO. is committed to providing a safe and healthy workplace.

As such, it is the responsibility of every employee and subcontractor employee to exercise STOP WORK AUTHORITY (Refer to HSE Policy – *Stop Work Authority*), whenever an employee, member of the public, the environment, or company or client assets are put into an unacceptable risk situation. Management will support any action exercising STOP WORK AUTHORITY and its employees for the diligent execution of this policy.

STOP WORK AUTHORITY shall be applied if any situation arises due to an unsafe action, behavior, condition, or omission in the workplace by any party involved in the operation. This applies to any action which may cause injury, serious harm, negative environmental impact, or property damage if the situation were permitted to continue.

Any person, regardless of position, seniority, or trade has the right and obligation to apply the STOP WORK AUTHORITY policy if it is his/her opinion or judgment that such activity is deemed to be a potential incident.

There shall be no blame nor fault placed on any employee or subcontractor employee that uses their STOP WORK AUTHORITY even if, upon investigation, the STOP WORK AUTHORITY was deemed unnecessary. The STOP WORK AUTHORITY must, however, be applied in good faith.

Timing is a critical factor. There should never be any delay in calling for a STOP WORK AUTHORITY order if the need arises.

Work that has been halted due to an employee's or subcontractor employee's STOP WORK AUTHORITY shall not resume until all safety aspects have been cleared to the satisfaction of the employee who initiated the STOP WORK AUTHORITY, or the person in charge of the operation has properly reviewed the concern and deemed it safe to continue.

Chief Executive Officer

YATES LINE CO.

Hazard Identification and Risk Assessment

Employees of YATES LINE CO. and subcontractor employees are required to utilize a formal process to identify hazards which have the potential to cause harm, associate with the job/tasks, and identify measures to eliminate the hazard or institute controls for an unacceptable hazard. This is done to ensure that residual risks are as low as reasonably practicable (Refer to HSE Policy – *Risk Assessments*).

Hazard assessments must be performed prior to any work commencing on any and all worksites where hazards have been identified or potential hazards are thought to exist. Hazard assessments typically use standardized and documentable forms such as JSAs/JHAs. These forms should be kept short, simple, and retained according to the document retention policy of the company. The hazard assessment process using JSAs/JHAs must be conducted in a systematic fashion.

The hazard assessment should be conducted in advance of the work activity to allow the hierarchy of controls (elimination, substitution, engineering, administrative, and personal protective equipment) to be implemented. Personnel participating in the hazard assessment must be identified on the document of record (JSA/JHA). Hazard assessments may involve reviewing previous hazard assessments, incident investigations and the like.

Hazard assessments using JSAs/JHAs must be undertaken prior to:

1. Performing any non-routine activity.
2. Performing a new task.
3. When new personnel are involved.
4. When third parties are involved (Simultaneous Operations).
5. When major changes to the work/system are considered.

All aspects of the work must be assessed, hazards identified, and control measures implemented prior to commencing work so that risks are made as low as reasonably practicable. Uncontrolled hazards that represent unacceptable risks warrant the use of Stop Work Authority in all cases (Refer to HSE Policy- *Stop Work Authority*).

The hazard identification and risk assessment procedure for YATES LINE CO. is comprised of six (6) critical steps. The following outlines the exact steps employees and subcontractor employees must follow when completing the hazard identification and risk assessment process (JSA/JHA).

1. Identify the steps to complete the task.
2. Identify the hazards within each step.
3. Identify who/what might be harmed.
4. Quantify the hazard using an approved risk matrix (Refer to HSE Policy – *Risk Assessments*). This should be done based on likelihood of occurrence and severity.
5. Identify control measures using the hierarchy of controls.
6. Assess residual risks and hazards.

YATES LINE CO. will provide training for employees and subcontractor employees must be trained by their respective companies in the appropriate level of hazard identification and risk assessments.

Job Hazard Analysis (JHA)/Job Safety Analysis (JSA)

Identifying hazards is essential in determining risks and controls. A hazard has the potential to harm. A hazard plus potential employee exposure equals risk of harm. Harm can come in the form of personal injury, illness, or death, harm to others, the

environment, or property. Identifying hazards and eliminating or controlling them will help prevent workplace injuries and illnesses.

A job hazard analysis (JHA) often referred also as a job safety analysis (JSA) is a technique that focuses on the steps needed to complete a job task, the hazards identified with each task, and the controls used eliminate or mitigate the identified hazards (Refer to HSE Policy – *Risk Assessments*). A JHA/JSA focuses on the relationship between the worker, the task, the tools, and the work environment. Analysis can also be a valuable tool for training new employees in the steps required to perform their jobs safely.

When completing a YATES LINE CO. JHA/JSA, the following questions should be considered:

1. What are the hazards?
2. What can go wrong?
3. What are the consequences?
4. How could it happen?
5. What are the contributing factors?
6. How can the hazards be reduced to a risk level that is as low as reasonably practicable?

Incident and Injury Investigations/Injury and Illness Reporting

All near misses and unsafe conditions, injuries and illnesses, vehicle accidents, fires, chemical and environmental spills, and property damage, no matter how minor, must be reported immediately to the appropriate supervisor and safety. (Refer to HSE Policies – *Incident Investigation* and *Injury/Illness Recordkeeping*). The purpose of reporting is to begin the process of providing adequate medical care for injured or ill workers, to determine root cause(s), and implement corrective actions and comply with applicable regulations.

All incidents **MUST** be documented using the company's incident investigation forms and processes (Refer to HSE Policy – *Incident Investigation*). Reports of incidents must be made to immediate supervision and the Safety Department.

All reporting must, at a minimum include the following information:

- Name of the employee(s) involved.
- Date, time, and location of the incident.
- Description of the near miss/incident/accident.
- Witness interviews.
- Photographs.
- Witness statements.
- Root cause analysis (RCA).
- Corrective Actions.

The following are general guidelines that must be followed when faced with a situation requiring investigation:

1. All workplace injuries, illnesses, near misses, property damage, and environmental impact incidents must be reported and investigated.
2. Do **NOT** disturb the incident scene until told to do so by senior management or the safety department.
3. Take photographs (where allowed) to document as much of the incident/accident scene as possible.
4. If you are injured on the job, you must be accompanied by YATES LINE CO. management personnel or safety for medical treatment.

5. **DO NOT go to your own doctor without first obtaining permission to do so from your supervisor or YATES LINE CO. management.**
6. The incident investigation should begin as soon as possible after proper notification is made. Proper medical treatment for injured workers takes priority over the investigation process.
7. The immediate supervisor and the safety department are responsible for conducting the investigation.
8. Incident investigations are not conducted to determine blame and punishment but rather to determine cause(s) and to implement corrective actions to prevent recurrence.

The investigation team will be comprised of the immediate supervisor, the safety department, and other members of management as appropriate. It is the responsibility of the investigation team to determine the obvious and/or underlying causes of the incident. This determination should be based on the facts and logical conclusions. The formal investigation must be thorough and utilize an accepted investigation methodology determined by the company. In most cases, the investigation will be in the form of a root cause analysis (Five Whys, ABS, TapRoot, etc.).

All involved personnel (whether employed by the company or not) should be interviewed individually and in person when possible. In most cases, the interview will be conducted by the investigation team lead. It is important that all personnel interviewed be honest and state all pertinent facts.

YATES LINE CO. considers all notes, records, drawings, photographs, video, social media posts, reposts, and physical evidence of every incident, accident, incident report, and incident investigation to be confidential and privileged. No company employee shall discuss or reveal any information about the incident, investigation, or any report generated as result of the incident with any person who is not an employee or authorized representative of YATES LINE CO. Media requests for information should be directed to top management members and the company's legal representatives.

Significant incidents may require a detailed written report to be produced and presented to the top management of the company along with recommended corrective actions. The investigation typically will remain open until the results of the investigation are accepted by the senior manager responsible.

Vehicular Accidents

The following governs accidents involving YATES LINE CO. employees when operating vehicles while on company business. When a vehicle accident occurs, **STOP IMMEDIATELY**. When safe to do so, pull over to the shoulder of the road. Immediate action should be taken to prevent further injury or property damage. When applicable and if safe to do so, place warning devices in the road to alert other drivers to the accident. If injuries have occurred, call **911** immediately. Remain calm and give the emergency operator as much information as possible about the accident. When safe to do so, **NOTIFY YOUR SUPERVISOR. DO NOT LEAVE THE SCENE OF THE ACCIDENT** until instructed to do so by responding law enforcement or management of the company. Be courteous to other parties who may be involved and provide requested documentation such as driver's license and insurance information. Be certain to secure and record all facts and pertinent information, including the personal information of other drivers and witnesses that may be involved (i.e., names, phone numbers, plate numbers of vehicles at the scene). **DO NOT** discuss the accident with anyone except law enforcement, YATES LINE CO. representatives, and the insurance company for YATES LINE CO.

Fit for Duty

To provide a safe working environment, YATES LINE CO. and its subcontracted companies must ensure that workers are fit for duty to perform their tasks (Refer to HSE Policy – *Fit for Duty*). Fit for duty means that employees and subcontractor employees are physically, mentally, and medically fit to perform their assigned duties, sufficiently rested, and unimpaired by

drugs or alcohol. YATES LINE CO. is committed to employee fitness for duty by providing adequate work/rest schedules, the opportunity of employees to report fitness issues (Refer to HSE Policy – *Stop Work Authority*) and encourages employees to seek treatment for substance abuse or physical and mental health issues.

At YATES LINE CO., no employee or subcontract employee should commence safety sensitive work if not fit for duty and should stop such work if they become unfit. Any employee observing a potentially unfit worker should exercise Stop Work Authority (Refer to HSE Policy – *Stop Work Authority*) and notify their immediate supervisor at once.

Personal Protective Equipment

Personal protective equipment (PPE) represents the last line of protection against hazards in the workplace. YATES LINE CO. employees, subcontractors, and visitors are expected to wear the appropriate PPE based on site requirements and hazard assessments (Refer to HSE Policies – *Personal Protective Equipment* and *Risk Assessments*). The minimum required PPE when working in areas other than offices is hard hats, safety glasses, steel toed footwear (safety shoes), and hearing protection (if required). Should a designated walk path be clearly marked and identified as a safe zone, then no PPE is required. No other exceptions should be allowed without the express permission of senior management and/or the safety department.

PPE provided by either the company, the individual, or the subcontractor must meet expectations established by recognized governmental agencies, industry groups, or YATES LINE CO. YATES LINE CO. is committed to providing employees with appropriate PPE and training on the use, care, and limitations at no cost to employees. Employees are responsible for the serviceability and sanitary condition of their PPE. Excessively worn or damaged PPE must not be used and will be replaced by YATES LINE CO., except for footwear.

A site supervisor is responsible for ensuring that a written hazard assessment has been conducted for his/her area of responsibility (Refer to HSE Policies – *Personal Protective Equipment* and *Risk Assessment*). This assessment must identify the workplace evaluated, the date(s) of the assessment, the person making the assessment, and the required PPE. A JSA/JHA may suffice as a worksite hazard assessment.

Head Protection

All personnel working on or around site and field operations, when not in a vehicle or office area, shall wear a hard hat. Hard hats must be non-metallic, (non-conductive or 'dielectric') and meet ANSI Z89.1 Class E and G requirements. Hard hats must be inspected frequently for signs of cracks or damage and replaced when showing signs of weakness or as required by the manufacturer. Hard hats must never be modified.

YATES LINE CO. will provide head protection (hard hat) that conforms to ANSI Z89.1 (Class E & G) to its employees and visitors. Subcontract companies must supply appropriately rated head protection for their workers and visitors. Metal hard hats, bump caps, or novelty head protection are not allowed. Any hard hat involved in an incident in which it was struck by an object shall be taken out of service.

Hearing Protection

All personnel working in areas where the noise levels are 85 dBA or greater must wear appropriate hearing protection. As a rule of thumb, if a person must raise their voice to be heard by a person at a distance of two (2) feet or less away, then hearing protection most likely should be worn.

Appropriate hearing protection can be found in the following types:

1. Muffs – fit over the ears. Muffs must be kept clean and sanitary with soap and water or equivalent prior to each use and contain the appropriate noise reduction rating (NRR) for the hazard.
2. Reusable earplug – designed for multiple uses, one user only, must be cleaned with soap and water or equivalent prior to each use and contain the appropriate NRR for the hazard.
3. Disposable earplug – discard after use and must contain the appropriate NRR for the hazard.

Site supervision is responsible for determining the locations and equipment that necessitate the need for hearing protection, ensure that PPE is available, and enforce safety policies and procedures regarding hearing protection. Employees should report areas where there is a high probability of high noise levels so those areas can be assessed against the OSHA action level of 85 dBA. Employees of YATES LINE CO. with the potential to be exposed above the OSHA action level will receive training on the effects of harmful noise on hearing, employee protection methods, use, and sanitation of PPE (Refer to HSE Policy – *Noise/Hearing Conservation*).

Employees subject to YATES LINE CO.'s hearing conservation plan will receive baseline and annual hearing tests as required by law. Records of such testing will be kept in accordance with company policy and regulatory requirements (Refer to HSE Policies – *Access to Medical and Exposure Records* and *Noise/Hearing Conservation*).

Footwear

All personnel, including subcontracted workers working on or around company site or field locations, must wear current ANSI Z41 approved safety-toed shoes/boots. The type of footwear required shall be determined by the YATES LINE CO. PPE hazard assessment (Refer to HSE Policies – *Personal Protective Equipment* and *Risk Assessment*).

At a minimum, the footwear must be constructed of permeable-resistant material with non-skid soles and ½ but no more than 1 ½ inch heel. All safety toed footwear shall, at a minimum, meet the performance and specification requirements of the American National Standards Institute or local health, safety, and environmental regulations. Employees are responsible for purchasing their own footwear unless reimbursement is approved by the company in advance of purchase.

Eye and Face Protection

Eye and face injuries represent life altering and disfiguring potential. Proper eye and face PPE shall be determined by the company's hazard assessment process (Refer to HSE Policies – *Personal Protective Equipment* and *Risk Assessment*). All personnel in site and field operations, including subcontracted workers, must wear current ANSI Z87.1 approved safety glasses unless in vehicles, offices, or living quarters. The use of contact lenses while welding or working with or around chemicals is prohibited.

Workers should note that safety glasses do not replace other types of eye protection currently required for performing specific job tasks. Other types of eye protection include splash goggles when working with certain chemicals and face shields when grinding, chipping, or striking.

Personnel who require corrective lenses must wear prescription safety glasses that meet the ANSI Z87.1 standard or wear approved safety glasses over the corrective lenses. All eye wear must have side impact protection.

Hand Protection

One of the most common injuries to workers is injuries to the hands. All personnel, including subcontract workers, must wear appropriate hand protection. Site supervision is responsible for conducting a hazard assessment to determine the

appropriate hand protection for tasks (Refer to HSE Policies – *Personal Protective Equipment* and *Risk Assessment*). Examples of hand protection include, but are not limited to:

1. Leather or leather-palmed gloves when handling wire rope.
2. Cloth gloves when handling pipes.
3. Chemical resistant gloves when handling acids or caustics.
4. Rubber gloves approved for electrical work.
5. Insulated or heat-resistant gloves for burn protection.
6. Hydrocarbon resistant gloves when using hydrocarbon solvents, cleaning agents, or chemicals.
7. Cut resistant gloves when using knives.
8. Impact resistant gloves when dealing with crush hazards.

No gloves shall be work around rotating equipment.

Respiratory Protection (Refer to HSE Policy – *Respiratory Protection*)

The most common route of entry into the body is the respiratory system (Refer to HSE Policy - *Respiratory Protection*). All personnel, including subcontractor employees, shall wear the appropriate respiratory protection when there is an anticipated exposure to respiratory hazards (i.e., smoke, dust, residue from sandblasting, fumes, gases, and crystalline respirable silica). YATES LINE CO. will provide its employees and subcontractor companies will provide their employees with respiratory protection appropriate to the hazard. Visitors are responsible for providing their own respiratory protection as is required. Employees requiring respiratory protection will receive training from the company on the selection, use, care, maintenance, and limitations of the issued respirators (Refer to HSE Policy – *Respiratory Protection*).

Fall Protection – (Refer to HSE Policy – *Fall Protection*)

Falls from heights continue to be one of the main causes of serious injury and death across all industries. A personal fall arrest system (PFAS) consisting of a full body safety harness and fall arresting equipment (i.e., shock absorbing lanyard) must be work by employees and subcontractor employees any time personnel are subjected to a fall potential of four (4) feet or more in general industry operations and six (6) feet or more in construction, when not otherwise protected.

The full body safety harness must be properly worn with the anchor point equal to the height of the D-ring or higher and ensure 100% tie off. YATES LINE CO. will provide all affected employees with PFAS, while visitors and subcontracted companies are responsible for their own PFAS. Prior to working at heights, employees of YATES LINE CO. will be trained in the use of PFAS and demonstrate an understanding of such training. Retraining shall be required when changes in the workplace render previous training obsolete, changes in hazards have occurred, or changes in the types of PPE has rendered previous training obsolete.

Access to Employee Medical and Exposure Records

At YATES LINE CO. an employee medical record means a record concerning the health status of an employee that is made or maintained by a physician, nurse, or other health care personnel or technician. Employee medical and exposure records will be preserved by YATES LINE CO. for at least 30 years past the last day of work for each employee with whom they are associated and will include environmental (workplace) monitoring or measure of toxic substance(s) or harmful physical agent(s), biological monitoring, and safety data sheets (SDSs) (Refer to HSE Policy – *Access to Employee Medical and Exposure Records*).

Employees and their designated representatives will be allowed access to their employee exposure and medical records in accordance with OSHA 29 CFR 1910.1020 and at no cost to the employee or employee representatives and in a reasonable time, place, and manner. Employees or their representatives will be provided with access to employee records within 15 days after the request is made. Records or copies shall be provided at no cost (Refer to HSE Policy – *Access to Employee Medical and Exposure Records*).

Ammonia Awareness

Ammonia is an extremely hazardous chemical that is widely used in many industries (Refer to HSE Policy – *Ammonia Awareness*). Ammonia can be explosive, especially in an enclosed space or when other flammable chemicals are present. By itself, its flammable range is between 15 percent and 28 percent by volume in air. When mixed with lubricating oils, the flammable range increases. Ammonia will react dangerously with some chemicals, most notably chlorine bleach. Ammonia is also incompatible with other halogens (for example, fluorine), oxidizing agents (for example, nitrogen oxide), and heavy metals (for example, mercury and silver).

Ammonia can be in liquid or gas form. Ammonia is colorless and has a strong pungent odor like that of household cleaning ammonia. It is a common refrigerant in many industries. In agriculture, it is injected into soil as a fertilizer. It is also used in the manufacturing of plastics, dyes, textiles, detergents, and pesticides. Ammonia may be found in solution, as ammonium hydroxide, or packaged as a pressurized gas, in a waterless (anhydrous) form.

Anhydrous ammonia gas is lighter than air and will rise, so that generally it dissipates and does not settle in low-lying areas. However, in the presence of moisture (such as high relative humidity), the liquified anhydrous ammonia gas forms vapors that are heavier than air. These vapors may spread along the ground or into low-lying areas with poor airflow where people may become exposed. Some examples may include, but are not limited to:

- Working on or near industrial refrigeration machinery rooms, equipment, and/or piping.
- Working in petroleum refineries.
- Working with or near agricultural fertilizer.
- Working in industrial process facilities.
- Working in or around industrial meat packing plants.

Anhydrous ammonia can cause harm if inhaled and/or if it comes into contact with the eyes or skin. Ammonia interacts immediately upon contact with available moisture in the skin, eyes, oral cavity, respiratory tract, and particularly mucous surfaces to form the very caustic ammonium hydroxide. Ammonium hydroxide causes the necrosis of tissues through disruption of cell membrane lipids (saponification) leading to cellular destruction. As cell proteins break down, water is extracted, resulting in an inflammatory response that further causes damage.

Rules of Exposure – (Refer to HSE Policy – *Hazard Communication*)

5 ppm – can be detected through smell.

50 ppm – harmful with long term exposure.

300 ppm – Immediately Dangerous to Life and Health (IDLH).

5,000 ppm – fatal.

Exposure Actions

Air monitoring is required whenever there is potential for exposure to ammonia. Upon alarm, personnel should leave the area immediately. Personal protective equipment (PPE) in the form of impervious gloves, face shields, or full-face respirators and other impervious clothing may be required (Refer to HSE Policies – *Personal Protective Equipment*, *Respiratory Protection*, and *Hazard Communications*). Workers should be aware of where eye wash stations are located in case of eye exposure.

Hot Work permitting precautions may be necessary in areas where ammonia is present (Refer to HSE Policy – *Permit to Work*). Special precautions must be taken when welding, drilling, or cutting piping, vessels, or containers which have previously contained ammonia. The use of proper ventilation that is non-sparking or explosion proof is required when working around ammonia. Ammonia must be stored separately from other chemicals, away from heat and ignition sources (Refer to HSE Policy – *Hazard Communication*). Workers must be aware of the client contingency plans and provisions in the event of a spill or an emergency. All spills or releases must be reported immediately (Refer to HSE Policies – *Spill Prevention & Response*, *Emergency Action Plan*, and *Incident Investigations*).

Aerial Lifts

Only authorized and trained personnel of YATES LINE CO. may operate and access aerial lifts including scissor lifts (Refer to HSE Policy – *Aerial Lifts*). Aerial lifts include those operated manually and self-propelled units, vertical masts, scissor lifts, extendible and articulating boom platforms, telescoping booms, and van mounted articulating booms.

Mobile elevating work platforms are designed for different uses. It is essential to select the right machine for the job. Factors to consider when choosing the appropriate equipment include capacity, surface conditions, platform size and configuration, mobility, material to be lifted, access, and work environment (Refer to HSE Policy – *Risk Assessments*).

YATES LINE CO. employees operating or accessing aerial lifts may expect to generally encounter the hazards of electrical, pinch points, struck-by, crushed-by, caught-in, tip over and collapse, falls, collusion, entanglement, improper use, and hazardous atmospheres (Refer to HSE Policy – *Aerial Lifts*). It is imperative that a proper hazard identification, controls, and risk assessments be performed prior to conducting aerial lift operations (Refer to HSE Policies - *Aerial Lifts* and *Risk Assessments*).

The following YATES LINE CO. safe work practices must be utilized when operating or accessing aerial lifts (Refer to HSE Policy – *Aerial Lifts*):

- **NEVER** operate an aerial lift unless you have the proper training and authorization to do so. Specific training is required for each equipment model that is in use.
- A second person accessing the aerial lift must also be trained and authorized unless there is another trained and authorized person on the ground who may respond in the case of an emergency,
- For elevated work, aerial lifts are always preferred over ladders.
- For each shift, a pre-use safety inspection checklist **MUST** be completed and thoroughly documented prior to use. Aerial lifts with deficiencies must be tagged and taken out of service and repaired prior to use.
- When renting aerial lifts, all lifts must have a pre-use safety inspection completed prior to accepting the rental. Any deficiencies must be reported to supervision immediately to avoid charge backs for damage.
- Operators of aerial lifts must obey all operating instructions, warnings, and cautions for each aerial lift.
- **NEVER** utilize an aerial lift as material hoisting equipment.
- **NEVER** exceed the boom or personnel basket Rated Working Load (RWL) limits.

- When operating an aerial lift in a walkway or roadway, the area must be barricaded with DANGER tape to prevent access by vehicle or foot traffic.
- Before moving the aerial lift, the operator **SHALL** make sure that no person or objects are in the path of travel. Movement of the aerial lift must be communicated to all personnel on or around the aerial lift. The use of a spotter is required when the operator cannot see clearly, or an escort is needed.
- Aerial lifts **MUST** be operated at safe speeds for the conditions.
- **NEVER** operate an aerial lift on soft ground or unlevel surfaces.
- Aerial lifts must **NEVER** be operated during winds greater than 25 mph or severe weather.
- Overhead powerlines **MUST BE LOCATED** prior to commencing aerial lift operations. Operators **MUST** check for wires before traveling with the aerial lift or raising and lowering the platform. **A MINIMUM DISTANCE OF 10 FEET MUST BE MAINTAINED FROM ALL POWERLINES.**
- **PRIOR** to moving the aerial lift, the basket or platform must be lowered.
- When the aerial lift is equipped with outriggers or stabilizers, these must be deployed in accordance with the manufacturer's instructions. **NEVER** move an aerial lift with the outriggers or stabilizers extended.
- **ALWAYS** ensure that the access gate is closed, or safety chain is attached whenever the aerial lift is in use.
- When entering or exiting the platform **ALWAYS** use three points of contact.
- **ALWAYS** keep both feet planted firmly on the floor of the basket or platform.
- **NEVER** step on the midrail or toprail for any reason.
- **NEVER** use boards across midrails.
- **NEVER** use a ladder, bucket, or other objects to extend reach.
- **FALL PROTECTION MUST BE WORN** at all times inside the personnel platform.
- **ALL** occupants of the aerial lift **MUST** tie-off to the manufacturer's designated anchorage point on the aerial lift.
- **NEVER** tie-off to objects outside the aerial lift while working from the platform except when access is needed to climb on to a pipe rack or structural steel (Refer to HSE Policies – *Fall Protection* and *Risk Assessments*).
- Keep hoses, electrical cords, and welding cables clear of moving parts when raising or lowering the personnel platform.
- **DO NOT** tie cords to the guardrails, this can cause tip-overs. Use a method for quick release such as spring clamps.
- The boom or platform **MUST** be lowered when parked. **NEVER** leave aerial lift unattended with the boom in air.

Asbestos Awareness

Asbestos containing materials may be present on jobsites in which YATES LINE CO. is performing work (Refer to HSE Policy – *Asbestos Awareness*). Asbestos containing building material was commonly used in construction prior to 1980. In addition to the potential health hazards of improper handling of asbestos, severe civil and criminal penalties may be imposed on both YATES LINE CO. and individuals involved in illegal handling of asbestos materials. YATES LINE CO. **DOES NOT** perform abatement or removal activities. YATES LINE CO. will make reasonable efforts to identify locations on client properties where asbestos may be present (Refer to HSE Policies – *Asbestos Awareness* and *Risk Assessments*). Laboratory testing is the only method for determining the actual presence of asbestos in building materials.

YATES LINE CO. will require that all clients produce building surveys that indicate the presence of asbestos prior to YATES LINE CO. beginning any work. If no survey is available, all potential asbestos containing materials **MUST** be presumed to be asbestos containing until proven otherwise. This includes ceiling tile, floor tile, roofing, tars and coatings, plaster and spackle, spray-on insulation, thermal system insulation, valve packing, gasket and surfacing materials, brakes and clutches, mastic, putty, cement board, cement pipe, and cement panels. The materials are referred to as Presumed Asbestos Containing Materials (PACM). Employees believing that PACM materials or asbestos dust and debris are present in the

work area, must STOP-WORK, clear the suspect area, and immediately notify their supervisor (Refer to HSE Policies – *Asbestos Awareness* and *Stop Work Authority*).

Only trained and authorized workers of YATES LINE CO. are allowed to inspect, sample, repair, and perform housekeeping duties around asbestos containing materials. Only those workers who are trained, certified, and authorized by YATES LINE CO., using proper personal protective equipment and special work practices, are permitted to handle asbestos (Refer to HSE Policies – *Personal Protective Equipment*, *Asbestos Awareness*, and *Respiratory Protection*).

Employees must treat all valve packing, insulation, gasket and surfacing materials, brakes, and clutches as asbestos containing materials unless proven otherwise by laboratory analysis or testing records.

When working near materials containing asbestos, workers should note that vibration from drilling or hammering as well as air movement from air cooled tools can disturb or dislodge asbestos fibers. **NEVER** drill into, cut, or damage any asbestos containing material. If asbestos containing **friable** (easily broken down by hand pressure) materials such as spray-on fireproofing or pipe insulation is present, all dusts and debris in the area should be presumed to be asbestos contaminated until proven otherwise. All areas above drop ceilings where friable asbestos is present should be carefully evaluated or cleaned by certified asbestos workers prior to any other work being performed.

Remember, Hazardous Levels of Airborne Asbestos Fibers Cannot Be Seen by The Naked Eye. If Asbestos is Being Disturbed, Airborne Fibers May Be Present.

Benzene Awareness

Benzene is a clear liquid solvent made from petroleum (Refer to HSE Policy – *Benzene Awareness*). Benzene has a recognizable odor described as “pleasant and sweet.” Benzene vapors are heavier than air and may travel to a source of ignition and flash back. Benzene vapors are readily dispersed by wind movement and/or air currents. Benzene evaporates into the air very quickly and dissolves slightly in water. Benzene is a highly flammable liquid that can accumulate static electricity (Refer to HSE Policies – *Benzene Awareness* and *Electrical Safety Awareness*). Liquid benzene tends to float on water and may travel to a source of ignition and spread fire. Benzene is highly reactive with no oxidizing materials. Gasoline contains 1% to 4% benzene and is commonly found in refinery operations. As an additive to gasoline, benzene is used to increase octane ratings and reduce engine knocking.

Benzene ranks in the top 20 chemicals for production volume within the United States. Some industries use benzene to make other chemicals which are used in the production of plastics, resins, and nylon and synthetic fibers. Benzene is also used to make some types of rubbers, lubricants, dyes, detergents, drugs, and pesticides. Employees should always refer to a chemical or product’s safety data sheet (SDS) to confirm composition (Refer to HSE Policy – *Hazard Communication*). Benzene is also a natural part of crude oil, gasoline, and cigarette smoke. Often, toluene is used as a substitute for benzene as the solvent properties are similar, but toluene is less toxic and has a wider liquid range.

The following adverse health effects are important to remember where there may be a potential exposure to benzene.

- **Acute:** At high concentrations (1000 ppm) benzene has an acute effect on the central nervous system causing headaches, dizziness, drowsiness, unconsciousness, and possible death. Acute exposure can also lead to breathlessness, irritability, and giddiness.
- **Chronic:** Benzene has a chronic exposure effect on bone marrow (aplastic anemia leukemia). Chronic exposure can also lead to convulsions, liver damage, heart damage, blood diseases (aplastic anemia), and cancer (leukemia). These symptoms can take months to years to surface and can develop without physical or visible indications.

The following are basic guidelines for employees of YATES LINE CO. to follow if exposed to levels of benzene above the OSHA permissible exposure limits (PELs) (Refer to HSE Policy – *Benzene Awareness*).

- Regular jobsite inspections and hazard identification and risk assessment protocols of YATES LINE CO. should be followed to identify potentials for exposure (Refer to HSE Policies - *Risk Assessments* and *Hazard Communication*).
- Appropriate engineering controls should be implemented to keep the source emissions low or limit the amount of exposure to employees. Controls include ventilation systems that capture the amount of the contaminant at the source, or process changes to minimize the amount of time employees spend around exposure sources.
- The areas where benzene levels are above the OSHA PEL are called “exposure control areas”. These areas may change depending upon the type of work to be performed and the measured level of benzene in the atmosphere.
- The boundaries of the exposure area must be marked. These are areas where exposure is dangerous. YATES LINE CO. employees must never enter an exposure area without the proper training, authorization, and personal protective equipment to include an appropriate respirator (Refer to HSE Policies – *Benzene Awareness*, *Personal Protective Equipment*, and *Respiratory Protection*).
- Proper respiratory protection **MUST** be worn by YATES LINE CO. within the exposure area.
- Benzene is a highly flammable liquid, and vapors may form explosive mixtures in the air. Fire extinguishers must be readily available in areas where benzene is used or stored (Refer to HSE Policies – *Benzene Awareness* and *Fire Protection/Extinguishers*).
- Employees of YATES LINE CO. encountering benzene must wash their hands before eating, drinking, smoking, or using the bathroom.
- Employees of YATES LINE CO. are forbidden from eating, drinking, or smoking in the work area where there is potential exposure to benzene.
- Containers containing benzene must be covered when not in use to prevent vapor exposure and spills.
- Rigorous housekeeping is required to keep airborne benzene levels below OSHA permissible exposure limits.
- When the possibility exists of benzene liquid splashing into eyes or on skin, proper personal protective equipment must be worn (Refer to HSE Policies – *Personal Protective Equipment*, *Benzene Awareness*, *Risk Assessments*, and *Hazard Communication*).
- Should benzene be spilled, contact skin or eyes, or potentially inhaled or inhaled, YATES LINE CO. employees should contact their supervisor immediately.
- Should benzene be spilled, **DO NOT** attempt to clean up the spill. Leave the area and contact supervision immediately.
- Workers who can smell the pleasant and sweet odor of benzene most likely have been exposed above the OSHA permissible exposure limit. Odor detection through an air purifying respirator indicates that the respirator is leaking, or the filter is failing (Refer to HSE Policies - *Benzene Awareness* and *Respiratory Protection*). **DO NOT continue** working. **STOP WORK** and notify immediate supervision.

Bloodborne Pathogens

Bloodborne pathogens are pathogenic micro-organisms that are present in human blood and can cause disease in humans (Refer to HSE Policy – *Bloodborne Pathogens*). These pathogens include, but are not limited to, Hepatitis B Virus (HBV) and Human Immunodeficiency Virus (HIV). Universal precautions **MUST** always be used in all cases where there is potential exposure to bloodborne pathogens.

HBV and HIV are not transmitted by:

- Touching an infected person.

- Coughing or sneezing.
- Using the same equipment, materials, toilets, water fountains or showers as an infected person.

HBV and HIV **MAY** be contracted by:

- Potentially contaminated water such as sewage or industrial waste discharge systems.
- Sexual contact.
- Shared hypodermic needles.
- Accidental puncture from contaminated needles, broken glass, or other sharp objects.
- Contact between mucous membranes and infected bodily fluids (Refer to HSE Policies – *First Aid* and *Bloodborne Pathogens*).
- A splash of contaminated blood in the eye(s), nose, or mouth could result in transmission. Blood splashed in the eye or mucous membrane should result in immediate flushing of the area with running water for 15 minutes and then notification of the incident to a supervisor (Refer to HSE Policies – *First Aid*, *Bloodborne Pathogens*, and *Injury and Illness Reporting*).

Exposure Control Plan

YATES LINE CO.'s scope of work creates minimal risk of exposure to bloodborne pathogens for employees (Refer to HSE Policy – *Bloodborne Pathogens*). Below are situations where employees may encounter bloodborne pathogens:

- Working in public places such as hospitals, nursing homes, schools, etc.
- Working on plumbing or wastewater systems.
- Encountering sewage or river water.
- Administering first aid or CPR (Refer to HSE Policy – *First Aid*).
- Cleaning up after a coworker drips blood around a work area.

YATES LINE CO. employees are expected to always use universal precautions that will help minimize the occupational exposure to bloodborne pathogens. Employees are required to use and wear the appropriate personal protective equipment to prevent human blood and bodily fluids from contacting eyes, nose, mouth, open cuts, wounds, punctures, or abrasions of the skin. Typical personal protective equipment includes safety glasses or goggles, disposable medical exam nitrile gloves, leather gloves (where sharp edges are present), surgical masks or face shield, and rescue breathers with a one-way valve when resuscitation or CPR is administered (Refer to HSE Policy – *First Aid*).

EMPLOYEES WHO BELIEVE THEY HAVE OR MAY HAVE BEEN EXPOSED TO BLOODBORNE PATHOGENS MUST CONTACT THEIR SUPERVISOR IMMEDIATELY!!

Cadmium

Cadmium exerts toxic effects on the kidney, the skeletal system, and the respiratory system and is classified as a human carcinogen (Refer to HSE Policy – *Cadmium*). It is generally present in the environment at low levels; however, human activity can increase those levels. Cadmium can travel long distances from the source of emission by atmospheric transport. It is readily accumulated in many organisms, notably mollusks and crustaceans. Human exposure to cadmium primarily occurs from consumption of contaminated food, active and passive inhalation of tobacco smoke, and inhalation by workers in the non-ferrous metal industry.

Sources of Exposure

Cadmium is frequently used as a rust-preventative coating on steel and as an alloying element (Refer to HSE Policy – *Cadmium*). Acute exposures to high concentrations of cadmium fumes can produce severe lung irritation (Refer to HSE Policies - *Cadmium*, *Respiratory Protection*, *Personal Protective Equipment*, and *Hazard Communication*). Long-term exposure to low levels of cadmium can result in emphysema and kidney damage (Refer to HSE Policy – *Cadmium*),

Cadmium fumes or fine dust can cause serious injury or death when inhaled. It is easy to mistake cadmium-plated steel or galvanized steel. When heated, cadmium leaves an olive-drab color as it oxidizes. YATES LINE CO. employees must always confirm the metal they are working with. Cadmium oxide fumes often cause no symptoms until hours after exposure.

Cadmium can be released into the environment in various ways, including: natural activities such as volcanic, weathering and erosion, river transport, tobacco smoking, mining, smelting, and refining of non-ferrous metals, fossil fuel combustion, incineration of municipal waste (especially cadmium containing batteries and plastics), manufacturing of phosphate fertilizers, and recycling of cadmium-plated steel scrap and electric and electronic waste, remobilization of historic sources, such as the contamination of watercourses by drainage from metal mines. Cadmium releases can be carried to and deposited in areas remote from the sources of emission by means of long-range atmospheric transport.

Protection of Employees

When tasks are presumed to generate cadmium exposures greater than the permissible exposure limit (PEL) of OSHA, YATES LINE CO. will treat such situations as if exposure is above the PEL and implement procedures to protect workers until an employee exposure assessment is conducted.

Civil and Underground Construction

The construction of underground tunnels, shafts, chambers, and passageways are essential yet dangerous activities (Refer to HSE Policy – *Civil and Underground*). Working under reduced light conditions, difficult or limited access and egress, with the potential for exposure to air contaminants and the hazards of fire, explosion, and flooding, underground construction workers face many dangers. Regulations and policies and procedures for safe work in underground construction differ from those that apply to trenching and excavation or to underground electrical transmission and distribution lines. To work safely in underground construction, it is important that workers understand the following definitions for construction related activities that fall within the construction field:

A tunnel is an excavation beneath the surface of the ground, the longer axis of which makes an angle of not greater than 20 degrees to the horizontal.

A shaft is a passage made from the surface of the ground to a point underground, the longer axis of which makes an angle of 20 degrees to the horizontal; a pit in which there are employees, and it is foreseeable that they may enter (or do enter) the horizontal excavation; or a pit that has typical underground construction hazards and is connected to horizontal excavation.

YATES LINE CO. will ensure that all employees involved in underground construction be trained to recognize and respond to hazards associated with the type of work. Training will be specific to each jobsite and include any unique issues or requirements. At a minimum, the following topics will be included as part of an underground construction employee training program:

- Air monitoring and ventilation.

- Illumination.
- Communications.
- Flood control.
- Personal protective equipment.
- Emergency procedures, including evacuation plans.
- Check in/check out procedures.
- Explosives.
- Fire prevention and protection.
- Mechanical equipment.

Notification and Communication Requirements

Any time YATES LINE CO. receives notification of a hazardous condition, all oncoming shifts must be notified of occurrences or conditions that either have affected or might affect their safety. Examples of this type of situation include equipment failures, earth or rockslides, cave-ins, flooding, fires, explosions, or release of gas. Requirements also include methods to ensure notification and communication processes with other employers on the jobsite. Communication systems must be tested upon initial entry of each shift to the underground and as often as necessary later to ensure they are in good working order. Powered communications systems must be operated on an independent power supply and be installed so that the use of or disruption of any single communication device or signal location will not disrupt the operation of the system in any other location.

If natural unassisted voice communication is ineffective at any time, a power-assisted means must be used to ensure communication between the work face, the bottom of the shaft, and the surface. In the case of an individual employee working alone underground in a hazardous location who is out of range of natural unassisted voice communication and not able to be observed by other employees, the employer must provide an effective means of obtaining assistance in the event of an emergency. All shafts being developed or used for personnel access or hoisting require two effective means of communication. In addition, hoist operators must have a closed-circuit voice communication system connected to each landing station, with speaker microphones located so that the operator can communicate with individual stations while the hoist is in use.

Site Control Procedures

YATES LINE CO. must maintain a check-in/check-out procedure to ensure that above ground personnel maintain an accurate accounting of the number of people underground and to prevent unauthorized persons from gaining access to the site. This is especially important in the event of an emergency but is always a common-sense requirement. The only time this procedure is not required is when an underground construction project designed for human occupancy is completed to the point that permanent environmental controls are effective, and any remaining construction activity does not have the potential to create an environmental hazard or structural failure in the construction area. Any time an employee is working underground, at least one designated person must be on duty above ground. This person is responsible for calling for immediate assistance and keeping an accurate count of employees who remain underground in the event of an emergency.

Control of Access and Agress

In addition to establishing a check-in/check-out procedure, YATES LINE CO. will ensure safe access to and egress from all workstations at the construction site to protect employees from potential hazards, such as being struck by excavators, haulage machines, or other moving equipment. To help control access, all unused openings, including chutes and

manways, must be tightly covered, bulk headed, barricaded, or fenced off, and posted with warning signs that read, “Keep Out” or similar language.

Ground Support of Portal and Subsidence Areas

Portal openings and access areas must be guarded by shoring, fencing, head walls, shotcreting, or equivalent protection to ensure that employees and equipment have a safe means to access these areas. Subsidence areas must be similarly guarded by shoring, filling in, or placing barricades and warning signs to prevent entry. Adjacent areas must be scaled or secured to prevent loose soil, rock, or fractured materials from endangering portal, subsidence, and access areas.

Ground Support of Underground Areas

A competent person must inspect the roof, face, and walls of the work areas at the beginning of each shift and as often as necessary to ensure ground stability. The competent person tasked with such inspection responsibilities must be protected from loose ground by location, ground support, or equivalent means. The ground conditions along all haulage ways and travel ways must also be inspected as frequently as necessary to ensure safe passage and loose ground considered to be hazardous to employees must be scaled, supported, or taken down. A competent person must determine how often rock bolts need to be tested to ensure that they meet the necessary torque, taking into consideration ground conditions, distance from vibration sources, and the specific bolt system in use. Only torque wrenches should be used when torsion-dependent bolts are used for ground support.

Employees involved in installing ground support systems must be adequately protected from the hazards of loose ground. The bottoms of any support sets installed must have sufficient anchorage to prevent ground pressures from dislodging the support base. Lateral bracing (including collar bracing, tie rods, or spreaders) must be provided between immediately adjacent sets to increase stability. Any dislodged or damaged ground supports that create a hazardous condition must be promptly repaired or replaced. The new supports must be installed before removing the damaged supports. Some type of support, such as a shield, must be used to maintain a safe travel way for employees working in dead-end areas ahead of any support replacement operations.

Ground Support of Shafts

Shafts and wells more than 5 feet in depth (1.53 m) entered by employees must be supported by steel casing, concrete pipe, timber, solid rock, or other suitable material. The full depth of the shaft must be supported except where it penetrates solid rock that will not change as a result of exposure. Where the potential for shear exists, where the shaft passes through earth into solid rock in either direction, or where the shaft ends in solid rock, the casing or bracing must extend at least 5 feet (1.53 m) into the solid rock. The casing or bracing must also extend 42 ($\pm$ 3) inches above ground level unless a standard railing is installed, the adjacent ground slopes away from the shaft collar, and barriers exist to prevent mobile equipment operating near the shaft from jumping over the bracing. If these conditions are met, the casing or bracing may be reduced to 12 inches above ground.

Fire Prevention and Control

In addition to the basic fire prevention and control guidance set forth in HSE Policy – *Fire Prevention*, underground construction operations are subject to several specific requirements. Open flames and fires are prohibited in underground construction areas except as permitted for welding, cutting, or other hot work operations. Smoking is prohibited unless an area is free of fire and explosion hazards. Signage prohibiting smoking and open flames should be placed throughout work areas. Fire extinguishers of at least 4A:40B:C rating or equivalent extinguishing means must be available at the head and tail pulleys of underground belt conveyers. All underground structures and those within 100 feet (30.48 m) of an opening to the underground must be constructed of materials with a fire resistance rating of at least one hour. Also, no flammable or

combustible material may be stored above ground within 100 feet (30.48 m) of any access point to an underground operation. If space limitations make this unfeasible, the material must be positioned as far as possible from the entrance with a fire-resistant barrier that has at least a one-hour rating between the material and the opening. Alternative precautionary measures may be adopted from industry practices used under similar working conditions or measures recommended under industry consensus standards. A site hazard analysis may be helpful to determine the effectiveness of precautionary measures. Any spill of flammable or combustible material must be cleaned up immediately. Gasoline may not be underground at any time for any purpose due to its volatile qualities. Internal combustion engines (except diesel-powered engines on mobile equipment) are prohibited underground. Acetylene, liquefied petroleum gas, and methyl acetylene propadiene stabilized gas may be used underground for welding, cutting, and other hot work if all requirements of OSHA regulations pertaining to such activities are met (see 29 CFR 1926 Subpart J and 29 CFR 1926.800(j)(k)(m)(n) for a complete explanation of these requirements). Only enough fuel gas and oxygen cylinders for welding, cutting, or hot work during a 24-hour period are allowed underground. Noncombustible barriers must be installed below such activities if they are performed in or over a shaft or rise. Oil, grease, and diesel fuel stored underground must be kept in tightly sealed containers in fire-resistant areas at least 300 feet (91.44 m) from underground explosive magazines, and at least 100 feet (30.48 m) from shaft stations and steeply inclined passageways. Storage areas must be positioned or diked to ensure that if a container breaks open, no fluids will not flow out of the storage area. Any hydraulically actuated underground machinery must use fire-resistant hydraulic fluids unless it is protected by a fire suppression system or multi-purpose fire extinguisher rated at least 4A:40B:C and of sufficient capacity for the type and size of equipment involved. Several specific requirements apply to the use of diesel fuel in underground construction operations, as follows:

- A surface level tank holding diesel fuel to be pumped to an underground storage site must have a maximum capacity no greater than the amount of fuel required to supply underground equipment for 24 hours.
- A surface level tank must be connected to the underground fueling station by an acceptable pipe or hose system controlled at the surface by a valve and at the bottom by a hose nozzle.
- The transfer pipe must remain empty at all times except when transferring diesel fuel.
- All hoisting operations in the shaft must be suspended during refueling operations if the supply piping in the shaft is not protected from potential damage.

Ventilation Requirements

Fresh air must be supplied to all underground work areas in sufficient amounts to prevent any dangerous or harmful accumulation of dust, fumes, mists, vapors, or gases. If natural ventilation does not provide the necessary air quality through sufficient air volume and air flow, the employer must provide mechanical ventilation to ensure that each employee working underground has at least 200 cubic feet (5.7m³) of fresh air per minute. When performing work that is likely to produce dust, fumes, mists, vapors, or gases (such as blasting or rock drilling), the linear velocity of air flow in the tunnel bore, shafts, and all other underground work areas must be at least 30 feet (9.15 m) per minute. When such operations are complete, the ventilation systems must exhaust smoke and fumes into the outside atmosphere before resuming work in all affected areas. When drilling rock or concrete, dust control measures such as wet drilling, vacuum collectors, and water mix spray systems must be used to maintain dust levels within limits set in 29 CFR 1926.55, which includes gases, vapors, fumes, dusts, and mist. The direction of mechanical airflow must be reversible, but ventilation doors must be designed and installed to remain closed when in use, regardless of the direction of the airflow. If the ventilation system has been shut down and all employees are removed from the underground area, only competent persons authorized to test for air contaminants may be allowed underground until the ventilation system has been restored and all affected areas have tested at acceptable limits for air contaminants.

Illumination Requirements

As in all construction operations, OSHA requires that proper illumination be provided during tunneling operations (see 29 CFR 1926.56 for details). When explosives are handled, only acceptable portable lighting equipment may be used within 50 feet of any underground heading. For general tunneling operations, a minimum illumination intensity of 5 foot-candles must be maintained, although 10 footcandles must be provided for shaft heading during drilling, mucking, and scaling.

Special Air Monitoring Requirements

YATES LINE CO. will assign a “competent person” to perform air monitoring. Should the competent person determine at any time that air contaminants may present a danger to life, YATES LINE CO. employees will take all necessary precautions and post a notice at all entrances to the underground site about the hazardous condition.

In performing air monitoring duties, the competent person must take into consideration the location of the jobsite (its proximity to fuel tanks, sewers, gas lines, etc.); the geology of the site, including soil type and permeability; the history of the site and the construction operation (changes in levels of substances monitored over time); and work practices at the jobsite (use of diesel engines, explosives, and fuel gas); hot work, welding, and cutting; and the physical reactions of employees to working underground.

Test for Oxygen Levels First

The competent person charged with air monitoring must test for oxygen content before testing for air contaminants. All underground work areas must be tested as often as necessary to verify that the atmosphere at normal atmospheric pressure remains within the acceptable parameters of 19.5 and 22 percent oxygen. After verifying oxygen levels, the competent person must test all underground work areas for carbon monoxide, nitrogen dioxide, hydrogen sulfide, and other toxic gases, dusts, vapors, mists, and fumes as often as necessary to ensure that levels remain within permissible exposure limits (see 29 CFR 1926.55 for detailed information on these limits).

Test for Methane and Other Flammable Gases

The competent person must also test all underground work areas for methane and other flammable gases to determine whether the operation must be classified as potentially gassy or gassy. If the atmosphere meets the criteria for these designations, the precautions listed in the section discussing gassy or potentially gassy operations later in this booklet must be followed. Other precautions to take when testing for methane or other flammable gases include:

- If 20 percent or more of the lower explosive limit for methane or other flammable gases is detected in any underground work area or in the air return, all employees must be evacuated to a safe location above ground (except those employees required to eliminate the hazard). Electrical power (except for acceptable pumping and ventilation equipment) must be cut off to the area until concentrations reach less than 20 percent of the lower explosive limit.
- If 10 percent or more of the lower explosive limit for methane gas or other flammable gases is detected near any welding, cutting, or other hot work, the work must be suspended until the concentration is reduced to below 10 percent of the lower explosive limit.
- When 5 percent or more of the lower explosive limit for methane or other flammable gases is detected in an underground work area or in the air return, steps should be taken to increase ventilation air volume or otherwise control the gas concentration (unless all requirements of operating under potentially gassy or gassy operations are met).

Hydrogen Sulfide Levels – (Refer to HSE Policy – *Hydrogen Sulfide*)

When air monitoring reveals the presence of 5 ppm or more of hydrogen sulfide, the affected underground areas must be tested at the beginning and midpoint of each shift until the concentration is measured at less than 5 ppm for three consecutive days. Employees must be notified if hydrogen sulfide is detected in amounts exceeding 10 ppm and a continuous sampling and indicating monitor must be used to keep track of levels. If the concentration of hydrogen sulfide reaches 20 ppm, the monitor must be designed to provide both visual and audible alarms to warn that additional measures (respirator use, increased ventilation, evacuation) may be appropriate.

Special Conditions for Drilling and Blasting Underground

Before initiating any drilling operation underground, a “competent person” must inspect all drilling and associated equipment as well as the drilling area and correct any hazards. Employees are not allowed on a drill mast when a drill bit is in operation, or a drill machine is being moved. Also, when moving a drill machine, all associated equipment and tools must be secured, and the mast placed in a safe position.

Working on or around jumbo decks involves special safety precautions, including the following:

- Locate all receptacles or racks to store drill steel on jumbos.
- Warn employees working below jumbo decks when drilling is about to begin.
- The top deck of a jumbo must have a mechanical way to life unwieldy or heavy items.
- Only employees assisting the operator may ride on the jumbo unless it is equipped with seating for each passenger and protected from crushing or catching hazards.
- Jumbo decks more than 10 feet high must be equipped with guardrails on all open sides unless an adjacent surface provides fall protection. Jumbo decks and stair treads must be slip-resistant, secured, and maintained to prevent slip, trip, and fall hazards.
- Jumbos must be chocked so they will not move when employees are working on them.

Whenever an underground blasting operation in a shaft is complete, a “competent person” must check the air quality and make sure that no walls, ladders, timbers, blocking, and wedges have been loosened because of the activity. If repairs are required, only employees involved in repair activity may be in or below affected areas until repairs are complete. All blasting wires must be kept clear of electrical lines, pipes, rails, and other conductive material (except earth), to prevent explosions or exposure of employees to electric current.

Gassy or Potentially Gassy Operations

Gassy or potentially gassy operations present specific hazards to underground construction workers. It is essential that employers understand the terms “gassy” and “potentially gassy” and to know what precautions to take when dealing with such environments. Operations that meet the criteria for this hazardous classification must be equipped with ventilation systems constructed with fire resistant materials; have acceptable electrical systems, including fan motors; and have above ground controls to reverse the air flow. When using a mine-type ventilation system with an offset main fan on the surface, the system must be equipped with explosion doors or a weak-wall with an area at least equivalent to the cross-sectional area of the airway.

Gassy operations occur under the following conditions:

- When air monitoring discloses 10 percent or more of the lower explosive limit for methane or other flammable gases measured at 12 inches (304.8 mm) $\pm$ 0.25 inch (6.35 mm) from the roof, face, floor, or walls in any underground work area for three consecutive days; or

- There has been an ignition of methane or other flammable gases emanating from the strata that indicates the presence of such gases; or
- The underground construction operation is connected to an underground work area classified as gassy and subject to a continuous course of air that contains the flammable gas concentration.

YATES LINE CO. and federal regulations require that gassy operations meet several special requirements, including both personnel and equipment safety concerns. These requirements include:

- Entrances to a gassy operation must be marked with prominently posted signage that identifies the area as gassy.
- Maintain a fire watch when performing hot work (welding, cutting, heating) in a gassy area and for a sufficient period after completing the work to ensure no possibility of fire remains (see HSE Policy – *Permit to Work*).
- Use only acceptable equipment in well-maintained condition. Any mobile diesel-powered equipment must either be approved by MSHA and meet the requirements of 30 CFR part 36 (formerly Schedule 31) or the employer must demonstrate that the equipment is fully equivalent to MSHA-approved equipment and operated according to these regulations.
- Smoking is prohibited in all gassy operations; the employer must collect all possible sources of ignition (matches, lighters, etc.) from any person entering a gassy operation area.
- All operations in the affected area must stop when an operation is classified as gassy until full compliance with gassy operation requirements is confirmed or the operation is downgraded to a potentially gassy operation (see the following section). The only exceptions are operations to control the gas concentration, installation of above ground equipment to reverse the airflow, or actions to comply with gassy operation requirements.

Gassy operations can be downgraded to potentially gassy when air monitoring results remain below 10 percent of the lower explosive limit for methane or other flammable gases for three consecutive days.

Potentially gassy operations, such as an unexpected pocket of gas, occur when the following conditions exist:

- Air monitoring shows 10 percent or more of the lower explosive limit for methane or other flammable gases measured at 12 inches (304.8 mm) $\pm$ 0.25 inch (6.35 mm) from the roof, face, floor, or walls in any underground work area for more than a 24-hour period.
- The history of the geographical area, geological formation, or experience indicates that 10 percent or more of the lower explosive limit for methane or other flammable gases is likely to be encountered in such underground operations.

Both gassy and potentially gassy operations require special air monitoring actions under the guidance of a “competent person,” including testing for oxygen and flammable gas content in the affected underground work areas and adjacent work areas at the beginning and midpoint of each work shift. A manual flammable gas monitor should be used for gas testing and a manual electrical shut down control must be provided near the heading for the gas monitor. The use of rapid excavation machines requires continuous automatic flammable gas monitoring to monitor the air at the heading, on the rib, and in the return air duct. If 20 percent or more of the lower explosive limit for methane or other flammable gases is encountered, the continuous monitor alert should signal the heading and shut down electrical power in the affected underground work area (except for required pumping and ventilation equipment).

Local gas tests must be conducted before and throughout welding, cutting, or other hot work. In underground operations driven by drill-and-blast methods, the air in the affected area must be continuously tested for flammable gas when employees are working in the area as well as before reentering after blasting operations.

Emergency Procedures

Whenever an employee is working underground at least one designated person must be on duty above ground, responsible for maintaining an accurate count of the number of employees underground, and summoning emergency aid if needed. Every employee working underground must have a portable hand lamp or cap lamp for emergency use unless natural light or an emergency lighting system provides adequate illumination for escape. Employers must provide self-rescuers approved by the National Institute for Occupational Safety and Health (NIOSH) in all underground work areas where employees might be trapped by smoke or gas (see CFR 1926.103 for more information). If 25 or more employees work underground at one time, the employer must provide at least two 5-person rescue teams, one at the jobsite or within 30 minutes travel time from the entry point to the site and the other team within two hours travel time. If less than 25 employees work underground, the employer must have one 5-person rescue team at the jobsite or within 30 minutes travel time. In both situations, advance arrangements can be made for local rescue services to meet this requirement. Rescue team members must be trained in rescue procedures, the use and limitations of breathing apparatus, and the use of firefighting equipment with qualifications reviewed annually. When flammable or noxious gases are anticipated at a jobsite, rescue teams must practice using self-contained breathing apparatus once a month. The rescue teams must be available through the duration of a construction project. If a shaft is used as the means of egress, the employer must arrange for a readily available power-assisted hoisting capability in case of emergency, unless the regular hoisting means will function in the event of a power failure.

Compressed Air Equipment

Operators of YATES LINE CO. and subcontractors shall only use hoses and couplings with safety blast holes that are designed to handle the pressure of compressed air (Refer to HSE Policy – *Compressed Air Equipment*). Couplings are not to be altered and must be inspected prior to use. Compressed air should never be used to clean floors, other surfaces, or people. Air hoses must never be supported by conduits. Before uncoupling, valves must be shut off and hoses bled.

Compressed Gas Cylinders

Before using any compressed gas cylinders, YATES LINE CO. employees and subcontractors must identify the gas, understand the hazards, and know what steps to take in the event of an emergency (Refer to HSE Policies – *Compressed Gas Cylinders*, *Hazard Communication*, and *Emergency Action Plan*). This information can be found on Safety Data Sheets (SDSs), labels, and cylinder markings. **DO NOT USE** compressed gas cylinders where the contents are unknown.

Prior to each use, YATES LINE CO. employees and subcontractors are required to inspect the complete gas and hose system for leaks. A flame must **NEVER** be used to check for leaks. Compressed gas cylinders found to be leaking or defective are to be taken out of service, tagged, and supervision notified. **DO NOT** remove the product identification label or make changes to the cylinder color.

Compressed gas cylinders must be stored in an upright position, and away from material handling and mobile equipment. All compressed gas cylinders must be chained or fire retardant strapped or otherwise secured in an upright position and always placed on cylinder carts when being moved. Prior to moving a compressed gas cylinder, gauges must be removed, and valve protection caps verified in place. YATES LINE CO. employees and subcontractors are forbidden to move compressed gas cylinders by tilting and rolling them on their bottom edges. In no instance shall the cylinders be intentionally dropped, struck, or permitted to strike each other violently.

Compressed gas cylinders, whether full or empty, shall never be used as rollers or support. YATES LINE CO. employees and subcontractors must always keep compressed gas cylinders a minimum of ten (10) feet from welding or cutting operations so that sparks, hot slag, or flame cannot reach the cylinders (Refer to HSE Policies – *Compressed Gas Cylinders*, *Fire Protection/Extinguishers*, and *Welding, Cutting, Hot Work*). When this is impractical, supervisors must be notified, and fire-resistant shields utilized. Cylinders should not be exposed to continuous dampness or any kind of corrosive chemicals or fumes, as corrosion may damage them and cause the valve protection caps to rust or stick.

Cylinders must be kept clear of all electrical equipment or grounding cables and electrical circuits (Refer to HSE Policies – *Compressed Gas Cylinders* and *Electrical Safety Awareness*).

NEVER strike an arc on a compressed gas cylinder or make a cylinder part of an electrical circuit (Refer to HSE Policies – *Compressed Gas Cylinders*, *Electrical Safety Awareness*, and *Welding, Cutting, Hot Work*).

NEVER attempt to lift a compressed gas cylinder with its valve protection cap or guard.

NEVER use oxygen as a substitute for compressed air (Refer to HSE Policies – *Compressed Air Equipment*).

NEVER take compressed gas cylinders into confined spaces (Refer to HSE Policies - *Confined Space* and *Compressed Gas Cylinders*).

When in use, **DO NOT** open the valve more than 1-½ turns to allow for quick closing.

Compressed gas cylinders that are not equipped with a valve handle shall be provided with a valve wrench. The valve wrench **MUST** be kept on the valve to facilitate emergency shut-off. Always close the cylinder valve and bleed off all pressure after each use. **IN NO INSTANCE** shall YATES LINE CO. employees or subcontractors repair or modify cylinder valves or safety relief devices.

Oxygen under pressure forms an explosive mixture when it encounters oil and grease. Regulators, valves, gauges, and fittings **MUST** be free of oil, grease, and/or lubricants. YATES LINE CO. employees and subcontractors are forbidden from handling these parts with greasy hands or gloves.

YATES LINE CO. employees should use compressed gas cylinders in the order they are received from the supplier. When a cylinder is nearly empty, the valve should be closed, and the cylinder marked “EMPTY” or “MT”.

Storage of Compressed Gas Cylinders – (Refer to HSE Policy – *Compressed Gas Cylinders*)

OSHA considers cylinders to be in storage when it is reasonably anticipated that gas will not be drawn from the cylinder within 24 hours. At that point storage requirements **MUST** be met (Refer to HSE Policy – *Compressed Gas Cylinders*). Oxygen cylinders in storage **SHALL** be separated from fuel-gas cylinders or combustible materials (especially oil or grease), by a minimum distance of twenty (20) feet, or by a non-combustible barrier at least 5 feet high and having a fire-resistance rating of at least one-half hour (30 minutes).

ALWAYS store compressed gas cylinders in an area which is specifically designated for that purpose. It should be well-ventilated and away from highly combustible materials. Valve protection caps **SHALL** be in place and secured to protect the valve whenever the cylinder is not in use, being moved, in storage, or empty. **ALWAYS** store cylinders securely. Cylinders should be securely placed on a level surface and chained to prevent tipping over and should not be stored near elevators, stairs, and walkways or other places where they are likely to be knocked over. Store cylinders to avoid the possible destruction or obscuring of the cylinder coloring, tags, and other means of identifying the cylinder contents. **NEVER** store tools, materials, rope, extension cords, clothing, or anything else on top of cylinders.

Confined Space

All YATES LINE CO. employees and subcontractors are required to comply with the procedures established by the written Confined Space program (Refer to HSE Policy – *Confined Space*). A confined space is one that:

- Has adequate size and configuration for a person to enter it;
- Has limited means for entry or exit; and
- Is not designed for continuous human occupancy.

Examples of confined spaces include, but are not limited to heating, ventilations, and air conditioning ducts (HVAC), conveyors, pits, process vessels, turbines, chillers, bag houses, boilers, mixers/reactors, utility vaults, bins, silos, hoppers, pipelines, tunnels, shafts, manholes (sewer, storm drain, electrical, communication, or other utility), sewers, storm drains, water mains, lift stations, incinerators, tanks (fuel, chemical, water or other solid, liquid or gas), scrubbers, shafts, wells, rail cars, basements (before steps are installed), and crawl spaces.

Permit Required Confined Space – (Refer to HSE Policy – *Confined Space*)

A permit required confined space is a confined space by definition and includes one or more of the following characteristics:

- Contains or has the potential to contain a hazardous atmosphere; or
- Contains a material that has the potential for engulfing an entrant; or
- Has an internal configuration such that an entrant could be trapped or asphyxiated in inwardly converging walls or by a floor which slopes downward and tapers to a smaller cross section; or
- Contains any other serious, recognized safety or health hazard.

Clients of YATES LINE CO. are required by law to post all spaces that are classified as permit required confined spaces. However, any space that meets the characteristics of either a confined space or a permit required confined space that is “not posted” will be evaluated by YATES LINE CO. supervision and safety personnel to determine if the space meets permit required confined space criteria. **NO EMPLOYEE OR SUBCONTRACTOR SHALL ENTER A PERMIT REQUIRED CONFINED SPACE WITHOUT PROPER TRAINING AND AUTHORIZATION.**

Prior to entry into a permit required confined space, employees will be trained on the entry permit and procedures and **MUST** follow all the provisions of the entry permit. **Additional training MAY BE REQUIRED FOR ENTRY** such as Hazard Communications, Fall Protection, Lockout/Tagout, and Respiratory Protection (Refer to HSE Policies - *Hazard Communications, Fall Protection, Lockout/Tagout, and Respiratory Protection*).

YATES LINE CO. safety personnel MUST be notified prior to employees entering permit required confined spaces.

YATES LINE CO. requires that a pre-entry meeting be performed prior to entry into a permit required confined space. The pre-entry meeting is critical to working in confined spaces safely. The pre-entry meeting **MUST** be conducted with the customer and all personnel involved in the entry. The meeting **MUST** include a review of the scope of work to be performed, the potential hazards, the means and methods to control those hazards, atmospheric testing results, the communication method to be used between the entrants and attendant, and the emergency procedures. A properly completed confined space entry permit **MUST** be completed prior to entering the space and signed by the entry supervisor (Refer to HSE Policy – *Confined Space*).

Once completed, the confined space entry permit **MUST** be posted at the location of entry. Any additional work permits, (e.g., hot work, lockout/tagout) **MUST** be completed and posted prior to entry.

The entry supervisor is responsible for ensuring proper ventilation for each space and must be calculated and planned accordingly. Ventilation could include natural, mechanical, positive, negative, and various openings in the space, etc. Depending upon the size, the space should be ventilated for a minimum of 30 minutes prior to entry. Proper care must be taken to ensure that ventilation air is not contaminated (such as with carbon monoxide) from nearby vehicles. Flexible ductwork for ventilation **MUST** be as straight as possible for optimal airflow.

Prior to making entry, the space **SHALL** be tested for a hazardous atmosphere. Air monitoring shall be conducted for:

- Oxygen (between 19.5% - 23.5%).
- Combustible gases/vapors (LEL – Lower Explosive Limit <10%).
- Toxic gases/vapors such as:
 - Sulfur Dioxide – SO_2 < 2 ppm
 - Hydrogen Sulfide – H_2S < 10 ppm (Refer to HSE Policy – *Hydrogen Sulfide*)
 - Carbon Monoxide – CO < 35 ppm

Atmospheric readings of low oxygen or toxic gases or vapor exceeding the PEL or company occupational exposure limit (OEL) require permission of YATES LINE CO. supervision and safety plus the appropriate respiratory protection and training (Refer to HSE Policy – *Respiratory Protection*).

Initial air monitoring tests **MUST** be conducted from outside the confined space and taken at the top, middle, and bottom of the space. Entry into the confined space is not allowed until acceptable atmospheric conditions have been met or mitigated through appropriate respiratory protection (Refer to HSE Policies - *Respiratory Protection* and *Risk Assessments*). The confined space **SHALL** be ventilated as needed to maintain a safe working atmosphere.

The confined space atmosphere **MUST** be monitored and recorded during the duration of the entry. Continuous air monitoring is required (Refer to HSE Policy – *Confined Space*). Readings are to be documented on the confined space entry permit every 30 minutes or more often if required. Should the atmosphere become hazardous, entrants **MUST** evacuate the space immediately. Re-entry is not allowed until a safe condition is achieved and a new permit is issued.

All entrants **MUST** wear a safety harness attached to a retrieval line unless the use of this equipment creates a significant hazard or inhibits self-rescue. For entries with a vertical drop of more than five feet from the opening, a mechanical device **MUST** be available to retrieve personnel.

A rescue plan **MUST** be planned with appropriate rescue personnel on alert before entry. Rescue equipment **MUST** be pre-staged and readily available. Upon completion of the work activities in the space, YATES LINE CO. supervision SHALL terminate the entry and retain the written confined space entry permit per the company's document retention policies.

Cranes

Any time a lift is being performed with a crane, a YATES LINE CO. pre-lift check list must be completed by the crane operator and rigging crew during the pre-lift meeting (Refer to HSE Policies – *Cranes* and *Risk Assessments*). Cranes **MUST** be inspected daily by a qualified and authorized crane operator. Only those employees properly trained, qualified, certified, and authorized by YATES LINE CO. may operate cranes.

Personnel are prohibited from walking or standing under any suspended load or inside the angle of a winch or towline. Safe Working Load Limits (SWL) **MUST** not be exceeded for all cranes and rigging equipment (Refer to HSE Policies – *Cranes* and *Rigging Equipment for Material Handling*). All cranes must contain a current and correct load chart for the crane's

configuration, setup, the load weight, and lift path. All parts of the crane **MUST MAINTAIN A DISTANCE OF A MINIMUM OF 10 FEET FROM ALL POWERLINES.**

YATES LINE CO. employees and subcontractors are forbidden from riding on any lift, hook, chain, or cable sling suspended from a crane or hoist. The lift area and swing radius of the crane **MUST** be clearly identified, marked, and barricaded or constantly attended by an authorized person to prevent an individual, employee or other persons and traffic from being struck. Employees not assisting in lifting operations **SHALL** stay clear of such areas. Only qualified riggers, so designated by YATES LINE CO. that have successfully completed rigger training and are authorized by the company shall perform rigging activities (Refer to HSE Policies – *Cranes and Rigging Equipment for Material Handling*). All lifting cables and straps must be inspected by a competent person prior to use. Rigging apparatus found to have damage or excessive wear **MUST BE REMOVED** from service immediately.

Hoist lines should never be wrapped around the load. Winch lines, ropes, or wire ropes **SHALL NOT** be guided by hand when standing within reach of a drum or sheave. The first lift of the day, the load **SHALL** be test-lifted by raising a few inches, held, verifying capacity/balance and brake system checked before delivering any load. Lifts **SHALL NOT** be made during strong winds >25 mph or severe weather. An employee **SHALL** be designated to observe clearance of the equipment and give timely warning for all operations where it is difficult for the operator to maintain the desired clearance by visual means.

Signals to the equipment operator **SHALL** be given by one qualified signal person designated to perform this task. The crane operator **SHALL** obey the “**STOP**” signal given by anyone. Radios **MUST** be used if the crane operator and rigger do not have clear vision of each other. Radio channels **MUST** be designated before the lift begins. Bridge cranes and overhead chain hoists **SHALL** be used with correct rigging and close observance of the surroundings.

Standard Hand Signals for Crane Operators (Refer to HSE Policies - *Cranes and Rigging Equipment for Material Handling*)



Extend Boom



Retract Boom



Stop



Hoist the Load



Lower the Load



Swing



Raise Boom/Lower Load



Lower Boom/Raise Load



Dog Everything



Slowly Raise Load



Slowly Lower Load



One Handed Extend Boom



Raise Boom



Lower Boom



One Handed Retract

Rigging Equipment for Material Handling

Rigging and hoisting refers to the lifting and moving of loads using mechanical devices such as hoists, slings wire ropes, shackles, chain-falls, etc. (Refer to HSE Policies – *Cranes and Rigging Equipment for Material Handling*). Improper design, use, or maintenance of hoists, lifting devices, and rigging equipment can cause equipment to fail or a load to be dropped, which can result in serious injury or death, or significant property loss.

YATES LINE CO. employees and subcontractors who perform rigging activities play a critical role in helping ensure that each lift is done safely. The mere lifting of an object from the ground successfully does not mean it was rigged properly or safely. Only those YATES LINE CO. employees and subcontractors who have completed qualified rigger training and are authorized by the company may perform rigging activities, to include the role of the signal person.

Site supervision is responsible for ensuring that only qualified and authorized personnel are engaged in rigging and signal person activities. A YATES LINE CO. pre-lift checklist **MUST** be utilized when using a crane to lift or set materials and/or equipment into place (Refer to HSE Policies – *Cranes, Rigging Equipment for Material Handling, and Risk Assessments*). A pre-lift inspection of all rigging materials, equipment, and apparatus is required prior to the lift to ensure rigging is safe and functioning correctly. All personnel involved in the rigging and lifting operation **MUST** be familiar with standard hand signals for controlling and directing the crane operator. All YATES LINE CO. cranes operators are required to **STOP** the lift if the operator determines that the signal person does not know or utilize proper signal techniques (Refer to HSE Policies – *Cranes and Rigging Equipment for Material Handling*).

Proper communication can help prevent rigging and lifting incidents. Communication is not only critical between riggers and crane operators but also with those in proximity to the hoisting operation. All personnel must be made aware a lift is taking place, including those workers of other trades and companies.

Hoists, lifting equipment, cables, straps, and rigging equipment must be inspected before each use daily. All slings **MUST** have permanently affixed and legible identification markings that indicate the recommended safe working load for the type(s) of hitch(es) used, the angle upon which that is based, and the number of legs if more than one (Refer to HSE Policies – *Cranes and Rigging Equipment for Material Handling*). The load capacity limits **MUST** be stamped or affixed to all rigging components. If missing, the rigging component **MUST** be removed from service and supervision notified. Defective equipment **SHALL** be removed from service and destroyed to prevent inadvertent use.

At no time shall YATES LINE CO. employees or subcontractors exceed the designed load capacity or Working Load Limit (WLL) for any lifting device or rigging equipment. All rigging equipment not in use should be removed from the immediate work area to not present a hazard to employees and others. Walking or standing beneath suspended loads is **STRICTLY PROHIBITED**.

Workers should never place hands/fingers between a sling and its load while the sling is being tightened around the load. All body parts should be kept away from between the sling and the load and between the sling and the crane or hoist hook. All persons should remain clear of loads about to be lifted and suspended.

YATES LINE CO. employees and subcontractors **MUST** use taglines unless such use creates a bigger hazard in controlling the load. At a minimum, leather gloves must be used as personal protective equipment (PPE) when handling a tagline. Taglines **MUST** never be wrapped around the body or arms as a way of controlling or stopping the load. **NEVER** step into a loop in the tagline. People should **NEVER** position themselves between an immovable object and a load that is not resting completely on the ground. Taglines **MUST ALWAYS** be released in cases where entrapment or construction are potential hazards.

General Lifting and Rigging Operational Guidelines

The following are general safe work practices for rigging operations. Please refer to HSE Policies - *Cranes and Rigging Equipment for Material Handling* for additional guidance and site-specific safety measures from supervision.

- Keep suspended loads clear of all obstructions.
- Employees are prohibited from riding on any lift, hook chain, or cable sling suspended from a crane or hoist.
- Ensure that, in a chock hitch, the choke point is only on the sling body. **NEVER** on a splice or fitting.
- **DO NOT** rest or drop load on chain.
- **DO NOT** pull a sling from under a load when the load is resting on the sling.
- **DO NOT** drag slings on the floor or over abrasive surfaces.
- Ensure that slings are not constricted, bunched, or pinched by the load, hook, or any fitting.
- Eliminate twists, knots, kinks before lifting.
- **DO NOT** shorten or lengthen a sling by knotting or twisting.
- **DO NOT** point load hooks. The load should be seated properly within the throat opening and centered in the bowl of the hook.
- Balance the load to avoid undue stress on one leg of multi-leg slings.
- **NEVER** bounce, jerk, or shock load a sling when lifting or lowering items.
- **AVOID** sudden starts and stops when moving loads.
- **DO NOT** use slings, eye bolts, shackles, or hooks that have been cut, welded, or brazed.
- Makeshift links or fasteners or other such attachments are **FORBIDDEN**.
- **DO NOT** use manila rope for rigging.
- Install wire rope clips (cable clamps) properly. Use the correct size and number of clips.
- Store slings in a dry area out of direct sunlight, extreme temperatures, moisture, mechanical damage, or corrosive environments. **DO NOT** leave slings in the back of pickup trucks.
- **DO NOT** use nylon rigging slings for fall protection.
- **NEVER** install U-bolts on the live end of the wire rope. The live end is where the saddle goes, “**NEVER** saddle a dead horse.”

Rigging a Load

Perform the following when rigging a load:

- Determine the weight of the load. **DO NOT GUESS**.
- Determine the proper size for slings and components. Look for a permanently attached identification tag on each sling stating the size, grade, rated capacity, and the name of the sling manufacturer. If the identification is not attached, take the defective equipment out of service.
- Make sure that shackle pins and shouldered eye bolts are installed in accordance with the manufacturer's recommendations.
- Make sure that ordinary (shoulder less) eye bolts are threaded in at least 1.5 times the bolt diameter.
- Use safety hoist rings (swivel eyes) as a preferred substitute for eye bolts wherever possible.
- Use wear pads to protect slings from sharp edges. Remember that machinery foundations or angle-iron edges may not feel sharp to the touch but could cut into rigging when under several tons of load. Wood, tire rubber, or other pliable materials may be suitable for padding.
- Verify that each sling can support the load based on the projected horizontal angle of the sling during the lift.
- Calculate the sling tension before the lift to ensure that it can support the load.

- Determine the center of gravity and balance the load before moving the load.
- Initially lift the load only a few inches to test the rigging and balance.
- Tag lines **SHALL** be used as required to prevent the load from swinging during the lift.

Driving Safety

It is the driver of each company vehicle's responsibility to drive or operate the vehicle in a safe manner and to drive defensively to prevent injuries and property damage (Refer to HSE Policy – *Driving Safety*). YATES LINE CO. expects each driver to drive in a safe and courteous manner pursuant to company policies and procedures.

Rules for Employees

- Company employees are required to complete a driving history questionnaire on the employment application and pre-employment process.
- Motor Vehicle Operating reports shall be systematically reviewed to ensure good driving records are being maintained. The authorization is automatically rescinded if an employee is convicted of driving under the influence of drugs or alcohol in any vehicle, or if a driver's license is suspended, revoked, or expires.
- Vehicles must be operated by authorized YATES LINE CO. employees only. Drivers **MUST** have a valid driver's license and maintain a good driving record. Company drivers whose license has been suspended or revoked **MUST** report this situation to supervision and the Safety Department immediately.
- It shall be in the discretion of YATES LINE CO. to restrict access to company vehicles for any employee based on driving history and/or violations. Any violation of this policy shall be grounds for discipline, up to and including discharge.
- Drivers of vehicles with a GVWR of 26,001 pounds or more, vehicles which transport 16 or more passengers, or vehicles used in transportation of hazardous materials must have the appropriate Department of Transportation Commercial Driver's License (CDL).
- Driving a company vehicle is a privilege. As with all company-owned property, operators are to take reasonable care of company vehicles and ensure they maintained in safe driving condition.
- Company vehicles are to be used only for valid business purposes.

Daily Inspection

Each driver of a company vehicle is responsible for ensuring the vehicle is safe to operate. An inspection of each vehicle is required before each work trip or at the beginning of each work shift. Vehicle defects should be reported to immediate supervision for correction. **DO NOT** operate a vehicle with critical safety problems. All vehicle maintenance must be done by qualified personnel authorized by YATES LINE CO. Windows must be kept clean to not obstruct the vision of the driver. Vehicles must be of the correct size and designed for the intended use. Vehicles shall not be abused or misused. Company vehicles are not intended for personal use by employees unless authorized by management. All company vehicles are to contain a fire extinguisher, first aid kit, current vehicle registration, current certificate of insurance, and accident forms. All vehicles not passing inspection must be tagged out of service with keys removed (Refer to HSE Policies – *Driving Safety* and *Incident Investigation*). Vehicle inspections include the following:

- Body integrity.
- Brakes, including parking (hand) brake, trailer brake connections, and coupling devices.
- Windows, windshields, and wipers.
- Rear vision mirrors, or other mirrors.
- Steering mechanism, horn.

- Headlights, taillights, turn signals, lighting devices, and reflectors.
- Fluids.
- Tires, inflation, and tread.
- Backup alarm (if equipped).
- Safety cones (if equipped).

Defensive Driving Rules

Defensive driving is defined as “driving to save lives, time, and money in spite of the conditions around you and the actions of others”:

- Drive defensively. Stay focused, concentrate on driving, anticipate hazards, and correct to account for those hazardous conditions or situations.
- Do not operate a vehicle at any time when your ability to do so is impaired, distracted, affected, influenced by alcohol, illegal drugs, prescribed or over-the-counter medication, illness, fatigue, or injury.
- Wear seat belts while operating or riding in all vehicles.
- Drivers must honor posted speed limits. In adverse driving conditions, reduce speed to a safe operating speed that is consistent with the conditions of the road, weather, lighting, and volume of traffic. Tires can hydroplane on wet pavement at speeds as low as 40 MPH.
- Drivers must yield the right of way at all traffic control signals and signs requiring them to do so. Drivers should also be prepared to yield for safety's sake at any time.
- Drivers are required to always maintain a safe following distance. To estimate the following distance, pick a stationary object ahead of you. As the vehicle in front of you passes the object, begin counting 1001, 1002, 1003, etc. until you reach the same object. This counts the number of seconds between you and the vehicle ahead of you. Drivers of passenger vehicles should keep a two-second interval between their vehicle and the vehicle immediately ahead. During slippery road conditions, the following distance should be increased to at least four-seconds.
- Drivers of heavy trucks should keep a minimum of a three-second interval when not carrying cargo; and at least four-seconds when fully loaded. The following distance should also be increased when adverse conditions exist.
- Be aware of blind spots in both your vehicle and vehicles around you. Make frequent checks in your rear-view and side mirrors for other vehicles behind you, pulling into and changing lanes and into your blind spot.
- Avoid driving in other driver's blind spots; attempt to maintain eye contact with the other driver, either directly or through mirrors.
- Turn signals must be used to show intended paths of travel while going into traffic and before every turn or lane change.
- When passing, or changing lanes, view the entire vehicle in your rear-view mirror before pulling back into that lane.
- Watch other vehicles that have their turn signals on. Make sure they are turning in the designated direction before pulling out in front of them.
- When waiting to make left turns, keep your wheels facing straight ahead. If rear-ended, you will not be pushed into the lane of oncoming traffic.
- When stopping behind another vehicle, leave enough space so you can see the rear wheels of the car in front. This allows room to go around the vehicle if necessary and may prevent you from being pushed into the car in front of you if you are rear-ended.
- It is against the law to pass any vehicle within 100 feet of a railroad crossing or intersection.
- Always watch out for motorcycles, bicycles, pedestrians, and children as they can be easily hidden by other vehicles or obstructions. In 40% of motorcycle crashes, other vehicles were turning left while motorcycles were going straight, passing, or overtaking the vehicles.

- Pedestrians and bicycles in the roadway always have the right of way.
- Be alert of other vehicles, pedestrians, and bicyclists when approaching intersections. Never speed through an intersection on a caution light.
- Approach a stale green light with your foot poised over the brake to reduce your reaction time should it be necessary to stop. When the traffic light turns green, look both ways for oncoming traffic before proceeding.
- Use extreme caution when crossing any railroad crossing. STOP, LOOK, and LISTEN before crossing any set of tracks. Don't depend on lights, they may be inoperative.
- Watch the weather and consider the extra time it will take you when traveling in fog, rain, sleet, ice, or snow.
- Be especially careful on bridges and overpasses when the temperature is at freezing or below.
- Use traffic signs, barricades, or flaggers when construction takes place near public roadways.
- Any employee exposed to vehicular traffic must wear high visibility traffic vests.
- Deer are more prevalent during spring and fall, especially during sunrise and sunset. Scan the road and ditches for any movement. If you see one, there are probably more.
- Don't swerve for any animal. Survival chances are better than swerving into oncoming traffic or rolling the vehicle over in a ditch.
- Distracted Driving- these are some of the distractions that occur while driving:
 - Traffic.
 - Other drivers.
 - Pedestrians, children, pets, passengers.
 - Adjusting radio, A/C, heater.
 - Eating, drinking.
 - Applying makeup.
 - Shaving.
 - Cell phones.
 - Navigation devices.

Vehicle Accidents – (Refer to HSE Policy - *Incident Investigation*)

In the event of a vehicular accident:

- **STOP immediately.** If possible, pull onto the shoulder or side of the road safely.
- Take immediate action to prevent further damage at the scene of the accident.
- Place warning signals promptly and properly.
- If anyone is injured, call **911** immediately. Stay calm and give the emergency operator as much information as you can about the accident.
- Don't leave the scene.
- **DO NOT** argue at the scene of the accident. Be courteous. Show your driver's license willingly.
- Secure and record all facts and pertinent information including other driver information and license plate numbers of the vehicles at the scene of the accident.
- Secure the names and addresses of any witnesses to the accident.
- **DO NOT** discuss the accident with anyone except the police officer, YATES LINE CO., supervision, or our company insurance representative.
- **DO NOT** sign any papers or forms except for the police report and YATES LINE CO. accident forms.
- Call immediate supervision and the safety department as soon as possible to report property damage or bodily injury accidents.

Electrical Safety Awareness

Electrical safe work practices are procedures established to protect workers from electrical shock and arc flashes (Refer to HSE Policy – *Electrical Safety Awareness*). Unless deemed a qualified electrical worker by YATES LINE CO., employees and subcontractors are forbidden from performing work on live electrical circuits. All employees and subcontractors not deemed qualified electrical workers must utilize energy isolation procedures such as Lockout/Tagout (LOTO) when working with potentially dangerous sources of electrical energy (Refer to HSE Policies – *Electrical Safety Awareness* and *Lockout/Tagout*).

General Safety Methods

- **ALWAYS** conduct a hazard and risk assessment prior to beginning work (Refer to HSE Policy – *Risk Assessment*).
- Implement all safe work practices necessary for protection from shock and electrocution.
- **ALWAYS** wear the correct Hazard Risk Category (HRC) rated personal protective equipment (Refer to HSE Policies – *Electrical Safety Awareness* and *Personal Protective Equipment*).
- **ALWAYS** inspect ground fault circuit interrupter (GFCI) protection associated with any power tools or equipment, including generators.
- **ALWAYS** assume that equipment is energized.
- **ALWAYS** use Lockout/Tagout (LOTO) methods for energy isolation.
- **ALWAYS VERIFY** that the power is off, and circuits do not retain residual energy.
- Only install and repair equipment in accordance with local codes and legal requirements.
- **NEVER** modify approved or listed equipment without permission of the manufacturer and YATES LINE CO. management.
- **DO NOT stand** on wet surfaces while working with or on energized electrical equipment.
- **NEVER** plug cords that are wet or touch electrical equipment with wet hands.
- **DO NOT** climb onto, walk on, drive over, or tie equipment to electrical conduits.
- Maintain a three (3) foot clearance around electrical panels for quick access. Sufficient space must be maintained around electrical equipment to permit ready and safe access of such equipment.
- Metal ladders **SHALL NOT** be utilized while performing any electrical work (Refer to HSE Policies – *Electrical Safety Awareness* and *Ladder Safety*).
- A minimum of ten (10) feet must be maintained from all energized power lines.
- When using an aerial lift, forklift, or other powered platforms, power lines must be identified prior to work and a minimum distance of ten (10) feet maintained (Refer to HSE Policies - *Electrical Safety Awareness*, *Risk Assessment*, *Powered Industrial Trucks*, *Cranes*, and *Aerial Lifts*).
- Worksites must be maintained in a clean and orderly manner.
- All YATES LINE CO. employees and subcontractors must recognize and respect approach distances for high voltage. **DO NOT CROSS** red barricades unless you have permission from a qualified electrical worker and YATES LINE CO. management.

Ground Fault Circuit Interrupter (GFCIs)

It is YATES LINE CO. policy that whenever any employee is using a power tool or extension cord, they must be used with a Ground Fault Circuit Interrupter (GFCI) (Refer to HSE Policy – *Ground Fault Protection/GFCI*). GFCIs must be installed at the power source. GFCIs, power outlets, equipment, and power cords must be inspected and tested before work commences. All 120-volt, single phase, 15 and 20 ampere receptacle outlets of construction sites, which are not a part of the permanent wiring of the building or structure, and which are in use by employees, **SHALL** have approved Ground Fault Circuit Interrupters for personnel protection. Receptacles on a two-wire, single phase portable or vehicle mounted generator

rated not more than 5kW, where the circuit conductors or the generator are insulated from the generator frame and all other grounded surfaces, need not be protected with GFCI's.

Temporary Power

- **ALWAYS** inspect your electrical cords before each day's use for defects. **This will only take a minute and could save your life.**
- Unplug electrical cord before inspecting. Wipe the cord clean and visually inspect each cord set, attachment cap, plug and receptacle of cord sets, and any equipment connected by cord and plug for deformed or missing pins or insulation damage, and for indications of possible internal damage.
- If any electrical equipment needs to be repaired, tag it as "**DO NOT USE**", identify what is wrong with it, your name, date, remove it from service, and notify your supervisor. Do not put it back in the gang box or work truck for someone else to pick up and use.
- Extension cords **MUST** meet OSHA standards for construction.
- Extension cords **MUST** be Heavy Duty 12 gauge.
- All extension cords and receptacles **MUST** be of a three-pronged type.
- Verify that the extension cords you will be using are rated to accept the maximum current (amps) pulled by the portable power tool or equipment being used. Voltage drops over the length of a cord.
- Do not drive mobile equipment, such as scissor lifts or forklifts, over extension cords.
- **DO NOT** lay electrical and extension cords or cables on floors, in walkways, etc., unless it is impractical to do otherwise. They should be suspended or secured in such a way as not to block or hang in walkways, doorways, or work areas. If possible, hang all extension cords 8 feet above the floor to prevent damage and trip hazards.
- When cords and cables must pass through doorways, windows, and holes or any other areas subject to trip hazards, pinching or abrasion, they **MUST** be protected.
- Cords and cables **MUST** not run through fixture, cabinet, or panel knockouts without bushing and strain relief.
- Extension cords **MUST** not be fastened with staples, hung by nails, or suspended by any uninsulated wire.
- **DO NOT** use extension cords to raise and lower tools or materials like a rope or a tagline.
- All extension cords not essential to operations must be unplugged when not in use.
- All cords should be wrapped and stored properly when not in use.
- Non-metallic cable used to feed receptacles or light fixtures **MUST** be secured at regular intervals (no more than ten (10) feet apart) to prevent twisting or flexing.
- Splices in cable assemblies **MUST** be made with connecting devices such as wire nuts or capped crimp-on connectors. Tape alone is not acceptable. Splices **MUST** be provided with strain relief to prevent the splice from separating. This may be accomplished by taping well back from the connecting devices.
- All plates and covers on electrical equipment **MUST** be closed and always secured unless necessary to open for repairs.
- Direct connections to permanent building wiring **MUST** be made within boxes and **MUST** be provided with strain relief.
- Ground wires **MUST** be kept intact. Loose conduit and ground wires must be reported to YATES LINE CO. supervision immediately.
- Receptacle boxes **MUST** be attached to fixed objects, or supported, and **SHALL NOT** be suspended by energized cables.
- **DO NOT** use knockout boxes as a receptacle on the end of extension cords.
- All receptacles and wall switches **MUST** have plates installed when energized. Missing knockouts and blanks must be replaced with approved covers.
- Panels **MUST** always be covered when not attended to.

- Unplug extension cords before rolling up.

Emergency Action Plan

Emergency Action Plan (EAP) Basic Elements – (Refer to HSE Policy – *Emergency Action Plan*)

Emergency telephone numbers **MUST** be posted at each job site. This includes ambulance, fire, police, and utility company phone numbers as well as any site-specific Emergency Action Plans. All YATES LINE CO. employees and subcontractors will be made aware of the nearest medical facility and the emergency evacuation procedures for the site on which they are working.

All work crews of YATES LINE CO. shall include in this site-specific plan:

1. Reporting procedures – an established plan for employees and subcontractors to report emergencies.
2. Head counting – an established procedure for accounting for all YATES LINE CO. and subcontractor workers at the location.
3. Muster points – predetermined locations for YATES LINE CO. and subcontractor employees to gather.
4. Rescue responsibilities – employees can only perform rescue duties according to their level of training.

In case of an emergency, it is every employee's responsibility of YATES LINE CO. to know the emergency contact number for their immediate supervisor, the safety department, and senior management. Additionally, employees must know:

- The location of exit doors.
- The location of first aid kits.
- Nearest AED (Automatic External Defibrillator) (Refer to HSE Policy – *First Aid*).
- Do not approach a victim until it is safe to do so.
- Fire extinguisher and hose locations.
- Safety showers and eye wash stations.
- Emergency evacuation areas, routes, and wind indicators.
- Storm shelter locations.
- Report any spill immediately.
- Keep all emergency pathways and exits free from obstructions.
- Do not block emergency fire safety equipment or park in front of fire hydrants.

Depending upon the location of work, all emergencies should be reported immediately by contacting direct supervision, safety, and senior management. When there is an emergency, **DO NOT PANIC!** Carefully survey the scene. Look for hazards that could harm you or other responders such as fire, exposed power lines, confined spaces, chemical spills or releases, excavations, etc. If in **DANGER**, leave the area immediately! Call and report the emergency. Render aid to victims if you are trained and it is safe to do so.

When reporting an emergency, give as accurate information as possible and stay on the line until you are dismissed by the individual taking the information. Report the following information to the proper authorities, supervision, or facility personnel:

- The nature of the emergency, such as fire, chemical release, medical.
- The location of the emergency. Be as specific as possible.
- The number and condition of any victims.
- The location from which you are reporting.

- Your name and telephone number.
- The approximate time of the incident.
- Other information as requested by the person taking the report.

YATES LINE CO. does not typically perform duties that would need to be shut down or monitored for critical operations prior to evacuation. If involved in rescue of a fall victim(s), use proper equipment such as aerial manlifts, crane with man basket, ladders, retrieval devices, and body harnesses (Refer to HSE Policies – *Aerial Lifts, Crane, Ladders, Confined Space, Excavation and Trenching*, and *Fall Protection*).

Excavation and Trenching

An excavation is any manmade cut, cavity, trench, or depression in the earth that was formed by the removal of earth (Refer to HSE Policy – *Excavation and Trenching*). All YATES LINE CO. employees and subcontractors must make certain that all underground utilities such as sewer lines, telephone lines, fuel, fiber optic, electrical power lines, and water lines have been identified and properly marked **PRIOR TO EXCAVATING**.

The appropriate One Call System must be contacted prior to digging.

For a location within a city, please include the following information:

1. A street address or block and lot numbers, or both of the proposed for area(s) of excavation.
2. The name and address of the excavator.
3. The excavator's telephone number.
4. The type and extent of the proposed excavation.
5. Whether the discharge of explosives is anticipated.
6. The date and time when the excavation is anticipated.
7. The approximate location of the excavation on the property.
8. If known, the name of the property owner.

For a location outside of a city, please include the following information:

1. The name of the county (parish), township, range, and section.
2. The name and address of the excavator.
3. The excavator's telephone number.
4. The type and extent of the proposed excavation.
5. Whether the discharge of explosives is anticipated.
6. The date and time when the excavation is scheduled to begin.
7. The approximate location of the excavation on the property.
8. If known, the quarter section, 911 address and global positioning system coordinate, name of the property owner with street address or block and lot numbers, or both.

American Public Works Association Utility Location & Coordination Council Uniform Color Code Underground Utility Markings

	Red: Electric Power Lines, Cables, Conduit and Lighting Cables
	Yellow: Gas, Oil, Steam, Petroleum or Gaseous Materials
	Orange: Communication, Alarm or Signal Lines, Cables or Conduit
	Blue: Water, Irrigation and Slurry Lines
	Green: Sewers and Drain Lines
	Pink: Temporary Survey Markings
	White: Proposed Excavation
	Purple: Reclaimed Water

Competent Person Responsibilities

As per YATES LINE CO. policy, a competent person will be assigned to each excavation in which employees or subcontractors must enter to perform work (Refer to HSE Policy – *Excavation and Trenching*). A competent person may not be required if employees or subcontractors **DO NOT** have to enter the excavation. Please check with immediate supervision and the Safety Department if questions arise as to whether a competent person is needed.

Competent persons are those employees or employees of subcontractors who have been so designated and have the capability to identify existing or predictable hazards in the excavation or surrounding areas, or working conditions which are unsanitary, hazardous, or dangerous to employees or other workers and have been given the authority to take prompt corrective measures to eliminate or control such hazards, including shutting down the work (Refer to HSE Policies – *Stop Work Authority* and *Excavation and Trenching*).

In addition, YATES LINE CO. competent persons are responsible for:

- Designing structural ramps or seeking qualified assistance of others in the construction of ramps that will be used as a means of access or egress from excavations.
- Monitoring water removal and equipment operations.
- Inspecting excavations, adjacent areas, and protective systems daily, prior to the start of work, as needed throughout the shift, and after every rainstorm or other hazard increasing occurrence (Refer to HSE Policy – *Excavation and Trenching*).
- Document required daily inspections.
- Removing employees and subcontractors from the hazard area until necessary precautions are taken (Refer to HSE Policies – *Stop Work Authority* and *Excavation and Trenching*).
- Examining materials and equipment for continued use, and if unusable, removing from service.
- Classifying soil by accepted means and if necessary, reclassifying the soil after changed conditions. Unless appropriate tests have been made, YATES LINE CO. competent persons and subcontractors **MUST** assume type C soil is present and protect accordingly.
- Reducing soil slope below the maximum allowable slope when surcharge loads are present.

General Rules

- A cubic yard of soil weighs approximately 2,700 lbs. or about as much as a mid-sized automobile. A trench collapse may contain three (3) to five (5) cubic yards of soil.
- When YATES LINE CO. employees or subcontractors are working in an excavation, materials, spoils, and equipment **MUST** be kept at least two (2) feet from the edge of the excavation (Refer to HSE Policy – *Excavation and Trenching*).
- Employees and subcontractors **SHALL NOT** work in excavations in which there is accumulated water, or in excavations in which water is accumulating, unless adequate precautions have been taken to protect employees and other workers against the hazards posed by water accumulation.
- All excavations, trenches, openings, obstructions, and other hazards created by YATES LINE CO. employees or subcontractors **SHALL** be guarded properly to protect workers and the general public.
- YATES LINE CO. employees and subcontractors are **NEVER** to be positioned under digging or lifting equipment as doing so exposes them to falling loads (Refer to HSE Policies – *Excavation and Trenching, Cranes, Powered Industrial Trucks, and Rigging Equipment for Material Handling*).
- When employees or subcontractors are required or permitted to cross over excavations, walkways, or bridges, standard guardrails will be provided.
- Direct buried cables must be exposed by careful hand excavation by probing within two (2) feet of expected underground utilities with a hand probe and shovel.
- A trench should be opened in lengths in which work can be completed and the trench closed at the end of the day, if possible.
- When trenches must be left open overnight, they **SHALL** be covered with suitable materials and/or barricaded during non-working hours.
- Barricades should be erected a minimum of six (6) feet away from the edge of a trench or excavation.
- Trenches with underground utilities must be backfilled with two (2) feet of spoils, with caution tape or detectable underground utility locator tape as a precautionary measure to help prevent future excavations from striking buried utilities (Refer to HSE Policy – *Excavation and Trenching*).

Access and Egress

Ladders, steps, ramps, or other safe means of access or egress for any excavation deeper than four (4) feet is required. Regardless of whatever safe means of egress is used, it must **NOT** be located at intervals with more than 25 feet of lateral travel distance from workers. An earth ramp may be considered a safe means of egress only if workers are able to walk the ramp in an upright manner when entering or exiting the excavation or trench. Ladders **MUST** extend at least three (3) feet above the top of the excavation and be anchored securing on the top and bottom (Refer to HSE Policies – *Excavation and Trenching and Ladders*).

Hazardous Atmospheres

Prior to entering an excavation or trench that is four (4) feet or greater, the air quality **MUST** be tested with a calibrated air monitor to determine if an oxygen deficient, toxic, or flammable atmosphere exists, or could reasonably be expected to exist, or when controls are used to protect employees from a hazardous atmosphere (Refer to HSE Policies - *Respiratory Protection, Excavation and Trenching, and Risk Assessments*).

Shoring/Shielding Systems

When shoring or shield systems are used, the system installation process **SHALL** progress as the excavation progresses and should follow as closely as possible to the equipment performing the excavation (Refer to HSE Policy – *Excavation and*

Trenching). YATES LINE CO. employees and subcontractors **MUST** be protected from the hazards of cave-in when entering or exiting the areas protected by the shields. YATES LINE CO. employees and subcontractors are not allowed in the shield when it is being installed, removed, or moved vertically.

Excavations and trenches that are five (5) feet deep or greater require a protective system unless the excavation is made of stable rock (Refer to HSE Policy – *Excavation and Trenching*). If less than five (5) feet deep, a competent person may determine whether a protective system is required. Excavations and trenches 20 feet deep or deeper require that the protective system be designed by a qualified, professional, and registered engineer.

Fall Protection

Falls and falling objects can result from unstable working surfaces, ladders that are not safely positioned, and the failure to use or misuse of fall protection equipment. Employees are also subjected to falls or the dangers of falling objects when working near leading edges, unprotected sides, floor holes, and wall openings. Fall protection also applies to slips, trips, and falls on the same elevation.

When elevated work is to be performed, a complete analysis of the scope of work, environmental conditions, and fall hazards **SHALL** be conducted by supervision (Refer to HSE Policies – *Fall Protection* and *Risk Assessments*). All affected personnel **MUST** be briefed and instructed as to the hazards, requirements, protective system selection, and work procedures.

Any time a YATES LINE CO. employee or subcontractor performs elevated work at a height of four (4) feet or more when performing general industry work or six (6) feet or more when performing construction activities or needs to get closer than six (6) feet from an unprotected edge, the worker **MUST** be properly secured from falling (Refer to HSE Policy – *Fall Protection*).

Full body harnesses are also required when working from aerial lifts, personnel baskets, bucket trucks, suspended scaffolds, and other movable platforms per the manufacturer's requirements (Refer to HSE Policies – *Fall Protection* and *Aerial Lifts*).

FALL PREVENTION refers to systems that “prevent” workers from falling such as guardrail systems, hole coverings, scaffolds, or a personal fall restraint system (PFRS).

FALL PROTECTION refers to systems that help “protect” workers from injury when they do fall, such as a personal fall arrest system (PFAS) or a safety net system.

Fall Hazards

Fall hazards may be classified into three (3) general categories:

- Slips, trips, and falls on the same level.
- Falls on stairs and walk ramps.
- Falls from elevation.

Slips and trips are generally caused by a lack of good housekeeping and inadequate maintenance of walking and working surfaces. YATES LINE CO. employees and subcontractors should keep their area clean and orderly. Fall hazards may include icy walkways, wet floors, damaged floor coverings and stair treads, and missing or broken handrails and guardrails.

Fall hazards from elevations include, but are not limited to, unprotected sides and edges of roofs, excavations, skylights, floor holes, wall openings, and all other walking or working surfaces where personnel can possibly fall four (4) feet or more to a lower level.

YATES LINE CO. employees and subcontractors should alert their supervisors to potential fall hazards not already identified and controlled.

Falling Object Protection

YATES LINE CO. employees and subcontractors should always be protected from falling from an elevated surface and always particularly aware of those working above and below. To prevent head injuries, YATES LINE CO. employees and subcontractors are required to wear appropriate hard hats (Refer to HSE Policies – *Fall Protection* and *Personal Protective Equipment*). The following other methods may be used to protect workers from falling objects:

- **Barricades and Fences:** These methods may be used to keep personnel away from areas where they may be struck by falling objects.
- **Canopies:** Canopies may be required in areas of high personnel traffic when overhead work is being performed. These structures **MUST** be constructed substantially to withstand the force impact of dropped tools, materials, and debris.
- **Toeboards:** Toeboards **MUST** be erected on all scaffolds and work platforms whenever there are personnel working below them (Refer to HSE Policies – *Aerial Lifts* and *Scaffolds*). Toeboards **MUST** be at least 3.5 inches tall.
- **Panels and Screens:** YATES LINE CO. employees and subcontractors needing to stack materials higher than the top edge of a toeboard **MUST** install panels or screens to keep material from dropping over the edge.
- **Materials and Equipment:** When performing work near a leading edge, keep materials and equipment a minimum of six (6) feet from the leading edge unless there are guardrails installed. All materials stacked or piled near the leading edge **MUST** be stable and self-supporting.

Guardrail Systems

- Guardrail systems consist of a toprail, midrail, toeboards, and support posts.
- Guardrail systems may be constructed of 2 x 4 lumber, steel, wire rope, or other equivalent materials that meet the performance/strength requirements for adequate fall protection (Refer to HSE Policy – *Fall Protection*).
- The anchoring of support posts and framing of members for railings of all types **MUST** be of such construction that the completed structure is capable of withstanding 200 pounds of force in any outward or downward direction.
- Guardrail system components **SHALL** have a surface that prevents injuries such as punctures and lacerations and prevents snagging of clothing.
- The height of the toprail **SHALL** be between 39 inches and 45 inches above the walking/working surface and be able to support at least 200# or more.
- Midrails **SHALL** be installed at a height midway between the top edge of the guardrail and the walking/working surface and be able to support at least 150 pounds or more.
- Toeboards **SHALL** be a minimum of 3.5 inches in vertical height, with no more than 1/4-inch clearance to the floor, to help prevent tools and materials from falling to a lower level and be able to support at least 100 pounds or more.
- When guardrails systems are used at hoisting areas, a chain, gate, or removable guardrail section **SHALL** be placed across the access opening when hoisting operations are not taking place.
- When guardrails systems are used at holes or skylights, they **SHALL** be erected on all unprotected sides or edges of the hole.

- When guardrail systems are used around holes used for ladder access, they **SHALL** be provided with a gate, or be offset so that a person cannot walk directly into the hole.
- When any part of a guardrail system is removed to facilitate material handling, all personnel working near the opening **MUST** use a personal fall arrest system.

Holes/Wall Openings/Covers

During building construction and maintenance, there may be many openings in the floors, roofs, and walls. Every opening **MUST** be guarded by one of these means (Refer to HSE Policy – *Fall Protection*):

- A cover fastened over the hole/opening and labeled.
- A guardrail system that protects all exposed sides.
- An employee constantly attending the hole/opening.

Personal Fall Arrest System (PFAS)

A personal fall arrest system (PFAS) is effective when trained workers implement the system properly. YATES LINE CO. employees and subcontractors are forbidden to wear PFAS without the proper training and authorization (Refer to HSE Policy – *Fall Protection*). Knowing how all the components work together is key to **STOPPING** a fall or to minimizing the arresting force.

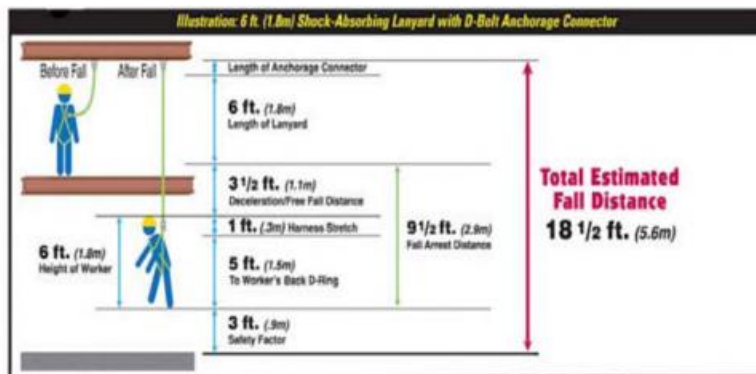
- **Anchorage Points:** Secure points of attachments for lifelines, lanyards, or deceleration devices (Refer to HSE Policy – *Fall Protection*).
- **Full Body Harness:** A full body harness distributes the force of a fall over the thighs, pelvis, waist, chest, and shoulders.
- **Deceleration Device:** These devices help protect workers from the impact of a fall and include shock absorbing lanyards, self-retracting lifelines (SRLs), and rope grabs.

A person without protection will free fall four (4) feet in ½ second and 16 feet in one(1)second!

YATES LINE CO. policy is that all employees and subcontractors wear and use fall protection when working at elevations of 4 feet or above unless otherwise protected.

- All systems will be installed so that an employee cannot free fall more than six (6) feet, nor contact any lower level.
- A qualified person **SHALL** determine all anchor points, both temporary and permanent. Permanent anchor points **SHALL** be properly marked.
- Anchorage points for personal fall arrest systems **MUST** be capable of supporting 5,000 pounds per employee attached and be independent of the surface that the employee is working on. If using retractable lifelines, that amount decreases to 1,800 pounds per employee.
- Personal fall arrest systems **SHALL** have sufficient strength to withstand twice the potential impact energy of the falling employee.
- Personal fall arrest systems **SHALL** limit the maximum arresting forces to 1,800 pounds with a full body harness.
- Personal fall arrest systems **SHALL NOT** be attached to guardrail systems.
- Swing hazards from a fall need to be considered when selecting anchor points.
- Follow manufacturers' instructions for using and wearing personal fall arrest systems.
- Inspect all fall protection equipment such as anchorage points, harnesses, and lifelines before use. Maintain them carefully. The storage area should be clean, dry, and free of fumes or corrosives.

- A shock absorbing lanyard reduces the impact on a worker during fall arrest by extending up to 3.5 feet to absorb the arrest force. Because of this, it is **CRITICAL** that the lanyard or lifeline stops the worker from striking the next lower level.
- ALWAYS calculate the total distance of a possible fall before performing elevated work to make certain the right equipment is in use.



- Self-retracting lifelines (SRLs) are devices that are typically connected to a crossarm strap or beam clamp that is attached to an I-beam, large diameter piping, or other structural anchorage points.
- Self-retracting lifelines (SRLs) are designed to arrest a fall within 2 feet.
- Self-retracting lifelines (SRLs) **MUST** be used by the wearer at less than a 15-degree angle from the device to minimize swing distance in case of a fall.
- Horizontal and vertical lifelines **SHALL** be designed, installed, and used under the supervision of a qualified person as part of a complete personal fall arrest system.
- A vertical lifeline consists of a flexible line connected to an overhead anchorage point. It **MUST** be connected directly to a worker's full body harness, or rope grab device, and be capable of supporting 5000 pounds.
- Unlike a vertical lifeline, the horizontal lifeline stretches between two anchor points. More than one person may be attached to a horizontal lifeline at a time.
- The horizontal lifeline **MUST** be designed for, and capable of supporting 5,000 pounds per employee attached.
- Each employee **SHALL** be attached to a separate lifeline when vertical lifelines are used.
- Lifelines **SHALL** be protected against cutting and abrasions.
- Taglines should be used between use on installed retractable lifelines to protect the cable or webbing and SRL internal components from damage.
- All connectors such as carabiners, locking snap-hooks, and D-rings **MUST** have a tensile strength of 5,000 pounds per person.
- Two locking snap-hooks cannot be attached to a harness D-ring at the same time, i.e., D-ring extender attached at the same time to the harness D-ring as a lanyard. Injuries have resulted from snap-hooks failing by interfering with each other during a fall.
- Any personal fall arrest system or component that has been used to arrest a fall (impact loading), **SHALL** be immediately removed from service until it is inspected and determined by a competent person to be undamaged.
- **DO NOT** use rigging equipment for fall protection purposes.

There are 3 reasons why people fall and get injured when working while elevated:

- Lack of training.
- Employees are not inspecting their equipment.

- Improper use of equipment.

Don't just tie-off to be compliant, tie-off because it is the right thing to do.

Fire Protection/Extinguishers

Fire prevention and protection are safe work practices and procedures that help prevent fires from occurring, and to protect personnel and property from injury and damage if a fire does occur. Fire prevention is everyone's responsibility. Employees **MUST** do their part by observing and complying with fire prevention regulations and procedures. YATES LINE CO. employees and subcontractors **MUST** report any potential fire hazard or condition that could cause a fire to their supervisor immediately (Refer to HSE Policy – *Fire Protection/Extinguishers*).

Fire Prevention and Protection General Instructions (Refer to HSE Policy – *Fire Protection/Extinguishers*)

- Report all fire hazards to your supervisor immediately.
- The telephone number of the fire department and ambulance **MUST** be posted at the jobsite. Know the location of these posted numbers.
- Know location of fire exits and fire alarms.
- Keep fire exits and passageways clear and ready for easy access.
- Ensure that fire extinguishers are not blocked by equipment, materials, or other objects that could interfere for immediate use in an emergency.
- **DO NOT** park in front of fire hydrants.
- Smoke in approved areas only. Obey "NO Tobacco Products on Site", "Smoking in Designated Areas Only", "NO Smoking" and "NO Open Flame" signs!
- Remove trash and debris from your work area at least once each day.
- Clean up chemical and oil spills and leaks immediately (Refer to HSE Policy - *Spill Prevention and Response*).
- Dispose of oily, greasy, or paint-soaked rags and towels in approved metal containers with self-closing lids.
- Remove clothing that has absorbed flammable liquids immediately.
- Keep solvents and other flammable/combustible materials in approved, properly labeled containers, and store them in a proper location.
- **DO NOT** store flammable/combustible materials under stairways or in passageways.
- Keep ignition sources such as sparks, flames, and excessive heat away from solvents and other flammable/combustible materials.
- Shut off engines of vehicles and other equipment before adding fuel.
- Ground containers during liquid transfer so you don't create static electricity.
- When pouring or pumping gasoline or other flammable liquids from one container to another, metallic contact **SHALL** be maintained between the pouring and receiving containers if possible.
- When communication equipment is needed in potentially explosive work areas, only equipment that is verified to be "Intrinsically Safe" **SHALL** be used. This includes areas with high concentrations of combustible gas or dust. All other electronic equipment **SHALL NOT** be used in areas where a potential explosive hazard exists. (e.g., two-way radios, cell phones, pagers, lighting, etc.).
- Only non-sparking tools **SHALL** be used in areas where flammable gases or combustible dusts are present.

In Case of Fire - DO NOT PANIC!

- Warn others in the area about the fire.
- Attempt to extinguish smaller fires with the proper extinguisher if you are trained to do so.
- If the fire is too large for you to control, report it and sound the fire alarm immediately.
- Evacuate all personnel.
- Keep a safe distance from the fire. Post lookouts to meet firefighting personnel and direct them to the fire.
- For electrical fires, attempt to de-energize the power, but only if it is safe to do so before attempting to put out the blaze.

Fire Extinguishers

The National Fire Protection Association (NFPA) categorizes fires into four (4) classes:

- Class A fires involve ordinary combustible materials such as paper, wood, cloth, and many plastics.
- Class B fires involve flammable liquids such as oil, gasoline, paints, and solvents.
- Class C fires involve electrical equipment and wiring.
- Class D fires involve combustible metals such as magnesium and sodium.

Portable fire extinguishers are rated and labeled to indicate the classes and sizes of fires they can extinguish. **YATES LINE CO. employees should never attempt to extinguish a fire with a fire extinguisher unless they are trained to do so.**

Using the wrong type of fire extinguisher on a fire can intensify the fire or lead directly to personal injury and possible death (Refer to HSE Policy – *Fire Protection/Extinguishers*).

- Fire extinguishers SHALL be readily available and located so that personnel **DO NOT** have to travel more than 75 feet to reach one.
- All YATES LINE CO. fire extinguishers **SHALL** be conspicuously located, readily accessible, and immediately available in the event of a fire for all cutting, welding, and grinding operations (Refer to HSE Policy - *Welding, Cutting, Hot Work*).
- To prevent fire extinguishers from being moved or damaged, they should be mounted on brackets or in wall cabinets with the carrying handle placed 3½ to 5 feet above the floor. Larger fire extinguishers need to be mounted at lower heights with the carrying handle about 3 feet from the floor.
- **DO NOT** remove an extinguisher from a designated location except for immediate use.
- Only personnel who have received fire extinguisher training may use portable fire extinguishers. **If you have been trained in the use of fire extinguishers, and you believe that you can extinguish a small fire, observe these general precautions:**
 - **NEVER** attempt to put out a fire that is spreading in a way that may block the path of escape.
 - **NEVER** use a pressurized water extinguisher on electrical equipment. Doing so may result in electrical shock.
 - **NEVER** use a pressurized water extinguisher on burning liquids. It may cause splattering of hot liquids and spread the fire.
 - **NEVER** discharge a carbon dioxide fire extinguisher in a confined space or any small area with poor ventilation.
 - ABC multi-purpose rated 2.5-pound, 5 pounds, and 10 pounds fire extinguishers are the most common type of fire extinguisher and will handle most fires.

- Fire extinguishers **MUST** be visually inspected monthly and receive yearly maintenance checks with dated tags on each extinguisher.
- Fire extinguishers that have been discharged **MUST** be turned into immediate supervision or safety personnel to be inspected and recharged.

First Aid and Medical Treatment

OSHA requires that first aid kits **MUST** be present in most work locations of YATES LINE CO. employees and subcontractors. To comply with this requirement, a minimum of one company provided, frequently inspected, fully stocked, first aid kit **MUST** be present at each work location (Refer to HSE Policy – *First Aid*).

First aid kits (standard 25-person construction type) will be maintained at all locations including field offices and trailers. Smaller first aid kits will be maintained in company vehicles. Personal medications (prescription or over the counter) are prohibited in company supplies first aid kits.

Employee Responsibilities

- Know where the nearest first aid kit or station is located.
- Know the people on the jobsite who are First Aid, CPR, and emergency response trained.
- Be aware of the nearest medical facility and the emergency procedures for the work location.
- Report all injuries immediately, no matter how minor to the supervisor and safety personnel to receive proper medical care (Refer to HSE Policies - *First Aid and Injury and Illness Reporting*).
- **DO NOT** go to your own doctor.
- **DO NOT** provide any first aid treatment to others beyond that for which you have been trained and certified to perform.
- **DO NOT** move an injured or seriously ill person unless it is necessary to prevent further injury from instances such as a fire or evacuation. Wait for Emergency Medical Technicians to arrive and prep the injured person for transportation.
- Treat all blood and body fluids as hazardous and follow “universal precautions.” At minimum, this means **ALWAYS** wearing disposable gloves when assisting an injured person and preventing direct skin contact with any body fluids (Refer to HSE Policy - *Bloodborne Pathogens*).
- Notify the supervisor or safety personnel when first aid supplies have been used so that they will be replaced.

Supervisor Responsibilities

- Ensure that all employees are aware of the nearest medical facility and the emergency procedures for their work location.
- Verify that first aid kits are present at the work locations.
- Regularly check the contents and frequently inspect the first aid kits to assure that all necessary supplies are available and within their expiration dates.
- Arrange for replacement and refill of kits as necessary to maintain compliance with YATES LINE CO.'s First Aid policy.

First Aid Basic Guidelines

- Only employees who are trained in First Aid and/or CPR may perform any first aid and/or CPR necessary until the appropriate Emergency Rescue Teams arrive.

- Carefully survey the scene and call for help. If necessary, send someone to call the host facility's Emergency Response Team or Emergency Medical Services (EMS) immediately.
- Look for hazards that could harm you and other responders such as fire, exposed power lines, confined spaces, or caved-in excavations. **DO NOT** approach the victim unless it is safe to do so.
- Perform injury assessment and provide aid if conditions dictate that it is necessary to move the victim(s) in order to avoid further injury or death. Moving the victim can cause additional harm.
- If you must move them, ensure that critical body parts, such as the head, neck, and back are immobilized or adequately supported as best as possible.
- Protect yourself with medical exam gloves, safety glasses, or some type of barrier **before** touching the victim. If it's wet and not yours, don't touch it (Refer to HSE Policies - *First Aid* and *Bloodborne Pathogens*).
- Monitor the victim(s) behavior and condition so that when emergency rescue personnel arrive, you can inform them of any changes or problems.
- Once you have begun CPR or first aid, do not stop until another trained person takes over or you are exhausted and unable to continue or in imminent danger.
- If they are conscious, keep the victim calm until emergency personnel arrive on the scene.
- Ensure streets, entryways, and walkways are clear for emergency personnel to arrive at the scene.
- Keep someone on the scene to control curious bystanders and unnecessary traffic in the area.
- If you are not needed at a scene, stay away from the area so emergency personnel can perform their duties.

Contact your immediate supervisor and safety personnel as soon as possible.

Fit for Duty

All YATES LINE CO. employees and subcontractors are expected to be mentally and physically able to perform the essential tasks of the assigned job (Refer to HSE Policy – *Fit for Duty*). Being “fit for duty” as related to a specific job function ensures that employees and subcontractors can perform their jobs without hazard to themselves or others. YATES LINE CO. employees and subcontractors are expected to perform their jobs in a safe and appropriate manner, at all times, free from the adverse effects of physical, mental, emotional, and personal problems.

To ensure that YATES LINE CO. employees are physically and mentally capable of performing their job functions, pre-employment physicals may be required during the hiring process, when changing job functions, or changing to a different environment, and in post incident/return to work situations. The fit for duty criteria may include testing for chemical (ex. alcohol and drug) levels, referral for psychiatric evaluation, or any other evaluation or follow-up deemed necessary.

Procedures for drug and alcohol testing for pre-employment, post-accident or incident, reasonable suspicion, or random testing as prescribed by the Department of Transportation (DOT), the company, and/or the host facility will be implemented. As a condition of employment, YATES LINE CO. employees and subcontractors may not be impaired by drugs or alcohol while on the job. Employees and subcontractors must inform YATES LINE CO. management if they are unable to perform their job or taking any medication that might affect their ability to do the job.

YATES LINE CO. supervisors and subcontractor supervision are responsible for monitoring the attendance, performance, and behavior of employees and subcontracted workers, take appropriate actions to prevent loss, and follow the procedures of YATES LINE CO.'s policy (Refer to HSE Policy – *Fit for Duty*). Employees and subcontractors of YATES LINE CO. must inform supervision if they are mentally or physically unable to perform assigned job tasks in a safe manner. When any supervisor of YATES LINE CO. or of a subcontractor observes a worker who is not performing the job safely, appropriately, and effectively, an odor of alcohol is present, or whose behavior indicates impairment, is to remove the employee or

subcontractor from the jobsite immediately and report such removal to YATES LINE CO. management and the safety department.

In the event a YATES LINE CO. supervisor believes a worker is not fit to perform his or her duties, that worker may be sent home, relieved of certain duties, assigned to different duties, assigned to light duty, or required to produce an explanation.

YATES LINE CO. employees and subcontractors must report fatigue and lack of mental acuity to their supervisors and notify their supervisor if a coworker is observed acting in a manner that indicates the coworkers may be unfit for duty (Refer to HSE Policy – *Fit for Duty*). If workers face restrictions that result in a permanent inability to perform essential functions of the job, the Americans with Disabilities Act (ADA) and applicable laws will be applied to determine suitability for employment.

Flammable Liquids

Flammable (Explosive Limits) – When vapors of flammable or combustible liquid are mixed with air in the proper proportions in the presence of a source of ignition, rapid combustion or an explosion can occur (Refer to HSE Policy – *Flammable Liquids*). The proper proportion is called the **flammable range** and is also often referred to as the **explosive range**. The flammable range includes all concentrations of flammable vapor or gas in air, in which a flash will occur, or a flame will travel if the mixture is ignited. There is a minimum concentration of vapor or gas in air below which propagation of flame does not occur on contact with a source of ignition. There is also a maximum proportion of vapor in air above which the propagation of flame does not occur. These boundary line mixtures of vapor with air are known as the **lower and upper flammable limits (LEL or UFL)** respectively, and they are usually expressed in terms of percentage of volume of vapor in air.

This section applies only to the storage of flammable or combustible liquids in drums or other containers (including flammable aerosols) not exceeding 60-gallon individual capacity. Basically, flammable liquids have a flash point below 100 degrees Fahrenheit. Combustibles have a flash point greater than 100 degrees Fahrenheit.

YATES LINE CO. employees are expected to follow the following guidelines:

- Flammable and combustible liquids used in, and around, mechanical construction can be very hazardous. Watch for sources of ignition such as welding sparks, flames from acetylene cutting torches, brazing operations, cigarettes, etc.
- Whenever possible, substitute flammable or combustible liquids with non-flammable/combustible liquids that do the same job. Eliminating the hazard is the best option.
- When substitution is not possible, keep quantities of flammable/combustible liquids as small as possible and keep only the amount to be used right away.
- Flammable cabinets should be positioned at least 25 feet from any doorway.
- Flammable liquids should be kept in flammable cabinets. Doors to cabinets must be closed.
- Not more than 60 gallons of Class I and/or Class II liquids, or not more than 120 gallons of Class III liquids may be stored in an individual cabinet.
- Flammable or combustible liquids, including stock for sale, shall not be stored so as to limit use of exits, stairways, or areas normally used for safe egress of people.
- Common flammable and combustible liquids used in the normal course of business include gasoline, other petroleum products, benzene, and other cleaning solvents. Keep these liquids in containers designed specifically for their use. Metal safety cans with self-closing lids that are UL approved must be used.

- Every container should be properly and clearly labeled so workers won't unintentionally use the wrong liquid (Refer to HSE Policy – *Hazard Communication*).
- Never mix different types of fuels. Always store fuel liquids in a properly marked and colored container. **RED** designates gasoline. **YELLOW** designates diesel fuel and **BLUE** designates kerosene.
- Be constantly aware of the location of these liquids in relation to ignition sources.
- Keep all flammable and/or combustible liquids away from ignition sources even if stored in approved containers.
- Static electricity can be a source of ignition. When transferring one of these liquids from a drum to a smaller container, protect yourself by grounding the drum. Then bond the drum and container by attaching a conductive wire from the drum to the container.
- Storage inside storage rooms must comply with NFPA and local fire codes.
- Every inside storage room shall be provided with either a gravity or a mechanical exhaust ventilation system designed to provide for a complete change of air within the room at least six times per hour. Ventilation is vital to the prevention of flammable liquid fires and explosions. It is important to ensure that air flow through the system is constant and prevents the accumulation of any flammable vapors.
- At least one portable 10 pound fire extinguisher shall be located outside of, but no more than 10 feet from, the door opening into any room used for flammable storage.

Forklifts/Powered Industrial Trucks/Powered Mobile Equipment

Only trained, authorized, and certified YATES LINE CO. employees and subcontractors may operate powered industrial trucks (Refer to HSE Policy – *Forklifts/Powered Industrial Trucks and Mobile Equipment*). In the course of certain work assignments, YATES LINE CO. employees and subcontractors must operate powered industrial trucks, including forklifts, rough terrain forklifts, skid steers, loaders, tractors, mini-hoes, utility vehicles, etc. YATES LINE CO. employees and subcontractors discovered not following applicable operations policies and safety rules may have or will have their operating privileges revoked. For more specific requirements, refer to HSE policies - *Forklifts/Powered Industrial Trucks and Mobile Equipment*. In general, the following safety rules apply:

- Only trained and authorized personnel may operate, and access powered mobile equipment. At no time is a YATES LINE CO. employee or subcontractor to operate any mobile equipment without the proper training.
- Operators must have a valid driver's license.
- Operators are required to review the operator's manual.
- Seat belts are required to be worn by everyone inside powered mobile equipment.
- Designated speed limits, or less depending on activities or congestion, must be always followed.
- All traffic signs must be obeyed. **STOP** and look twice before pulling out onto roadways or across railroad tracks.
- Yield to pedestrians.
- Always look in the direction of travel and around you. Be aware of pedestrians that may inadvertently walk or cross barricades into your work area.
- Do not operate the controls from outside the equipment such as a skid loader, ROPS cab, forklift, etc.
- Keep all body parts inside the cab.
- Do not use a cell phone while driving or operating equipment. Pull over and stop safely to take the call.
- Use powered mobile equipment for their intended use. For example, aerial lifts are designed to lift people and not designed to lift materials or parts into place or to be rigged from.
- All powered mobile equipment shall be pre-inspected daily and recorded on the applicable Pre-Use Checklist.
- Pre-Use Checklists are to remain with the equipment for the duration of that day. At the end of the day, checklists will be turned into the appropriate person.

- Any equipment that does not pass inspection must be tagged “out of service” and reported to supervision immediately.
- Quarterly inspections must be performed by a competent person. Any deficiencies must be noted and repaired as soon as possible.
- YATES LINE CO. employees and subcontractors should perform a quick walk around before operating a piece of equipment that has already been inspected for the day by another employee.
- Safety glasses must be worn when operating or driving powered mobile equipment with the cab open or window down.
- Use every handhold and step available when getting in and out of equipment.
- **NEVER** jump down from equipment.
- Backup alarms and fire extinguishers are required.
- Loads must be secured.
- Tip the forks down to adjust the forks on the pivot shaft when adjusting forks on a forklift or rough terrain forklift. This prevents pinched fingers and muscle strains.
- Spotters must be used if the operator’s vision is blocked or obscured.
- **No person shall be allowed to stand or pass under the elevated portion (boom) of any powered mobile equipment, suspended loads, or equipment (for example: forklifts, Rough Terrain Forklifts (RTFL), cranes, etc.).**
- When working closely with mobile equipment, keep your body away from pinch points, struck-by, or caught in-between hazards.
- Wear high visibility clothing/vests when required so operators and truck drivers can see you.
- When loading a truck be aware of your surroundings.
- Always lower the man basket, bucket, or forks to the ground and apply the brake when leaving a machine.
- Use wheel chocks when parked on an incline to prevent the machine from rolling forward or backwards.
- When walking as a pedestrian, **ALWAYS** make eye contact with the operator before going into their area.
- Always use designated pedestrian walkways and be alert for mobile truck traffic, particularly around corners, in corridors, and in warehouses.
- Always use pedestrian doors instead of roll-up or warehouse doors.

ALWAYS BE AWARE OF OVERHEAD POWER LINES

- Check for wires before traveling or raising and lowering equipment.
- Depending on the voltage, maintain a minimum distance of at least 10 feet or more from all power lines.
- Have the line de-energized and grounded or insulated. Most power companies will insulate powerlines for free.
- To maintain a safe work distance, erect and maintain an elevated warning line, barricade, or line of signs equipped with flags or similar high-visibility markings at the minimum clearance distance.
- Paint a clearly visible line on the ground and/or use stanchions for visual aids.
- If the operator cannot see the elevated warning line or visual aids, a dedicated spotter(s) must be used to signal the operator that the equipment is passing the marked line.
- The spotter (two if required) and operators must be able to communicate at all times.
- Spotters must wear high visibility clothing.
- All taglines must be made of non-conductive materials.

Free Rigging off Forklifts

Free rigging is the direct attachment to or placement of attaching any of a variety of rigging equipment (such as chains, slings, shackles, rings, etc.) directly to the forks of a powered industrial truck/forklift for the purpose of suspending a load from and below the forks (Refer to HSE Policies - *Rigging for Material Handling and Forklifts/Powered Industrial Trucks*). **THIS PRACTICE IS FORBIDDEN BY YATES LINE CO.** Workers must always use an approved forklift attachment with a load chart that is designed for this purpose. Free rigging poses multiple safety hazards:

- Free rigging could affect the capacity and safe operation of the piece of equipment.
- The use of a sling on the forks or tines of the forklift or RTFL is not approved by the manufacturer.
- Loads that are off centered can shift and become unstable.
- Shifting/swinging loads can make the forklift or RTFL become unstable and possibly cause tip overs.
- Slings can slide off the forks if the operator inadvertently tilts the carriage forward.
- Friction from the sling rubbing against the edge of the fork can damage the integrity of the sling.
- Forks can be too wide for the sling “eye” and will stretch and cause irreparable damage.

General Waste Management

The goal of YATES LINE CO. is to reduce or generate waste to reduce impacts on the environment (Refer to HSE Policy – *General Waste Management*). Recycling products such as glass, aluminum cans, plastic, paper, wood, printer cartridges, etc. has greatly decreased the amount of trash in landfills. Hazardous material containing products such as spent fluorescent lamps, batteries, mercury containing ballasts, thermostats, and some electronics are required by law to be recycled in most states. Typically, the same wastes are generated on each of the sites of YATES LINE CO., such as general trash.

All trash **MUST** be disposed of properly (Refer to HSE Policy – *General Waste Management*). Place scrap materials in designated dumpsters marked for recycling. **ALWAYS** cut long pieces up. **DO NOT** place scrap materials in a dumpster that is longer than the length of the designated dumpster.

Many of the hiring clients of YATES LINE CO. implement different recycling methods. Follow the environmental and waste disposal procedures at the host facility.

Hazardous Waste

Hazardous wastes are products that would not be disposed of in general trash dumpsters (Refer to HSE Policies – *General Waste Management and Hazardous Waste*). Designated locations must be located for proper disposal. When dealing with chemicals, always refer to the safety data sheet (SDSs) for disposal information (Refer to HSE Policy – *Hazard Communication*). Examples of hazardous waste include but are not limited to:

- Solvents
- Epoxy
- “Empty” aerosol cans
- Liquid paint waste
- Refrigerants
- Degreasers that contain chlorinated solvents or waste that includes arsenic, mercury, or methanol.

- Ignitable waste with a pH of <2
- Reactive waste (reacts violently with water)
- Nuclear radiation devices for level gauges. Special disposal procedures apply.
- Used oil, which includes hydraulic fluids, lubricants, etc., and is collected for recycling. These should not be mixed with any other wastes such as antifreeze or any other process liquids. Used oil dry/absorbent is collected in designated locations and must not contain free liquids. To dispose of oil dry material, place the material in a sealed bucket and remove to a designated location on the jobsite.
- Universal waste includes all halogen and fluorescent light bulbs, lithium batteries, NiCad batteries, LED batteries, and electronic equipment such as CPUs, monitors, printers, etc. All universal waste can be taken to a designated location for disposal.
- No wastes of any kind are to be removed from a customer's facility unless by an approved and licensed vendor.
- All universal waste **MUST** be disposed of by a licensed disposal firm.

Spills

All spills **MUST** be reported and properly cleaned up. Only trained and authorized employees and subcontractors of YATES LINE CO. should perform clean-up activities. All personnel after reporting the spill should notify their immediate supervisor and cordon off the area (Refer to HSE Policies – *Incident Investigation, Emergency Action Plan, Hazard Communications, and Spill Prevention and Response*). Additional client notification requirements may apply.

Hand and/or Power Tools

YATES LINE CO. employees and subcontractors frequently use hand and/or power tools to perform tasks. The misuse of hand and/or power tools can result in serious injury. To avoid injury to persons and potential damage to property, the following safe work practices **MUST** be utilized (Refer to HSE Policy – *Hand and/or Power Tools*).

General Safety

- Stay alert when using tools!
- Don't take shortcuts! You don't save time by taking a shortcut if you or someone else is sidelined with an injury.
- Use the proper tool for the job to be performed. Misuse can cause possible injury to the user and cause damage to the tool itself.
- **ALWAYS** follow the manufacturer's instructions and only use the tool within design limits.
- Inspect and keep all tools in safe working condition. **NEVER** use defective tools or equipment.
- Remove any damaged tools immediately from use and report them to your supervisor or safety personnel.
- ALWAYS wear the appropriate PPE when using any hand or power tool. For example, cut resistant gloves when using a cutting tool or face shield when grinding (Refer to HSE Policy – *Personal Protective Equipment*).
- Avoid wearing neck chains, rings, watches, and other jewelry that might become snagged in tools, machines, and other moving equipment.
- Tie back long hair and secure sweatshirt strings that could get caught in a point of operations.
- Follow good ergonomic work practices. Stretching, taking rest breaks, and alternating work tasks can prevent repetitive motion injuries such as carpal tunnel, etc.
- Where possible, keep the work at waist height.
- Make sure your grip and footing are secure when using tools.
- Position yourself so that a tool that falls or slips won't cause an injury to you or your coworker. Keep yourself out of the "line of fire".

- Employees using grinders, saw blades, chisels, or other tools should direct the work hazard away from aisle areas and away from other employees working in close proximity.
- Put up signs and barricades to keep others away from your work area when necessary. This protects both you and them.
- Keep your work area organized. **DO NOT** leave tools lying around. This will prevent tripping hazard and damage to the tool.
- Good housekeeping practices are crucial to reduce slips, trips, and falls. Keep cords and tools out of walkways and aisles.
- Secure work with clamping devices, freeing both hands to operate the tool.
- Tools **SHALL NEVER** be left unsecured on elevated places from which they may be dislodged.
- Carry tools securely in a tool belt or box. Use a tool lanyard to keep your tool from dropping and hitting someone below.
- **DO NOT** carry tools up ladders. Use a hoist or rope.
- Keep cutting tool edges sharp. Tools with dull edges are dangerous because they may slip off the material and cause a serious hand injury.
- Carry tools with sharp edges away from your body. Tools with sharp edges **SHALL** be stored and handled so that they will not cause injury or damage.
- Pass a tool to your coworker by the handle.
- Always notify your foreman before doing any work where there is danger of coming in contact with electrical wires or equipment.
- The protective covering on hand tools **SHALL NOT** be depended on to protect users from electrical shock. Only FM, UL, or CSA approved insulated hand tools may be used in lieu of rubber gloves on voltages less than 300 volts.
- Tools with metal or metal continuing through the handle and metallic measuring tapes **SHALL NOT** be used on or near energized electrical circuits or equipment.
- Pipe stands **MUST** have a safety mechanism, such as a lock washer, to prevent the upper part of the jack from falling into the stand. They **MUST** also have their capacity clearly labeled on the stand.
- Compressed air **SHALL NOT** be used for cleaning purposes, except where it is reduced to less than 30 pounds per square inch (psi) pressure and then only with effective chip guarding and personal protective equipment (Refer to HSE Policies – *Compressed Air and Personal Protective Equipment*).
- Clean off tools after use to prolong life expectancy.
- YATES LINE CO. tools are company property. When you are finished working, make sure you store the tools properly.

Hand Tools

- Avoid flammable substances and sparks produced by iron and steel hand tools—they can be a dangerous ignition source. Where this hazard exists, spark resistant tools made from brass, plastic, aluminum, or wood should be used.
- Personal pocketknives are not to be used on a job site by YATES LINE CO. employees.
- Proper cutting tools and cut resistant gloves will be issued for cutting tasks.
- Chisels, drills, punches, ground rods, pipes, etc., **SHALL** be held with suitable holders (not with the hands) while being struck by another employee.
- Chisels, punches, or drift pins that become mushroomed or cracked **SHALL** be dressed, repaired, or replaced before further use.
- Wrenches and hand tools **MUST** be kept free of oil and dirt to prevent slippage.

- **NEVER** push a wrench—pull it toward you for better control and safety.
- **ALWAYS** use a “striking face” box wrench or heavy-duty box or socket wrench to free a “frozen” nut or bolt. The use of penetrating oil is also recommended.
- **DO NOT** grind wrenches to change their shape.
- **NEVER** use open-end wrenches with spread, nicked, or battered jaws or box end wrenches with rounded or damage points. Replace wrenches with bent handles.
- **DO NOT** use a screwdriver with rounded edges or tips; it will slip and cause damage to the work or yourself.
- **DO NOT** use a screwdriver for prying, punching, chiseling, scoring, or scraping aluminum or wood. Use safety precautions.

Power Tools

- **DO NOT** use frayed, broken, or ungrounded electrical cords or tools.
- Safety devices **MUST** not be removed except for the purpose of repairs.
- When a temporary power source is used, a GFCI **MUST** be used (Refer to HSE Policy – *Ground Fault Circuit Interrupter/GFCI*).
- Electrical ground plugs will not be removed. **NEVER** cut off the grounding prong on a 3-prong plug. Insert 3-pronged plugs only in 3-prong outlets (Refer to HSE Policy – *Electrical Safety Awareness*).
- Electrical power tools should **NEVER** be used around water or wet areas.
- Avoid accidental startup. Ensure the switch is in the “off” position before plugging the tool into a power source. **DO NOT** hold your finger on the switch button while carrying a plugged-in tool. Lock-on switches should **NEVER** be used on electrical tools.
- Unplug or disconnect tools when not in use, before servicing, and when changing accessories such as grinding wheels, discs, blades, bits, and cutters.
- **DO NOT** raise or lower a power tool by its cord.
- **NEVER** yank the cord or hose to disconnect it from a receptacle.
- Protect your extension and power cords from sharp objects, excessive heat, and damp or wet areas.
- Keep cords well organized in the work area. Standing and walking on cords cause many slips, trips, twisted knees, ankles, etc.
- Route power cords at least seven (7) feet overhead and out of walkways whenever possible.

Hazard Communication

Hazard Communication, also referred to as the OSHA “Workers’ Right to Know Act,” is a system established to protect workers from inhaling, swallowing, injecting, ingesting, and absorbing harmful chemicals into their bodies above that which is allowed by OSHA’s permissible exposure limits (PELs). YATES LINE CO. is committed to ensuring that employees are informed and understand about the hazardous chemicals that they could be exposed to in the workplace, and appropriate safety measures to be utilized (Refer to HSE Policy – *Hazard Communication*).

Chemical Lists and Safety Data Sheets

YATES LINE CO.’s Hazard Communication Program relies on information provided from suppliers for the purpose of hazard identification. A list of all specific chemicals and their associated safety data sheets (SDSs) that are used by YATES LINE CO. employees are available from the safety department and in the work area. Information found on the 16 sections of a Safety Data Sheet (SDS) include:

1. Identification, Product Name, Emergency Contact Information

2. Hazard(s) Identification
3. Composition/Information of Ingredients
4. First Aid Measures
5. Fire Fighting Measures
6. Accidental Release Measures
7. Handling and Storage
8. Exposure Controls/Personal Protection (PPE)
9. Physical and Chemical Properties
10. Stability and Reactivity
11. Toxicological Information
12. Ecological Information
13. Disposal Considerations
14. Transport Information
15. Regulatory Information
16. Other information

It is YATES LINE CO.'s policy that the safety data sheets (SDSs) of hiring clients also be reviewed prior to any line breaks or the potential for chemical exposure. **READ** and **FOLLOW** all information listed on the SDS for each of the products and chemicals that you may use or encounter. Employees should contact their immediate supervisor or the safety department with any questions regarding chemical hazards.

Hazard Communication GHS

OSHA revised its Hazard Communication Standard in 2012 to conform with the United Nations' Globally Harmonized System (GHS) of Classification and Labeling of Chemicals. All affected employees of YATES LINE CO. shall receive appropriate training in Hazard Communication prior to working with or being exposed to hazardous chemicals (Refer to HSE Policy – *Hazard Communication*).

GHS Pictograms and Hazard Classes

HCS PICTOGRAMS & HAZARDS

Health Hazard  • Carcinogen • Mutagenicity • Reproductive Toxicity • Respiratory Sensitizer • Target Organ Toxicity • Aspiration Toxicity	Flame  • Flammables • Pyrophorics • Self-Heating • Emits Flammable Gas • Self-Reactives • Organic Peroxides	Exclamation Mark  • Irritant (skin and eye) • Skin Sensitizer • Acute Toxicity (harmful) • Narcotic Effects • Respiratory Tract Irritant • Hazardous to Ozone Layer (Non Mandatory)
Gas Cylinder  • Gases under pressure	Corrosion  • Skin Corrosion/ burns • Eye Damage • Corrosive to Metals	Exploding Bomb  • Explosives • Self-Reactives • Organic Peroxides
Flame over Circle  • Oxidizers	Environment (Non-mandatory)  • Aquatic Toxicity	Skull & Crossbones  • Acute Toxicity (fatal or toxic)

Labels

YATES LINE CO. will ensure that each container of hazardous chemicals in the workplace is labeled, tagged, or marked in accordance with OSHA regulations and company policies, which include product identifiers and words, pictures, symbols, or a combination thereof. Each YATES LINE CO. supervisor and supervisors for subcontractors **SHALL** be responsible for ensuring that all portable containers used in their work area are labeled with the proper identity and hazard warning. YATES LINE CO. employees **SHALL** be trained in how to read and interpret warning labels. Labels and other forms of warnings will be legible and in English, and prominently displayed on the container. Each container of hazardous chemicals **SHALL** be labeled, tagged, or otherwise marked to show the identity of the hazardous chemicals, hazard warnings, and name and address of the manufacturer or supplier. Labels should never be defaced or removed. If a label becomes damaged, a new label will be affixed to ensure all hazards and warnings are communicated. YATES LINE CO. employees and subcontractors should report damaged, unreadable, or missing labels to immediate supervision or the safety department.

Heat Illness Prevention

Numerous health and safety problems can arise out of exposure to excessive temperatures at worksites of YATES LINE CO. Preventing heat illnesses involves identifying heat hazards prior to work commencing, considering personal factors when assigning work, and properly addressing heat stress hazards (Refer to HSE Policies – *Risk Assessment* and *Heat Illness Prevention*).

YATES LINE CO. and subcontractor supervisors must implement procedures to control the environmental factors that can contribute to heat related illnesses. Environmental factors that contribute to heat stress include but are not limited to:

- Air temperatures of 90 degrees Fahrenheit or higher.
- Radiant temperature of surroundings; direct sunlight.
- Humidity above 60%.
- Low air movement/circulation.

Warning signs of mild heat stress include decreased energy, slight loss of appetite, nausea, and lightheadedness. Moderate symptoms include heavy sweating, muscle cramps, thirst, faintness, giddiness, and confusion. Serious signs of heat stress that require immediate medical attention are throbbing headache, mental confusion, irritability, combativeness, rapid heartbeat, difficulty breathing, dry/hot skin (no sweating), vomiting, diarrhea, muscle cramps, staggering, and possible collapse. YATES LINE CO. employees and subcontractors experiencing these symptoms should stop work immediately and notify their supervisor (Refer to HSE Policies – *First Aid*, *Stop Work Authority*, and *Heat Illness Prevention*). YATES LINE CO. will provide a period of acclimatization for affected employees exposed to heat stress environments.

Engineering controls such as air conditioning with cooled air and increased airflow should be employed. YATES LINE CO. provides worker training and during the first few days in warm or hot environments, supervisors will inform workers of the heat illness prevention measures:

- Know the symptoms of heat stress disorders so that appropriate action can be taken if experienced by a worker or coworker.
- Drink 5-7 ounces of fluid (water, Gatorade, or other heat stress drink), every 15-30 minutes when in extreme heat and humidity situations even if not thirsty. Restrict the consumption of alcoholic, caffeinated, or carbonated beverages. YATES LINE CO. will utilize methods (Gatorade or other heat stress drink) to provide electrolytes/salt replacement for affected employees during physical activities in hot climates that have the potential to cause heat related illnesses.
- Employees will have access to potable drinking water.
- Employees are encouraged to wear light colored clothing to reflect heat away from the body to lower the body temperature as quickly as possible. The following actions should be implemented (Refer to HSE Policies – *First Aid* and *Heat Illness Prevention*):
 - Move to the shade.
 - Loosen or remove clothing and boots.
 - Cool the body by fanning and pouring cool, not cold, water onto the skin.
 - Elevate legs and massage limbs.

Hexavalent Chromium

Hexavalent Chromium is a heavy metal component of stainless steel that can increase the risk of lung cancer in humans if inhaled in significant concentrations. Over exposure from fumes created in welding or plasma cutting on stainless steel pipe and ducts, dust from grinding on stainless steel and skin exposure are major concerns in the mechanical construction industry (Refer to HSE Policy – *Hexavalent Chromium*). In most applications, using localized exhaust ventilation and good welding work practices will mitigate the chances of overexposure. YATES LINE CO. employees will be provided respiratory protection when adequate ventilation is not achievable (Refer to HSE Policies – *Respiratory Protection*, *Welding*, *Cutting*, *Hot Work*, and *Hexavalent Chromium*).

Protection Against Overexposure

- Use localized exhaust ventilation to remove fumes and gases at their source in still air. Keep the exhaust trunk/hood as close to the fume source as possible to keep fumes and gases from your breathing zone.
- Use air blowers to draw fumes away from you and your immediate work area.
- Keep your head out of the smoke plume.
- Position your welding hood so that fumes will not rise under it and into your breathing zone.
- Use the safest welding method for the job. Stick welding makes fewer fumes than flux core welding.
- Use welding rods that produce a low fume. Up to 90% of the fumes can come from the rod. Welding guns that extract fumes can capture 95% of the fumes.
- If the ventilation is not adequate, respiratory protection is required.
- Wear proper PPE: long sleeves, welding jacket or welding sleeves, long pants, welding gloves, safety glasses or goggles under welding helmet and face shield, safety toed leather work boots, and respirator if necessary (Refer to HSE Policies - *Personal Protective Equipment, Respiratory Protection, Welding, Cutting, Hot Work, and Hexavalent Chromium*).
- When respiratory protection is required, be sure that you have the required training and proper respirator before starting work (Refer to HSE Policy – *Respiratory Protection*).
- Use proper hygiene.

High Voltage Overhead Work

More than one thousand people are killed each year in the United States due to generated electric current, and several thousand more injured (Refer to HSE Policy – *High Voltage Overhead Work Rules TD&G*). Current flowing inside the body can cause deep burns and cardiac arrest. Frequently, victims of electric shock cannot let go of the power source due to involuntary muscle contraction. The brain and heart are the most sensitive organs. For effects of current on the human body, see Table 1. An alternating current (AC) with a voltage greater than 550 V can puncture the skin and result in immediate contact with the inner body resistance. A 110-V shock may or may not result in dangerous current, depending on the circuit path, which may include skin resistance. A shock greater than 600 V will always result in very dangerous current levels. The most severe result of an electrical shock is death.

Conditions for a serious, yet still potential lethal, shock across a critical path, such as the heart are:

1. More than 30 V root mean square (rms), 42.4 V peak, or 60 V DC at a total impedance of less than 5000 ohms.
2. 10 to 75 mA.
3. More than 10 J.

Conditions for a potentially, but more than likely, lethal shock across the heart are:

1. More than 375 V at a total body impedance of less than 5000 ohms.
2. More than 75 mA.
3. More than 50 J.

The worst possible frequency for humans is 60 Hz, which is commonly used in utility power systems. Humans are about five times more sensitive to 60 Hz alternating current than to direct current. At 60 Hz, humans are more than six times as sensitive to alternating current at 5000 Hz—and the sensitivity appears to decrease still further as the frequency increases. Above 100-200 kHz, sensations change from tingling to warmth, although serious burns can occur from higher radio-frequency energy.

At much higher frequencies (e.g., above 1 MHz), the body again becomes sensitive to the effects of an alternating electric current, and contact with a conductor is no longer necessary; energy is transferred to the body by means of electromagnetic radiation.

Effect/ Feeling	Direct Current – DC (mA)	Alternating Current – 60 Hz AC (mA)	Severity
Slight sensation	1	0.4	None
Perception Threshold	5.2	1.1	None
Shock not painful	9	1.8	None
Shock painful	62	9	Spasm
Muscle clamps at source	76	16	Possibly fatal
Respiratory arrest	170	30	Frequently fatal
Ventricular Fibrillation > 5 seconds exposure	375	75	Probably fatal
Cardiac Arrest	---	4000	Possibly fatal
Organs burn	---	5000	Fatal if it is a vital organ
Source: Colorado State University – High Voltage Safety Manual			

Life-Threatening Effects

- Currents in excess of a human's "let go" current (≤ 16 mA at 60 Hz) passing through the chest can produce collapse, unconsciousness, asphyxia, and even death.
- Currents (≤ 30 mA at 60 Hz) flowing through the nerve centers that control breathing can produce respiratory inhibition, which could last long after the interruption of the current.
- Cardiac arrest can be caused by a current greater than or equal to 1 A at 60 Hz flowing in the region of the heart.
- Relatively high currents (0.25 – 1 A) can produce fatal damage to the central nervous system.
- Currents greater than 5 A can produce deep body and organ burns, substantially raise body temperature, and cause immediate death.
- Serious burns or other complications can cause delayed reactions and even death.

The most dangerous current flow via the chest cavity is through the heart when the shock occurs in the time relative to the normal heart rhythm. This current may cause ventricular fibrillation, which is defined as repeated, rapid, uncoordinated contractions of the heart ventricles. Ventricular fibrillation that alters the heart's normal rhythmic pumping action can be initiated by a current flow of 75 mA or greater for 5 seconds (5-s) or more through the chest cavity. The purpose of this set of guidelines is not to frighten but rather to make people aware of the appropriate precautions. The next section will discuss general guidelines to follow when working with high voltage.

Guidelines for High Voltage Work

- Do not work alone – in the event of an emergency, another person's presence may be essential (Refer to HSE Policy – *Working Alone*).
- Know the emergency procedures to follow in case of an accident.
- De-energize the equipment at least twice prior to beginning work. Make sure that the controls applied will prevent operation of the equipment and that all hazardous energy, including residual or stored energy, is blocked, discharged, or relieved prior to starting work (Refer to HSE Policies – *Electrical Safety* and *Lockout/Tagout*).

- After discharge has been completed, only touch the circuit with the back of the hand first. This allows you to let go if needed.
- Never enter along into an area containing exposed electrical energy sources.
- Use only the test instruments and insulated tools rated for the voltage and current specified.
- Always keep one hand in your pocket when anywhere around a powered line-connected or high voltage system.
- Wear rubber bottom shoes or sneakers.
- Don't wear any jewelry or other articles that could accidentally contact circuitry and conduct current or get caught in moving parts.
- Set up the work area away from possible grounds that could accidentally occur.
- Know the equipment.
- With the need to probe, solder, or otherwise touch circuits with the power off, discharge (across) large power supply filter capacitors (at least two times). Monitor while discharging and/or verify that there is no residual charge with a suitable voltmeter.
- When probing live, put electrical tape over all but the last 1/16" of test probes to avoid the possibility of an accidental short, which could cause damage to various components. Clip the reference end of the meter or scope to the appropriate ground return so probing can be accomplished with one hand.
- Perform as many tests as possible with the power off and the equipment isolated.
- Do not attempt repair work when fatigued or tired.
- Never assume!

Hazards of High Voltage Supplies (AC or DC) and Trigger Generators

- Faults, lightning, or switching transients can cause voltage surges more than the normal ratings.
- Internal component failure can cause excessive voltages on external metering circuits and low voltage auxiliary control circuits.
- Overcurrent protective devices such as fuses and circuit breakers for conventional applications may not adequately limit or interrupt the total inductive energy and fault currents in highly inductive DC systems.
- Stored energy in long cable runs can be an unexpected hazard. Procedures must be in place to ensure proper discharge of this energy.
- Involuntary reactions from contact with high-voltage low-current systems may result in a fall or entanglement with equipment.

Power supplies that can deliver energy in excess of 10 J at more than 50 V are considered potentially hazardous, and the hazards shall be identified. An appropriate warning sign shall identify electrical hazards in areas or equipment accessible to unqualified personnel. Internal component failure of power supplies can result in excessive voltages across components that may not be appropriately sized. An internal component short in a capacitor bank may result in excessive fault current, extremely high temperatures, over pressurization of components, fires, and explosions. Overloading or improper cooling of power supplies can cause excessive temperatures and fires. Output circuits and components may remain energized after input power is secured.

Electrical Safe Work Practices – (Refer to HSE Policies – *Electrical Safety* and *NFPA 70E*)

Only qualified persons shall perform electrical repairs. It is dangerous for an unqualified worker to attempt electrical repair. Before any electrical maintenance or troubleshooting is performed, sources of electrical energy shall be de-energized, except where it is necessary for troubleshooting, testing, or areas that are infeasible to de-energize. All energy sources shall be brought to a safe state. For example, capacitors shall be discharged, and high capacitance elements shall be short-circuited and grounded.

Qualified electrical employees performing such tasks as electrical repairs, modifications, and test on energized electrical systems, parts, and equipment must comply with the following:

1. Live parts to which an employee may be exposed shall be de-energized before the employee works on or near them, unless it can be demonstrated that de-energizing introduces additional or increased hazards or is feasible due to equipment design or operational limitations (Refer to HSE Policies - *Electrical Safety* and *NFPA 70E*).
2. Work performed on energized electrical systems and equipment may only be done if a supervisor and/or cognizant safety professional and the personnel performing the work determine that it can be done safely. Approval should be given for each job. Approval for the same job performed repeatedly may be given using an approved procedure or job safety analysis.
3. Personnel shall not work on energized circuits unless they are qualified to do so, or, for training purposes, unless they work under the direct supervision of a qualified person.
4. Sufficient protection in the form of insulated tools and insulated protective equipment, such as gloves, blankets, sleeves, mats, etc., shall be used while working on energized circuits (Refer to HSE Policies – *Electrical Safety*, *Personal Protective Equipment*, and *NFPA 70E*).
5. Other work, independent of voltage, that presents a significant shock or arc blast hazard to employees, must be evaluated as to the number of employees involved.
6. At least two employees must be present while the following types of work are being performed:
 - a. Installation, removal, or repair of lines that are energized at more than 600 volts.
 - b. Installation, removal, or repair of de-energized lines if an employee is exposed to contact with other parts energized at more than 600 volts.
 - c. Installation, removal, or repair of equipment, such as transformers, capacitors, and regulators, if an employee exposed to contact with parts energized at more than 600 volts.
 - d. Work involving the use of mechanical equipment, other than insulated aerial lifts, near parts energized at more than 600 volts; and
 - e. Other work that exposes an employee to electrical hazards greater than or equal to those listed above.

Exceptions to the items listed above:

- a. Routine switching of circuits, if it can be demonstrated that conditions at the site allow this work to be performed safely.
- b. Work performed with live-line tools if the employee is positioned so that he or she is neither within reach of nor otherwise exposed with energized parts; and
- c. Emergency repairs to the extent necessary to safeguard the general public.

Safety Watch

The responsibilities and qualifications of personnel for sites that require the use of a safety watch are as follows:

1. Trained in cardiopulmonary resuscitation (CPR).
2. Thorough knowledge of the locations of emergency shutdown push buttons and power disconnects in their operations.
3. Thorough knowledge of the specific working procedures to be followed and the work to be done.
4. Specific responsibilities include monitoring the work area for unsafe conditions or work practices and taking necessary action to ensure abatement of the unsafe condition or work practice, de-energizing equipment and alerting emergency rescue personnel as conditions warrant, maintaining visual and audible contact with personnel performing the work, and removal of injured personnel, if possible.

5. The safety watch should have no other duties that preclude observing and rendering aid if necessary.

Work Planning

Electrical instructions may include, but not be limited to, the following:

1. De-energizing circuits, if possible, and a means to prevent reenergization (Lockout/Tagout) (Refer to HSE Policy – *Lockout/Tagout*).
2. Grounding conductors and all possible conducting parts.
3. Controlling associated generating equipment.
4. Testing of equipment to ensure safe conditions.
5. Provision of rubber insulated protective equipment rated for the highest voltage present.
6. A qualified person.
7. Personal protective equipment and protective clothing.
8. Working on experimental equipment.

Live Parts

Live parts that an employee may be exposed to shall be de-energized before the employee works on or near them, unless it can be demonstrated that de-energizing introduces additional or increased hazards or is infeasible because of equipment design or operational limitations. Examples of infeasibility because of equipment design or operational limitations are as follows:

1. Tests
2. Adjustments
3. Troubleshooting
4. Interruption of life supports
5. Removal of lighting in an area
6. Deactivation of alarm systems
7. Shutdown of ventilation in hazardous locations
8. Shutdown of a process or system creating a greater hazard. Live parts that operate at less than 50 volts to ground need not be de-energized if there will be no increased exposure to electrical burns or to explosion due to electrical arcs [See 29 CFR 1910.333(a)(1)].

Live parts that operate at less than 50 volts to ground need not be de-energized if there will be no increased exposure to electrical burns or to explosion due to electrical arcs.

Table 2 – Minimum approach distances to energized conductors for persons other than qualified line-clearance arborists and qualified line-clearance arborist trainees

Nominal voltage kV phase-to- phase ¹⁾	Distance	
	ft-in	m
0.0 – 1.0	10-00	3.05
1.1 – 15.0	10-00	3.05
15.1 – 36.0	10-00	3.05
36.1 – 50.0	10-00	3.05
50.1 – 72.5	10-09	3.28
72.6 – 121.0	12-04	3.76
138.0 – 145.0	13-02	4.00
161.0 – 169.0	14-00	4.24
230.0 – 242.0	16-05	4.97
345.0 – 362.0	20-05	6.17
500.0 – 550.0	26-08	8.05
785.0 – 800.0	35-00	10.55
¹⁾ Exceeds phase-to-ground.		

High Voltage Underground Work Rules

Electrical hazards are among the most significant and life-threatening risks in the workplace. Only qualified and authorized employees will perform work on underground transmission and distribution systems (Refer to HSE Policy – *High Voltage Underground Work Rules – TD&G*). Employees must use a ladder or other climbing device to enter and exit a manhole or subsurface vault exceeding four feet in depth. No employee may climb into or out of a manhole or vault by stepping on cables or hangers.

While working in manholes and vaults, a confined space entry permit maybe required (Refer to HSE Policy – *Confined Space*). The location of any underground cable or conduit must be appropriately marked. All buried electrical PVC conduits and any steel conduits with a voltage greater than 600 volts must be set in concrete and identified by red permanent markings. Prior to entry into underground cable or conduit vaults, such will be checked for toxic or flammable vapors prior to entry (Refer to HSE Policy – *Confined Space*).

When working on cables and apparatus, workers must maintain the required minimum approach distance. All cable and apparatus must be properly tagged. Rubber blankets or other suitable insulating barriers should be placed appropriately to prevent accidental contact when in proximity to live parts.

Before any employee operates a primary grounding switch, the operator who is authorized for the work will ensure that all employees are at their correct locations, tags on feeder cable and equipment in the vault or manhole have the same matching numbers as shown on drawings/diagrams, and network protectors are in the open position (or in the case of radial transformers, the secondary fuses have been removed and transformer secondaries are de-energized).

A site-specific task plan will be developed for work tasks involving cables containing lead or asbestos (Refer to HSE Policies- *Asbestos Awareness* and *Lead*). Affected employees will receive proper training and certification prior to working on asbestos or lead-sheathed cables.

When multiple cables are present in a work area, YATES LINE CO. will identify the cable to be worked by electrical means, unless its identity is obvious by reason of distinctive appearance or location or by other readily apparent means of identification. YATES LINE CO. will protect cables other than the one being worked from damage. Except when employees are permitted to perform work that could cause a fault in an energized cable in a manhole or vault, YATES LINE CO. will ensure that employees inspect energized cables to be moved for abnormalities.

Cable Pulling

- Do not handle pull wires or pulling lines within reaching distances of blocks, sheaves, winch drums, and take-up reels.
- Do not remain in a manhole during pulling operations.
- Do not use wire rope to pull cable in a duct already occupied by conductors.
- Use a nonmetallic duct fishing wire or device when fishing ducts containing energized conductors.
- Always fish ducts in the direction that presents the least hazard. Consider stationing a worker at each end when fishing ducts.

Buried Electrical Cables

YATES LINE CO. employees must use area utility maps to locate existing buried cables and nearby utilities as accurately as possible, especially prior to digging. Permits may be required and must be obtained before digging. When excavating near or exposing direct-burial electric underground cables, care must be taken. If the depth of all direct-burial cables is known, power digging equipment can be used for excavating all but the last 12 in. (305 mm) of cover over the cables. The remaining cover must be removed by use of hand-digging tools with FRP handles. Where the depth of direct-burial cables is not established, power-digging equipment must not be used, except to break and remove the surface pavement. YATES LINE CO. employees are forbidden to use probe rods or bars to locate any underground direct-burial cables. Care must be taken to protect all exposed cables against damage in the work area with boards or other nonconductive materials. Non-flammable protective material must be used when welding next to adjacent cables.

Proximity

YATES LINE CO. will not permit an employee to work in such proximity to any part of an electric power circuit that the employee could contact the electric power circuit in the course of work unless the employee is protected against electric shock by de-energizing the circuit and grounding it or by guarding it effectively by insulation or other means. In work areas where the exact location of underground electrical powerlines is unknown, employees using jackhammers, bars, or other hand tools which may contact a line shall be provided with insulated gloves (Refer to HSE Policies – *Electrical Safety* and *Personal Protective Equipment*). When employees are working on energized circuits or equipment, rubber protective gloves

and sleeves rated for the exposure of the highest nominal voltage shall be worn "lock to lock" when employees are working on underground electrical equipment, to include when the employee manipulates the enclosure's door.

Before work begins, YATES LINE CO. will ascertain by inquiry or direct observation, or by instruments, whether any part of an energized electric power circuit, exposed or concealed, is so located that the performance of the work may bring any person, tool, or machine into physical or electrical contact with the electric power circuit. YATES LINE CO. will post and maintain proper warning signs where such a circuit exists. YATES LINE CO. will advise employees of the location of such lines, the hazards involved, and the protective measures to be taken.

White Lining During Excavations/Underground Work

Prior to calling the local One-Call center (8-1-1), YATES LINE CO. will white-line the area of the excavation if the project area cannot be accurately described to the One-Call center. White-lining the area of excavation requires the excavator to place a white-line with spray-paint or flags around the area of excavation, prior to or during the request for the locate ticket (Refer to HSE Policy – *Excavation and Trenching*).

One-Call Facility Locate Request

YATES LINE CO. will notify the appropriate One-Call center by dialing 8-1-1 at least 48 hours, but not more than fourteen (14) days prior to the date of the excavation, excluding Saturdays, Sundays, and legal Federal and State holidays.

Line Clearance Tree Trimming

Line clearance tree trimming refers to pruning, trimming, repairing, maintaining, removing, or clearing of trees or the cutting of brush that is within ten (10) feet of energized power line. YATES LINE CO. policy addresses both personnel and equipment requirements (Refer to HSE Policy – *Line Clearance Tree Trimming*). The policy applies to qualified employees and line-clearance tree trimmers who are clearing lines with brush clippers, sprayers, stump cutters, chain saws, backpack power cutters, climbing ropes, or safety saddles.

YATES LINE CO. recognizes three different qualification levels for line-clearance tree trimmers:

- (1) Unqualified electrical employees (Refer to HSE Policies – *Electrical Safety* and *Line Clearance Tree Trimming*).
- (2) 29 CFR 1910.269 electrically qualified employees.
- (3) Line-clearance tree trimmers.

Unqualified electrical employees must maintain the minimum approach distance of at least ten (10) feet from overhead powerlines. Qualified 29 CFR 1910.269 employees must use their specifically designated skills and any other tree cutting procedures and training to safely trim trees. Line-clearance tree trimmers are workers who have received specialized training by YATES LINE CO. so they can work within ten (10) feet of energized power lines and equipment. YATES LINE CO. line-clearance tree trimmers must:

- Determine the voltage(s) of any lines that may pose a hazard before work begins. Alternatively, all lines must be considered as operating at the voltage of the line with the highest voltage.
- Ensure their body parts and any ladders, platforms, or aerial devices being used remain outside the minimum approach distance from any energized part.
- Use only insulated tools and equipment to remove branches and limbs that are in contact with, or are within the minimum approach distance of, energized parts.

- Not work during adverse weather conditions (high winds, icing, thunder, lightning, etc.) that make the work hazardous. Line-clearance tree trimming personnel may, however, begin work on storm restoration efforts in the aftermath of a storm if they have been trained in the special hazards involved with this type of work. These employees may perform work in any type of weather in the lines and circuits in the area have been de-energized per the requirements of Federal, State, and Local regulations and the policies of YATES LINE CO.

In addition to these specific operational requirements, YATES LINE CO. line-clearance tree trimmers must also:

- Be trained and certified in, and observed at least annually, to be complying with safety related work practices and procedures to include emergency procedures.
- Follow YATES LINE CO. policies regarding First Aid (Refer to HSE Policy – *First Aid*).
- Be provided with a job briefing before beginning work or if the expected conditions change.
- Properly wear approved personal protective equipment, including fall protection equipment, when required (Refer to HSE Policies – *Personal Protective Equipment* and *Fall Protection*).
- Comply with material handling and mechanical requirements (Refer to HSE Policy – *Aerial Lifts*).

NFPA 70E

The National Fire Protection Association (NFPA) 70E requirements for safe work practice to protect workers by reducing exposure to major electrical hazards was originally developed at the request of OSHA to help companies and employees avoid workplace injuries and fatalities due to electrical shock, electrocution, arc flash, and arc blast. While it is the policy of YATES LINE CO. to de-energize power sources prior to performing any work on an electrical system, it is understood that at times it is necessary to be exposed to the energy source. Prior to the point of exposure, workers must be protected from a potential arc flash by means of proper personal protective equipment and levels of protection with the use of fire-resistant garments appropriate to the hazard (Refer to HSE Policy – *NFPA 70E*).

Prior to any work being done within the limited approach boundary, a hazard risk analysis will be performed. The analysis will contain event severity, frequency, probability, and avoidance to determine the level of safe practices employed. The pre-job briefing will cover hazards associated with the job, work procedures involved, special precautions/risks, energy source controls, will implement risk control in accordance with an established hierarchy of controls that place elimination of the hazards as the preferred method of control, and personal protective equipment requirements (PPE is the last option if all other options have been exhausted). Additional job briefings will be held if changes that might affect the safety of employees occur during the course of work. The risk assessment will account for the hazards at the limited approach and arc flash boundaries.

The limited approach boundary is the distance from an exposed live part where a shock hazard exists. The restricted approach boundary is the closest distance to exposed live parts a qualified person can approach without proper PPE and tools. Inside this boundary, accidental movement can put a part of the body or conductive tools in contact with live parts or inside the prohibited approach boundary. To cross the restricted approach boundary, the qualified person must:

- Have an energized work permit that is approved by the supervisor or manager responsible for the safety plan.
- Use personal protective equipment suitable for working near exposed live parts and rated for the voltage and energy level involved.
- Be certain that no part of the body enters the prohibited space.
- Minimize the risk from unintended movement by keeping as much of the body as possible out of the restricted space.

The prohibited approach boundary is the minimum approach distance to exposed live parts to prevent flashover or arcing. Approaching any closer is comparable to making direct contact with a live part. To cross the prohibited approach boundary, the qualified electrical worker must:

- Have specific training to work on exposed live parts.
- Have a permit to work with proper work procedures and justification.
- Perform a risk analysis or evaluation.
- Have a permit and risk analysis approved by the appropriate supervisor.
- Use personal protective equipment appropriate for working near exposed live parts and rated for the voltage and energy level involved.
- Be able to anticipate unexpected events and treat all parts as live until proven otherwise.
- Perform an electrical arc flash hazard analysis.

Limited Approach Boundary				
Nominal System voltage range, phase to phase	Exposed movable conductor	Exposed fixed-circuit part	Restricted approach boundary (allowing for accidental movement)	Prohibited approach boundary
0 to 50 volts	Not specified	Not specified	Not specified	Not specified
51 to 300 volts	10 ft. 0 in.	3 ft. 6 in.	Avoid contact	Avoid contact
301 to 750 volts	10 ft. 0 in.	3 ft. 6 in.	1 ft. 0 in.	0 ft. 1 in.
751 to 15 kV	10 ft. 0 in.	5 ft. 0 in.	2 ft. 2 in.	0 ft. 7 in.
15.1 kV to 36 kV	10 ft. 0 in.	6 ft. 0 in.	2 ft. 7 in.	0 ft. 10 in.
36.1 kV to 46 kV	10 ft. 0 in.	8 ft. 0 in.	2 ft. 9 in.	1 ft. 5 in.
46.1 kV to 72.5 kV	10 ft. 0 in.	8 ft. 0 in.	3 ft. 2 in.	2 ft. 1 in.
72.6 kV to 121 kV	10 ft. 8 in.	8 ft. 0 in.	3 ft. 3 in.	2 ft. 8 in.
138 kV to 145 kV	11 ft. 0 in.	10 ft. 0 in.	3 ft. 7 in.	3 ft. 1 in.
161 kV to 169 kV	11 ft. 8 in.	11 ft. 8 in.	4 ft. 0 in.	3 ft. 6 in.
230 kV to 242 kV	13 ft. 0 in.	13 ft. 0 in.	5 ft. 3 in.	4 ft. 9 in.
345 kV to 262 kV	15 ft. 4 in.	15 ft. 4 in.	8 ft. 6 in.	8 ft. 0 in.

Hydroblasting

High-pressure water cleaning is normally performed using jet streams that can have a velocity greater than that of a 45-caliber bullet and do as much damage (Refer to HSE Policy – *Hydroblasting*). Therefore, extreme caution and strict compliance with procedures must be used to prevent the jet stream from striking the operator, other employees, or delicate equipment. No portion of the body must ever be placed in front of the water jet. These jets of water can easily puncture and tear the skin or penetrate deeper causing infection or serious internal damage. Horseplay with such equipment is strictly forbidden. Violators will be disciplined and subject to immediate termination.

Personnel performing high-pressure water cleaning who are exposed to water spray or reflected material will wear a raincoat, rubber pants, safety glasses, hardhat with face shield, rubber boots, and gloves. Hearing protection will also be worn. These do NOT provide protection from the jet but do protect against hazards encountered while performing the work.

The following identifies at a minimum the personal protective equipment that will be issued to employees performing high-pressure water cleaning outside of the required hardhat and safety glasses with side shields:

- Face shields – Clear shield nine inches deep by fifteen and ½ inches wide by 0.60 thick.

- Rain Suit – Made of nylon fabric coated with Neoprene on both sides.
- Gloves – Made of Neoprene, rubber, and PVC with rough wet grip finish.
- Rubber Steel Toed Boots – Knee length with ribbed steel shanks and heavy tread soles for nonslip traction.

When cleaning equipment which could possibly be contaminated with hazardous chemicals, appropriate additional protection specified by the project management/safety will be worn by the operator as well as other employees who may be affected.

Only qualified and authorized YATES LINE CO. employees or subcontractors may perform any high-pressure water cleaning. Workers will depressurize the high-pressure water system when not in use, unauthorized or inadequately protected personnel enter the area, replacement or repairs are made to the system, or company policies and procedures are violated.

All cleaning crews will be composed of a minimum of two operators. Crew members will be always in visual contact. Operators are not allowed to operate the high-pressure water system more than eight (8) consecutive hours in any sixteen (16) hour period. The equipment operator nearest the high-pressure nozzle must always have a means of immediately reducing pressure or interrupting the flow to the nozzle. When the hose drop exceeds ten (10) feet, the hose will be securely tied off to a rigid support with a fiber rope to limit the pull due to hose weight. Bend radius limits (as identified by the manufacturer) must be maintained. At least one control valve or switch will control each high-pressure tool. An employee will operate only one high-pressure lance, mole, or shotgun at one time.

The area around the job, pump, and hoses will be barricaded a minimum of fifteen (15) feet and signs stating "**DANGER – HIGH-PRESSURE WATER CLEANING**" must be placed at the perimeters. Barricades may be of rope, tape, barrels, etc. as long as they give an effective warning and are highly visible. If the job is above ground level, barricades may be required below. Warning signs should be placed along those portions of the high-pressure water hose, which are outside the barricades. When line mooling, all pipe openings will be properly barricaded.

High-pressure water cleaning equipment must be designed and maintained to achieve a minimum safety factor of three to one (3:1) against maximum allowable working pressure.

Hose data, i.e., manufacturer's symbol, serial number, working and test pressure, and certified rating, which will provide a safety factor of 3 to 1 against burst, will be recorded and retained in the project's central files.

Equipment Setup, Inspections, and Testing

An automatic relief device will be installed on the high-pressure side of the pump set to relieve at not higher than the maximum allowable working pressure of the lowest rated component in the high-pressure system and will be tested annually. Documentation will be maintained on the test results. Prior to starting the job, a visual inspection of the high-pressure components (including rupture disk pressure rating) should be performed and documented. Hose with exposed or damaged wire braid will be removed from high-pressure service. The assembled high-pressure water cleaning components will be **SLOWLY** pressurized to the maximum operating pressure to verify integrity of the system. A hose inspection and testing program (per manufacturer's guidelines) will be conducted at least quarterly. The inspection test will be conducted at 1 ½ times the maximum operating pressure and will be observed and documented by personnel responsible for the site procedure. Hose failures usually occur near fittings due to bending stresses during use and handling.

Pressurized hoses will **NOT** be handled within one foot of hose-to-hose connections. Hose-to-tool connections, which are in frequent contact with the operator, must be shielded by a shroud to protect the operator. These shrouds must have sufficient rigidity to resist bending to a radius smaller than that recommended by the hose manufacturers.

Maintenance

Competent employees will conduct servicing and maintenance according with the manufacturer's specifications. The following items will be maintained and inspected for proper functioning at the manufacturer's recommended intervals:

- Pressure relief valve.
- Bursting discs (if used).
- Pressure control valves.
- Hand or foot operated dump control valve or dry shut-off valve.
- Dry shut-off valve or dump systems.
- Changeover valve.

Tools

When maintaining or assembling high-pressure water cleaning systems, the correct size tool **MUST** be used. The use of adjustable tools having serrated gripping jaws (i.e., pipe wrenches), which can damage equipment, will **NOT** be used.

NOTE: Only manufacturer parts may be used for repairs to equipment. Manufacturer equipment will not be altered or modified under any circumstances.

High Pressure Water Cleaning Methods

Lancing, line moiling, and shot gunning are the basic high-pressure water cleaning methods. Different variations of each method are available and increasing with new technology. Rotating nozzle assemblies, rotating lances, and orbital nozzles are some variations available currently. Rotating equipment such as lances and nozzle tips must be guarded to prevent contact and injury to operating personnel. Loose clothing, which can be caught in rotating equipment, is **NOT** permitted.

Hydrogen Sulfide

Hydrogen Sulfide (H_2S) is a colorless, flammable, and extremely hazardous gas with a "rotten" egg smell (Refer to HSE Policy – *Hydrogen Sulfide*). People can smell hydrogen sulfide at very low concentrations in the air. At higher concentrations, people inhaling hydrogen sulfide gas potentially lose their ability to smell the gas even though it is still present (olfactory fatigue). This can happen rapidly, and at higher concentrations, the ability to smell the gas can be lost instantaneously. Therefore, **DO NOT** rely on your sense of smell to indicate the presence of hydrogen sulfide or to warn of hazardous concentrations.

In addition, hydrogen sulfide is a highly flammable gas and gas/air mixtures can be explosive. The gas may travel to the sources of ignition and flash back. If ignited, the gas burns to produce toxic gases and vapors, such as sulfur dioxide. Hydrogen sulfide is heavier than air and can collect in low-lying, enclosed, and poorly ventilated areas such as industrial and food producing facilities, piping and corroded pipe repairs, pre-heat exchangers, basements, manholes, sewer lines, wastewater treatment, excavations deeper than four (4) feet, underground telephone/electrical vaults, and manure pits. Hydrogen sulfide occurs naturally in crude oil, petroleum, and natural gas. The gas can be produced by the breakdown of organic material and human/animal wastes. OSHA has established an accepted ceiling concentration of 20 parts per million (ppm) however, common industry accepted occupational exposure limits (OELs) are 10 parts per million (Refer to HSE Policy – *Hydrogen Sulfide*).

Health effects vary depending on concentration and length of exposure. Concentrations as low as 500 ppm have led to death. The primary route of exposure is inhalation, and the gas is rapidly absorbed by the lungs. Symptoms from exposure

include coughing, eye inflammation, headache, fatigue, irritability, insomnia, digestive disturbances, shock, convulsions, inability to breathe, unconsciousness, coma, and death. These effects can occur within a few breaths, possibly a single breath.

Safe Work Practices

- Wherever possible, exposure should be minimized by implementing adequate engineering controls and safe work practices. Our projects are typically multiemployer worksites. Communication must be made with the host facility to ensure our employees are not exposed above recommended levels.
- For work within confined spaces, use appropriate procedures for identifying hazards, monitoring, and entering confined spaces (Refer to HSE Policy – *Confined Space*).
- The air needs to be tested for the presence and concentration of hydrogen sulfide by a qualified person using test equipment. This individual also determines if fire/explosion precautions are necessary (Refer to HSE Policies – *Hydrogen Sulfide* and *Fire Protection/Extinguishers*).
- If gas is present, the space should be ventilated and retested.
- Atmospheres containing high concentrations (greater than 100 ppm) are considered immediately dangerous to life and health (IDLH) and a self-contained breathing apparatus (SCBA) is required. No entry into IDLH atmospheres will be made by YATES LINE CO. employees. YATES LINE CO. employees are not trained in the use of SCBAs or rescue training under these circumstances.
- Protective engineering controls and work practices are generally sufficient to reduce exposures to, at, or below the PEL/STEL without the use of respirators.
- Where an area has been determined to be contaminated with hydrogen sulfide, work will be stopped until further evaluation and engineering practices can be implemented to prevent further exposure to YATES LINE CO. employees.
- Should an alarm sound on an H₂S detector, immediately evacuate the area by holding your breath and moving quickly upwind and cross wind.
- Immediately notify your supervisor and the safety department if you feel you have been exposed to or are developing potential signs or symptoms of hydrogen sulfide exposure.
- **DO NOT** re-enter the area until it has been determined safe for re-entry.

Journey Management

The purpose of YATES LINE CO.'s *Journey Management* policy is to reduce vehicle incidents, minimize damage to equipment involving vehicle operations, and to require planning of trips by all YATES LINE CO. employees and subcontractors operating owned, leased, or borrowed vehicles through careful management of all phases of the transportation process.

Employees and subcontractors are expected to follow YATES LINE CO.'s policies and procedures concerning vehicle operations (Refer to HSE Policies – *Driving Safety* and *Journey Management*). Employees and subcontractors must notify their supervisors of travel plans. This notification should include where they are going, when they should arrive, and when they plan to return. All drivers must carry a reliable means of communication in the event of an emergency.

Drivers are expected to obtain driving directions prior to traveling to an unfamiliar destination. Before taking a trip to an unfamiliar location, each employee will ensure they have printed driving directions available. A GPS device may be used, but printed directions should be kept as a backup. Do not plan to read directions from a smartphone while driving.

Prior to leaving, the travel route should be determined, including interim stops, and destinations. Use appropriate resources to gather information for security, medical, and travel status on interim stops along the route of travel, as well as the destination.

During the journey, YATES LINE CO.'s local management will monitor the security and medical situation for employees. Potential journeys involving driving and/or road transport should be screened and assessed relative to hazards, risks, and costs with the following types of questions:

1. Road travel should be limited whenever practicable. Road journeys should only be taken when necessary. Tasks should be completed in single trips to reduce the amount of driving time for improved safety and efficiency.
2. Consider safer methods of travel such as air, train, etc.
3. Can the business requirement for a potential journey be delayed and possibly combined with a later trip?
4. Driving during adverse weather conditions should be avoided, whenever practicable. Before leaving on a trip, drivers should ensure that weather conditions are safe for driving. Ensure the vehicle being used is adequate for the weather conditions. Make sure emergency supplies are in the vehicle and a cell phone is available for emergencies. In particularly harsh conditions, consider canceling the trip or rescheduling.
5. Road travel should be scheduled in daylight hours, whenever practicable.
6. Planned rest breaks should be taken to reduce driver fatigue. If two licensed and authorized drivers are in the vehicle, take turns driving.

Ladder Safety

Ladder safety varies with each job and **MUST** be evaluated on an individual basis; not all ladders are suitable for all jobs (Refer to HSE Policies - *Ladder Safety* and *Fall Protection*). When selecting a ladder consider the following:

- Read and follow all labels/markings on the ladder.
- **ALWAYS** inspect the ladder prior to using it. If the ladder is damaged, it must be removed from service and tagged until repaired or discarded.
- **DO NOT** exceed or load ladders beyond their maximum intended load, nor beyond their manufacturer's rated capacity. Be aware the ladder's load rating and of the weight it is supporting, including the weight of any tools or equipment, and ensure it is not beyond the manufacturer's rated capacity.
- Portable ladders **SHALL** be capable of supporting at least four times the maximum intended load. Take into consideration your tools and equipment.
- Ladders **SHALL** be used only for the purpose for which they were designed.
- Ladders **SHALL** be maintained free of oil, grease, and other slipping hazards.
- Ladders must be free of any slippery material on the rungs, steps, or feet.
- Ladders must be kept in a safe condition. Store in designated areas on racks or hooks.
- Choose the correct ladder. Each ladder must be long enough to afford access to the work area without having to stand on the top two steps on an ordinary stepladder, or the top three rungs of a straight ladder.
- Employees **SHALL** not work from either the top three rungs of a straight ladder or from the top two steps of a step ladder.
- **DO NOT** sit on top of a ladder.
- Use a ladder only on a firm, level, and substantial base surface, unless it has been secured (top or bottom) to prevent accidental displacement.
- Ladders must have non-skid feet or be braced to prevent slippage.

- Always keep the area around the top and bottom of the ladder clear.
- For elevated work, ladders should be chosen **ONLY** when aerial lifts and scaffolds are not practical (Refer to HSE Policies – *Ladder Safety, Aerial Lifts, and Scaffolding*).
- **DO NOT** use ladders on slippery surfaces unless secured or provided with slip resistant feet to prevent accidental movement. Do not use slip resistant feet as a substitute for exercising care when placing, lashing, or holding a ladder upon slippery surfaces.
- Set up the ladder on a firm, solid surface. **DO NOT** place a ladder on boxes, barrels, or other unstable bases to obtain additional height.
- Short ladders **MUST** not be spliced together to form a long ladder.
- Only use ladders and appropriate accessories (ladder levelers, jacks, or hooks) for their designed purposes.
- Pay attention to the Ladder Load Rating. Type 1A is an Extra Heavy-Duty ladder made for construction use. Its load capacity is 300 pounds. Type 1AA is a Special or Super Heavy-Duty ladder made for heavy duty industrial and construction use with a 375-pound load capacity.
- Do not set a ladder up on a scaffold to gain extra height. **EXCEPTION:** a ladder can be set up on a scaffold if all hazards are identified, permission has been granted from the scaffold builder, 100% tie-off is achieved, and the ladder is properly secured.
- Ladders **MUST** be secured by tying off, i.e., nearby structural steel, piping, etc. If there is not a place to tie-off the ladder, such as an MCC room or office area, someone else must hold the ladder.
- Do not use the top step/rung of a ladder as a step/rung unless it was designed for that purpose. Each ladder **MUST** be long enough to afford access to the work area without having to stand on the top two steps of a stepladder, or the top three rungs of a straight ladder.
- **AVOID ELECTRICAL HAZARDS!** – Look for overhead power lines before handling a ladder. Use ladders equipped with nonconductive side rails if the worker or the ladder could contact exposed energized electrical equipment. They also must be positioned at the designated safe distance away from the exposed energized equipment. Fiberglass ladders are the preferred choice of ladders on jobsites. YATES LINE CO. employees are not to use metal or wooden portable ladders on the jobsite.
- Keep areas clear around the top and bottom of ladders.
- **DO NOT** move or shift a ladder while a person, tools, or any equipment is on the ladder.
- Only one person is allowed on a ladder at a time, unless the ladder is specifically designed for multiple occupancy, such as twin step ladders.
- Ladders used for access to an upper landing surface **SHALL** have side rails that extend at least three (3) feet above the landing surface.
- Ladders, ramps, or other safe means of access or egress for any excavation deeper than four (4) feet is required. Whatever safe means of egress is used, it will be located at intervals with no more than 25 feet of lateral travel distance from employees (Refer to HSE Policy – *Excavation and Trenching*).
- Never use a ladder as a brace, skid, lever, guy or gin pole, gangway, platform, scaffold, plan, material hoist, or for any other use for which it was not intended.
- When ascending or descending a ladder, the user shall face the ladder and shall use at least one hand to grasp the ladder. The user **SHALL NOT** carry any object or load that could cause him/her to lose balance and fall.
- Always maintain a 3-point (two hands and a foot, or two feet and a hand while facing the ladder) contact on the ladder when ascending and descending. Keep your body near the middle of the step and always face the ladder while climbing.
- You must be tied-off if working 4 feet or above and when working elevated if within six (6) feet of a handrail.
- Hoist tools or other materials up after you have reached the top of the ladder.

- Wear a tool belt to help you manage tools while you are working on a ladder. **DO NOT** carry objects or loads that could cause loss of balance and falling.
- All tools and materials shall be hauled up in a tool bucket or similar container or placed in tool belts rather than be carried up by hand.
- Work within the siderails. If your belt buckle goes past the side rail, you are leaning too far. Descend and move the ladder as needed to stay close to your work.
- Ladders used in doorways, passageways, driveways, or other areas where they could be displaced by workplace activities or traffic **NEED** to be secured, barricaded, or have warning signs posted to keep disturbances away. Where a door could open into a ladder, either block the door open, keep the door locked, or have someone guard the base of the ladder.
- Double-cleated ladders or two or more ladders must be provided when ladders are the only way to enter or exit a work area where 25 or more employees work or when a ladder serves simultaneous two-way traffic.
- Ladder rungs, cleats, and steps **MUST** be parallel, level, and uniformly spaced when the ladder is in position for use.
- Rungs, cleats, and steps of portable and fixed ladders (except as provided below) must not be spaced less than 10 inches (25 cm) apart, nor more than 14 inches (36 cm) apart, along the ladder's side rails.
- Rungs, cleats, and steps of step stools **MUST** not be less than 8 inches (20 cm) apart, nor more than 12 inches (31 cm) apart, between center lines of the rungs, cleats, and steps.
- Rungs, cleats, and steps at the base section of extension trestle ladders must not be less than 8 inches (20 cm) nor more than 18 inches (46 cm) apart, between center lines of the rungs, cleats, and steps. The rung spacing on the extension section must not be less than 6 inches (15 cm) nor more than 12 inches (31 cm).
- Ladders **MUST** not be tied or fastened together to create longer sections unless they are specifically designed for such use.
- When splicing side rails, the resulting side rail must be equivalent in strength to a one-piece side rail made of the same material.
- Two or more separate ladders used to reach an elevated work area must be offset with a platform or landing between the ladders, **EXCEPT** when portable ladders are used to gain access to fixed ladders.
- Ladder components must be surfaced to prevent snagging of clothing and injury from punctures or lacerations.
- Wood ladders **MUST** not be coated with any opaque covering except for identification or warning labels, which may be placed only on one face of a side rail.
- A competent person must inspect ladders for visible defects periodically and after any incident that could affect their safe use. Ladders **SHALL** be inspected by a competent person and approved for use before being placed in service.

Lead

Lead is a heavy metal that can cause serious health problems if inhaled or ingested in significant concentrations (Refer to HSE Policy – *Lead Awareness*). Most lead exposure comes from soldering, servicing ductwork, welding, and flame-torch cutting, or grinding on surfaces with painted with lead-based paint (Refer to HSE Policies – *Lead Awareness*, *Lead Abatement and Removal*, and *Welding, Cutting, and Hot Work*). Lead is also found in many electrical applications, including lead sheath, high voltage cable, and lead anchors. Work involving the removal or disturbance of any lead-based products that would cause YATES LINE CO. employees or subcontractors to be exposed to lead above the OSHA permissible exposure limit (PEL) requires training, engineering controls, medical monitoring, air sampling, and personal protective equipment (Refer to HSE Policies – *Lead Awareness*, *Lead Abatement/Removal*, *Respiratory Protection*, and *Personal Protective Equipment*).

In accordance with OSHA 29 CFR 1910.1025, the PEL (Permissible Exposure Level) is 50 micrograms per cubic meter (50 µg/m³) of air averaged over an 8-hour period. An employee shall not be exposed above the PEL for lead averaged over an 8-hour period. For both construction and general industry, OSHA sets not just a permissible exposure limit, but what it calls an action level for lead. If employees are exposed to 30 micrograms of lead in the air over an eight-hour day, without wearing a respirator, employers must meet various OSHA regulatory requirements (Refer to HSE Policies - *Lead Awareness, Lead Abatement/Removal, Respiratory Protection, and Personal Protective Equipment*). These include:

- Monitoring the air around the affected employees to determine lead levels.
- Giving blood tests to affected employees to determine blood lead levels.
- Providing a thorough medical exam before assigning an employee to a lead-containing area.
- Initiating efforts to reduce employee exposure.

If exposure to lead is at or above the action level 30 or more days per year, an affected employee's blood must be tested for lead at least every six (6) months.

Protection Against Overexposure to Lead

- Wear gloves and wash hands when working with lead cable, lead anchors, or sheathing.
- When working with or near a painted surface that will be disturbed, inform the immediate supervisor if the paint could potentially contain lead.
- If you **MUST** work with a lead hazard, or the possibility of one, use wet methods, if you can, to keep down any dust.
- Before you use a torch for cutting, safely remove lead paint. Heating lead paint will produce lead fumes.
- Use long-handled torches to keep your distance.
- Use local-exhaust ventilation.
- Depending on exposure levels, respiratory protection may be required (Refer to HSE Policy – *Respiratory Protection*).
- When respiratory protection is required, be sure that you have the required training and proper respirator before starting work.
- **NEVER** smoke, eat, or drink in work areas that contain lead products.
- **ALWAYS** wash your hands and face to remove any lead dust before smoking, eating, drinking, or going to the bathroom.

Lockout/Tagout

Lockout/Tagout (LOTO) is a method of energy isolation used to control hazardous energy during the servicing or maintenance of machines, power tools, and equipment. YATES LINE CO. employees and subcontractors must be trained to the authorized worker level prior to performing LOTO (Refer to HSE Policy - *Lockout/Tagout*).

General

Types of hazardous energy include:

- Electrical
- Mechanical
- Pneumatic

- Hydraulic
- Thermal
- Chemical
- Water

YATES LINE CO. and its subcontractors require that ALL equipment SHALL BE LOCKED OUT AND TAGGED OUT to protect against accidental or inadvertent start-up or operation when such equipment is being serviced (Refer to HSE Policy – *Lockout/Tagout*).

- Each person assigned to work on machines or equipment requiring lockout **SHALL** place a lockout/tagout padlock on the energy-isolating device(s). When an energy-isolating device cannot accept multiple locks or tags, a multiple lockout hasp or lock box **SHALL** be used.
- If an energy-isolating device is capable of being locked out, it **MUST** be locked out.
- When an energy-isolating device is not capable of accepting a lockout device, then and only then will a tagout program alone be utilized. However, when this is the case, the tagout device **SHALL** be attached at the same location that a lock would have been and the tagout system **MUST** provide a level of safety equivalent to that obtained by using a lockout program.
- YATES LINE CO. employees who will be performing lockout/tagout will be issued lockout padlocks and will be tracked.
- Report lost or stolen padlocks to your immediate supervisor or the safety department.
- **ONLY** use the personal lockout/tagout padlock and tags issued to you.
- **DO NOT** use another person's padlock.
- **DO NOT** use a customer's padlock unless authorized to do so.
- **ALWAYS** attach and remove your own lock. Do not have someone else do it for you.
- **DO NOT** attach your padlock to the last hole of the group lock box or scissor multi-hasps. Instead, use another scissor multi-hasps to attach your padlock. It is important that you **DO NOT** use the last slot as someone behind you may need to lock out also.
- **DO NOT** use locks and tags for any other purpose other than lockout/tagout.
- **DO NOT** leave the key inside the padlock. You **MUST** be always in control of your own key. **ALWAYS** keep your key with you.
- **NEVER** tamper with or remove another person's padlock.
- A LOTO Removal Form must be utilized to remove a YATES LINE CO. employee's lock from a lockbox. That employee must be informed that his/her lock has been removed from the system.
- Confined Space Attendant and Fire Watch are required to place their locks on the group lockbox as well as the rest of the crew (Refer to HSE Policies – *Lockout/Tagout*, *Confined Space*, and *Welding, Cutting, and Hot Work*).
- Unless the customer instructs differently and such as process is approved by YATES LINE CO., you must remove your lock at the end of the day. Only the foreman or lead journeyman is allowed to leave their locks on at the end of the day to ensure the system is secured from being re-energized.
- Confirm the piece of equipment is the right one to be working on.

Sequence of a Lockout/Tagout System Procedure

- **Prepare for shutdown:** Before an authorized or affected employee turns off a machine or equipment, the authorized employee shall have knowledge of the type and magnitude of the energy, the hazards of the energy to be controlled, and the method or means to control the energy. All written LOTO procedures must be followed to ensure proper LOTO steps have been taken.

- **Notification of affected and authorized employees:** All affected and authorized employees **SHALL** be notified that a lockout or tagout system is going to be utilized, the equipment to be involved, and the reason(s) why. Authorized personnel **SHALL** be informed of the energy source(s) to be controlled, and the methods or means to control the energy. Notification **SHALL** be given before the energy controls are put in place, and after the energy controls are removed.
- It is critical to communicate with affected, authorized, and other personnel before the energy controls are removed for safety coordination purposes.
- **Equipment or machine shut down:** Shut off or shut down the equipment or machine using the procedures established for the equipment or machine.
- **Equipment or machine isolation:** Identify and release the points of energy distribution and isolate all energy from the equipment to be worked on. Position the switch, valve, or other energy-isolating device(s) to the “off” or “open” position so that the equipment is isolated from the energy source(s). Stored energy (such as that in capacitors, springs, elevated machine members, rotating flywheels, hydraulic systems and air, gas, steam, or water pressure, etc.) **SHALL** be dissipated or restrained by a method such as repositioning, blocking, bleeding down, etc.
- **Single Source Lockout:** A machine or piece of equipment that has a single energy source that can be readily identified and isolated, i.e.:
 - Circuit breaker in electrical panel for light fixtures.
 - Fans.
 - Sump pumps.
 - Instrumentation.
 - Heating, Ventilation, Air Condition (HVAC) Systems.
 - Electric Motors.
- **Apply lockout or tagout device(s):** Lockout or tagout devices **SHALL** be affixed to each energy– isolating device by authorized employees. The position of each energy– isolating device **SHALL** be in the “off” or safe position.
- **Verification of isolation:** Prior to starting work, an authorized employee will verify that isolation and de-energizing of the equipment or machine has been accomplished. This **SHALL** be performed by trying to energize the system by its normal method and testing de-energizing with a meter. YATES LINE CO.'s policy is that the verification process will be performed by at least two trained employees (Refer to HSE Policy – *Lockout/Tagout*).
- **Return to Service:** Before lockout or tagout devices are removed and energy is restored, authorized employees **SHALL** ensure the following:
 - **Equipment or machine inspection.** Inspect the work area to ensure that non-essential items have been removed and to ensure that machine or equipment components are operationally intact.
 - **Employees.** Verify that all employees have been safely positioned or removed.
 - **Notification.** After lockout and/or tagout devices have been removed, and before the equipment is started, affected and authorized employees **SHALL** be notified that the lockout devices have been removed.
 - **Removal of personnel lockout/tagout padlocks:** Each personnel lockout/tagout padlock **SHALL** be removed by the employee who applied the padlock. When the authorized employee who applied the lockout/tagout padlock is not available to remove it, that padlock may be removed under the direction of YATES LINE CO. supervision.
 - Verification has been made that the employee who applied the lock is not at the facility.
 - All reasonable efforts have been made to contact the employee to inform them that the lock was removed.
 - Inform the employee that their lock was removed before they resume work at the site or facility on their next shift.

Shift or Personnel Changes

When work necessitating a lockout/tagout is not completed on a given shift and work continues into the next shift, off-going personnel involved **SHALL** remove their lockout/tagout padlocks and on-coming personnel **SHALL** monitor these situations and if necessary, install their own locks (Refer to HSE Policy – *Lockout/Tagout*).

Group Lockout Boxes

If group lockout boxes are utilized, the authorized employee in charge of the lockout procedures for a specific piece of equipment has the prime responsibility for monitoring and managing the group lockout procedures. This includes notification, isolation processes, lockout devices, verification of energy isolation, and padlock removal.

Keys to padlock(s) that isolate energy for the equipment or machinery will be placed into the group lockout box. Each authorized employee(s) **SHALL** affix his/her own personal padlock onto the group lockout box before beginning work and **SHALL** remove his/her padlock when work is complete (Refer to HSE Policy – *Lockout/Tagout*).

Manual Lifting

Back injuries account for many workplace incidents and accidents. Proper controls and lifting techniques can avoid such injuries. Identify **the hazards BEFORE you attempt to lift!** (Refer to HSE Policy – *Manual Lifting*).

- Do you have the proper gloves for lifting tools and materials? Are they in good condition? Slick gloves will not provide the proper grip.
- Is the load too heavy or awkward for one person?
- Are there protruding objects from the load such as nails, splinters, sharp edges, or rough strapping?
- Is the path of travel flat and clear of obstructions?
- Are you using proper lifting techniques?

YATES LINE CO. policy is for one person to never lift a load by his/herself that weighs more than 50 pounds (Refer to HSE Policy – *Manual Lifting*). Loads 50 pounds or less may be lifted by single person:

- If the object is at waist height and directly in front of the person performing the lift.
- If the object is within 7 inches from the front of his or her body.
- If there is no twisting involved in the lift.
- If there is a handle on the object.
- If the load inside doesn't shift once lifted.
- Face the load with feet shoulder width apart.
- Keep heels down and toes pointed slightly out.
- Squat by bending at the hips.
- Use leg and stomach muscles to power the lift.
- Maintain the back's natural curves when lifting by keeping the head up.
- Keep your nose between your toes. In other words, don't twist while lifting.
- Test the weight of the object. If it is too heavy, ask for assistance or use material handling equipment.
- If any of the conditions listed above are not met, then the load would be considered "unsafe" and modifications must be made to make the lift "safe" to include but may not be limited to decreasing the weight of the load, using a two-person lift, or using mechanical assistance such as a dolly, cart, forklift, etc.
- Perform stretches before lifting to prepare your body muscles for lifting.

- When possible, avoid physical lifting. When necessary, test the load and ask for help.
- Utilize the correct material handling equipment for the job. Use chain hoists, dollies, or mobilized equipment as lift aids.
- Keep the load as close to the body as possible.
- Stand close to the load with your feet spread apart about shoulder width, with one foot slightly in front of the other for balance.
- Squat down bending at the knees, not your waist. Tuck your chin while keeping your back as vertical as possible.
- Don't hold your breath! Every time you breathe in and out it flexes and extends your spine. Keep your breathing long and strong as opposed to stressed and shallow. When you lift, you should **ALWAYS** breathe out as this decreases the pressure on your spinal discs and helps prevent injury.
- Get a firm grasp on the object before beginning the lift.
- Begin by slowly lifting with your legs. **NEVER** twist your body while lifting.
- Once the lift is complete, keep the object as close to your body as possible. As the load's center of gravity moves away from the body, there is a dramatic increase of force to the lumbar region of the back.
- **NEVER** twist your waist while carrying the load. Turn your body by using your feet.
- When lifting with another person, give verbal instructions clearly – say "lift", "walk", "set down", etc.
- When two or more employees are carrying an object, each employee should face the direction of travel when possible.
- Walk around and use back-bending and/or stomach-lying stretching positions before or after bending or heavy lifting, especially if you have been sitting for a long period of time.

Machine Guarding

Moving machine parts have the potential to cause severe workplace injuries, such as crushed fingers or hands, amputations, burns, or blindness (Refer to HSE Policy – *Machine Guarding*). Safeguards are essential for protecting workers from these preventable injuries. Any machine part, function, or process that may cause injury must be safeguarded. When the operation of a machine or accidental contact may injure the operator or others in the vicinity, the hazards must be eliminated or controlled.

Different types of hazardous mechanical motions include rotating, reciprocating, transversing, cutting, punching, shearing, bending, and in-running nip points. Various types of protection of personnel from the hazards include guards, safeguarding devices, awareness devices, safeguarding methods, and safe work procedures.

- Clothing, jewelry, long hair, and even gloves can get entangled in moving machine parts. Be always aware of body position and line of fire.
- **DO NOT** stand or walk on top of conveyors at any time.
- All equipment guards and safety devices **SHALL** be kept in place and in proper working conditions.
- Guards removed to perform service or maintenance **SHALL** be relaced immediately upon completion of such activities, and the equipment **SHALL NOT** be operated while the guards are removed (except for maintenance/testing verification) (Refer to HSE Policy – *Lockout/Tagout*).
- No moving machinery **SHALL** be cleaned or repaired until proper energy isolating procedures have been implemented.

Noise Exposure and Hearing Conservation

YATES LINE CO. provides a wide variety of hearing protection devices, at no cost to employees, such as several types of ear plugs, ear bands, and/or earmuffs. Hearing protection **MUST** be worn when noise levels are at or exceed 90 dBA on an 8-hour time weighted average (Refer to HSE Policies – *Personal Protective Equipment* and *Noise Exposure and Hearing Conservation*). Look for posted signage in buildings and designated areas indicating that the wearing of hearing protection is required. Generally, if you must raise your voice to be heard by someone two (2) feet or closer to you, then hearing protection should be worn. When performing tasks with hand and power tools such as grinders, thread cutters, cutting torches and the like, one should always wear hearing protection. Double hearing protection (e.g., earplugs and earmuffs) **MUST** be worn in areas where the noise exposure is 104 dBA or above. When working in food producing facilities, earplugs **MUST** be secured to your hardhat per federal regulations.

Permit to Work

YATES LINE CO. performs many hazardous tasks that are covered under permit systems. Permits are utilized to ensure all hazards have been identified, eliminated, or controlled prior to work beginning. All workers have the responsibility to read and understand any permit required by the type of work contemplated to be performed. Any questions or permit deficiencies must be addressed, answered, and reviewed by all interested parties during the pre-job meeting. No YATES LINE CO. employee or subcontractor is allowed to start work **BEFORE** the completion of appropriate permitting.

Preventative Maintenance

YATES LINE CO. uses a preventative maintenance management system to maximize the useful life of all buildings and equipment (Refer to HSE Policy – *Preventative Maintenance*). Preventative maintenance efforts range from visual inspections only to performance testing and analysis; from minor adjustment, clearing, and/or lubrication to complete overhauls; from recondition to components replacement. The program is intended to protect community assets and extend the life of equipment, enabling YATES LINE CO. to provide uninterrupted and quality service to its customers and clients. YATES LINE CO. requires that an inventory of all machinery and equipment be kept and maintained. When new machinery or equipment is acquired, it must be added to the inventory.

YATES LINE CO. is committed to providing all the necessary tools, manuals, parts, supplies, and manpower to perform scheduled assignments of the preventative maintenance program. All equipment will be included in the preventative maintenance program and routine inspections conducted to ensure proper maintenance is being performed. Scheduling of inspections will be programmed to cover equipment inventoried within a time frame conducive to good mechanical operation and physical appearance. All preventative maintenance will be performed in accordance with accepted industry standards and work/safety practices. Training on maintenance and safety is provided as part of new employee orientation.

Protection from Wildfire Smoke

To protect workers from the hazards of wildfire smoke, YATES LINE CO. has instituted regulatory required policies when there is a heightened level of wildfire smoke exposure and where the Air Quality Index (AQI) for PM2.5 exceeds 150. Employees exposed to these levels are at risk of experiencing negative health effects from breathing in hazardous chemicals. It is YATES LINE CO.'s policy to reduce employee exposure to harmful respiratory hazards when wildfire smoke causes the quality of the air to become unhealthy (Refer to HSE Policies – *Protection from Wildfire Smoke* and *Respiratory Protection*).

YATES LINE CO. will protect employees from wildfire smoke and will take action to protect employees from PM2.5 when the current AQI is 151 or higher via engineering controls when feasible. Examples include:

- Informing employees of the current AQI for PM2.5 and providing protective measures available to employees to reduce their wildfire smoke exposure.
- Locating work in enclosed buildings, structures, or vehicles where the air is filtered.
- Changing procedures such as moving workers to a place with a lower current AQI for PM2.5.
- Reducing work time in areas with unfiltered air.
- Increasing rest time and frequency and providing a rest area with filtered air.
- Reducing the physical intensity of the work to help lower the breathing and heart rates.
- Encouraging employees to inform YATES LINE CO. of worsening air quality and any adverse symptoms that may be the result of wildfire smoke exposure such as asthma attacks, difficulty breathing, and chest pain.

Respirator Use

Respirators can be effective in protecting employee health by reducing wildfire smoke exposure when worn and selected properly (Refer to HSE Policy – *Respiratory Protection*). When the current AQI for PM2.5 is 151 or greater but less than 500, YATES LINE CO. will provide NIOSH approved N-95 respirators to employees for voluntary use at no cost to the employee and will encourage the use of respirators. When the current AQI is greater than 500, respirator use shall be required, except in emergencies.

Respiratory Protection

Proper respiratory protection can protect workers from inhaling dangerous chemicals and substances that can cause serious injury and possible death (Refer the HSE Policy – *Respiratory Protection*). Respirator selection is the responsibility of the safety department. Only those respirators that have been approved by the safety department and the company's respiratory protection program administrator may be worn by YATES LINE CO. employees (Refer the HSE Policy – *Respiratory Protection*).

Employees and subcontractors required to wear respirators **MUST** comply with the following safe work practices:

- Employees and subcontractors must be medically cleared to wear a respirator.
- Employees and subcontractors must be fit tested to ensure proper fit.
- Employees and subcontractors must receive appropriate respirator training annually.
- Approved respiratory equipment **SHALL** be worn when there is a potential exposure to harmful airborne particles, contaminants, vapors, or gases above established acceptable exposure limits or oxygen deficiencies in the work area.
- YATES LINE CO. supplies all respirator protection at no cost to YATES LINE CO. employees. Only trained and qualified employees will be allowed to wear respirators. Respirators are selected by YATES LINE CO. based on a hazard assessment according to internal policies and National Institute for Occupational Safety and Health (NIOSH) guidelines. Employees **MUST** only wear the respiratory protection selected by YATES LINE CO. for the job.
- A full-face respirator is required when performing a line break that has the potential for acids, corrosive chemicals, steam, etc.
- Facial hair is not permitted between the skin and the respirator seal. Employees and subcontractors **MUST** be clean shaven when wearing a respirator.

- Employees and subcontractors **MUST** only wear respirators for which they have been properly fitted for use. For example, **DO NOT** wear a full-face respirator, if you have only been fit-tested for a half-mask respirator.
- Respirators must be checked for a good fit before each use. Positive and negative seal checks **MUST** be conducted before each use (Refer to HSE Policy – *Respiratory Protection*).
- **NEVER** wear a defective respirator.
- Employees and subcontractors are expected to inspect and clean the respirator according to the manufacturer's instruction after each use. Thoroughly dry the respirator and place it in sealed storage.
- Respirator cartridges must be changed after each use.
- Store respirators carefully in closed storage in a protected location away from excessive temperatures, excessive moisture, light, dust, and chemicals.
- The voluntary use of dust masks is encouraged whenever an employee or subcontractor desires to provide an additional level of comfort and protection from nuisance dust.
- Employees and subcontractors **MUST** read and follow all instructions provided by the manufacturer on use, maintenance, care, and all warnings regarding the respirator's limitations.

Scaffolds

YATES LINE CO. policy states that only employees and subcontractors who are trained in scaffold use are allowed to work on scaffolds (Refer to HSE Policy – *Scaffolds*). Only those employees and subcontractors who are qualified scaffold builders may erect scaffolding and only those employees and subcontractors who are deemed competent may inspect scaffolding (Refer the HSE Policy – *Scaffolds*).

General Scaffolding Safety Requirements:

- **WARNING:** Serious injury or death can result from improper use of electrical equipment while performing work activities from scaffolds. **ALWAYS** be alert for electrical hazards, maintain minimum clearance distances, and follow safe electrical work practices and procedures.
- Only trained employees and subcontractors **SHALL** use scaffolding.
- All scaffolding **MUST** be erected, maintained, and inspected to conform to OSHA standards.
- Each scaffold **MUST** be inspected and approved by a competent person prior to use each work shift. This daily inspection **MUST** be documented on the scaffold inspection tag.
 - **RED TAG: DO NOT USE.** The scaffold is either in the process of being erected or dismantled, or it has not passed inspection.
 - **YELLOW TAG: 100% TIE-OFF is required.** The scaffold is safe to work on, but fall protection is required due to missing guardrail components, or other potential fall hazards.
 - **GREEN TAG:** Has all of the required guardrail components and does not require fall protection when working on the scaffold.
- Any damaged or missing scaffold components **SHALL** be brought to the attention of the competent person who is responsible for the daily inspection of the scaffold. The scaffold cannot be used until such deficiencies are corrected.
- Scaffolds **SHALL** be capable of supporting at least four times the maximum intended load. **DO NOT** overload scaffolds. Materials should be brought up as needed.

- When the height of scaffolding exceeds four times its minimum base width, it **MUST** be tied back or secured to the structure.
- There are three different load ratings for scaffolds:
 - **Light Duty** = 25 pounds per square foot on working surface.
 - **Medium Duty** = 50 pounds per square foot on working surface.
 - **Heavy Duty** = 75 pounds per square foot on working surface.
- Always calculate the duty rating of scaffolds to include employees and expected load weight of materials and tools. Take the scaffold width times the length. That sum is then multiplied by the duty rating. On a 5-foot x 7-foot light duty scaffold the maximum load rating equals 875 pounds.
- The scaffold legs **MUST** be placed on a solid surface. Scaffold legs **MUST** rest on adjustable screw jacks with base plates. The base plates are to be set on wooden pads called mud sills. The base plates **MUST** be secured to the mudsills. The only place that does not require mud sills is on concrete.
- Each section of the scaffold **MUST** be plumb, square, and rigid. Cross-bracing components are to be installed for strength and stability.
- OSHA requires a guardrail system to be installed on all supported scaffold platforms 10 feet or more in height. This is measured from the ground to the platform deck. However, guardrail systems should be installed on all platforms at any height.
- Working platforms are to be fully planked with maximum spacing gaps of no more than 1" between planks.
- Only scaffold grade planking bearing a grade stamp or label is to be used. The planks are to be secured to the support bracing.
- Scaffold planks **MUST** be secured and extend over the end supports at least six inches but not more than twelve inches.
- Toeboards are to be a minimum of 3-1/2" high and **MUST** be installed along the edges of platforms 10 or more feet in height.
- Where there is a danger of tools, materials, or equipment falling from a scaffold and striking employees below, the area below the scaffold **SHALL** be barricaded to prevent entry into the area and injury to others.
- Supplies or materials packaged in bags, containers, or bundles should be stacked, blocked, and interlocked to avoid sliding, shifting, or collapse.
- Supplies and materials should be stacked to a height as low as practical.
- **DO NOT** lower materials or tools from any scaffold platform without being positive that no one is located below.
- Tie off to vertical scaffold member is allowed as long as the scaffold has been erected according to manufacturer's recommendations and approved.
- The manufacturer's recommended attachable component ladders are to be installed to provide access to each working platform. **NEVER** climb on the cross-bracing of a scaffold.
- Scaffold ladder access areas **SHALL** be kept clear of obstructions and free from dirt and debris to avoid slip and trip hazards.
- When climbing up or down scaffold ladders, face the ladder rungs and use both hands. **DO NOT** carry materials up the ladder.

Silica Exposure Control

The most common silica dust generating tasks often include drilling holes in concrete ceilings or beams to install pipe and duct hangers and cutting or boring holes in concrete floors, walls, and ceilings to run pipe and duct (Refer to HSE Policy –

Silica Exposure Control). It is important that all workers be familiar with all activities that could generate respirable silica dust, even if they are not performing the task themselves. This prevents overexposure to respirable silica generated by other trades and crafts. For example, if fitters are hanging pipe in an area being used by masons to cut brick and block, there is the potential for overexposure to the fitters and any other worker in the area. The construction activities that are most capable of generating respirable silica dust when performed on silica-containing materials are those that result in cutting, pounding, scraping, grinding or otherwise pulverizing material that contains silica (Refer to HSE Policy – *Silica Exposure Control*).

Respirable silica can lead to silicosis when inhaled over a long period of time. The symptoms of silicosis usually take years to develop, and workers may not notice any problems until after they have stopped working with silica dust. In most cases, exposure for at least ten (10) to twenty (20) years is required to cause the condition, although in a few cases it can develop after five (5) years to ten (10) years of exposure, or in rare cases, only a few months after very heavy exposure.

Once inside the lungs, respirable silica causes swelling (inflammation) and gradually leads to areas of hardening and scarred lung tissue (fibrosis). This causes lung tissue to not function properly and can lead to serious illness and possibly death.

The key to preventing worker exposure is to keep respirable silica dust out of the air. Dust controls can be as simple as a water hose to wet the dust before it becomes airborne. YATES LINE CO. employees and subcontractors should refer to HSE Policy – *Silica Exposure Control* for additional information.

The following general safety rules apply:

- Every YATES LINE CO. jobsite will be assessed by a competent person (foreman, lead journeyman, safety, etc.) for respirable silica dust. These hazards could be created either from YATES LINE CO. personnel performing their job tasks or those created by others. Determine when silica dust may be generated and plan to eliminate or control the dust at the source.
- Use OSHA CFR §1926.1153 Table 1. Engineering controls will be put into place to reduce the amount of respirable silica into the atmosphere.
- Engineering controls such as local exhaust ventilation (with dust collectors) or wet methods may be used to prevent the release of dust into the air.
- When cutting, drilling, sawing, cleaning, etc., use the wet method whenever possible. When the wet method cannot be used or is not allowed, vacuums with HEPA or approved filters, hollow drill bits, etc., will be used.
- Use the dust collection systems available for many types of dust-generating equipment and tools. When purchasing tools, look for dust controls.
- YATES LINE CO. employees and subcontractors will operate and maintain tools with manufacturer's instructions to minimize dust exposure during work, disposal of dust, and keep them in good working order.
- **DO NOT** use equipment if the dust control system is not working properly.
- Use equipment that provides water to the blade or grinder when sawing or grinding concrete or masonry. Be sure to only use blades and abrasive wheels that are rated as safe for use with water.
- Minimize exposures to nearby workers by using good work practices, such as marking and posting the boundaries of work areas where exposure to airborne dust can occur.
- **DO NOT** cause dust to become airborne during clean-up. Remove dust from equipment with a water hose or wet-wiping rather than with compressed air (Refer to HSE Policies – *Compressed Air* and *Silica Exposure Control*).
- Schedule work for workers when dust exposure is a minimum.
- Wear disposable or washable protective clothes at the worksite.

- Shower if possible and change into clean clothes before leaving the worksite to prevent contamination of cars, homes, and other work areas.
- Use OSHA 1926.1153 Table 1 to determine the proper level of PPE and respiratory protection when engineering controls cannot keep silica exposures below the OSHA Permissible Exposure Limit (PEL).
- Respirators should not be the primary method of protection. If engineering controls cannot keep dust levels below the OSHA PEL, then half-mask or N-95 respirators must be used. PPE is always the last resort.
- Provide workers with training that includes information about health effects, work practices, and protective equipment for respirable crystalline silica.

Traffic Safety – Internal and External

Work zones face a serious challenge of providing a safe workplace while ensuring the safe movement of traffic through the work area. Roadways within and around utility plant operations require that layouts of the workplace be carefully considered to effectively separate pedestrians, vehicles, and powered mobile plants. YATES LINE CO. will establish and maintain safe access and egress points provided for work vehicles, personal vehicles, and pedestrians, including visitors. Pedestrians shall be located as far as possible from vehicle paths. Parking, toilet, and break areas shall be staged away from principal conflict points involved with construction equipment.

Roads and pathways within the workplace shall be suitable for the types and volumes of traffic. The paths for truck and construction vehicle movement should be planned in conformance with the principles of safe construction traffic control. Long backing maneuvers for large trucks should be avoided and points of access and egress for trucks moving within the workspace should be controlled.

Flaggers for YATES LINE CO. will be certified and/or properly trained. YATES LINE CO. will ensure the following standard is followed: 1926.201(a) Signaling by flaggers and the use of flaggers, including warning garments worn by flaggers, shall conform to Part 6 of the MUTCD (incorporated by reference, see §1926.6). MUTCD-Section 6E.02 High-Visibility Safety Apparel For daytime and nighttime activity. Flaggers shall wear high-visibility safety apparel that meets the Performance Class 2 or 3 requirements of the ANSI/ISEA107–2004 publication entitled "American National Standard for High-Visibility Apparel and Headwear" (see Section 1A.11) and labeled as meeting the ANSI 107-2004 standard performance for Class 2 or 3 risk exposure. The apparel background (outer) material color shall be fluorescent orange-red, fluorescent yellow-green, or a combination of the two as defined in the ANSI standard. The retroreflective material shall be orange, yellow, white, silver, yellow-green, or a fluorescent version of these colors, and shall be visible at a minimum distance of 1,000 feet. The retroreflective safety apparel shall be designed to clearly identify the wearer as a person.

Welding, Cutting, Hot Work

Welding, brazing, cutting, and grinding or similar spark producing activities during fabrication and construction are commonly referred to as "HOT WORK". Due the high temperatures involved and the potential for fire and serious personal injury and death, specific procedures must be followed to ensure that work activities are performed safely (Refer to HSE Policy – *Welding, Cutting, and Hot Work*).

General Requirements for Hot Work Activities:

- When required, obtain a hot work permit for all welding, brazing, cutting, and grinding operations. No hot work will commence until all applicable permits have been obtained and approved.

- All hot work activities **SHALL** only be performed by qualified employees.
- All employees involved in hot work activities **SHALL** wear appropriate personal protective clothing and eye/face protection.
- **ALWAYS** ensure that the ventilation is adequate before you start welding or cutting operations. Approved respiratory protection equipment may be required if adequate ventilation cannot be achieved. (Refer to HSE Policies – *Respiratory Protection*, *Personal Protective Equipment*, and *Welding, Cutting and Hot Work*).
- A fire watch **SHALL** be provided as required by location procedures and **SHALL** be maintained for at least 30 minutes after completion of the job.
- Suitable fire extinguishing equipment **SHALL** be immediately available in all areas where hot work activities are performed. **DO NOT** proceed with any hot work activities without a fire extinguisher or water hose that is immediately accessible.
- Welding and cutting operations **SHALL** be shielded by noncombustible or flameproof screens, which will protect employees and other persons working in the vicinity from direct rays of the arc and sparks.
- OSHA states that combustible materials within a 35-foot radius of the hot work to be performed **SHALL** either be moved or protected.
- Consideration **SHALL** be given to open flooring and grating to make sure that combustibles on lower levels are shielded or protected.
- Spark containment **SHALL** be utilized during all welding, burning, and grinding operations. Spark containment may include laying fire blankets, placing barricades, using 100% spark containment, or using a fire watch.
- Employees working around or below the welding, burning, or grinding operation **SHALL** be protected from falling or flying sparks.
- Welding cables and gas hoses **SHALL** be positioned to minimize possible damage and to eliminate potential tripping hazards to personnel.
- Welding cables **SHALL NOT** have connectors or repairs within 10 feet of the electrode holder.
- Welding cables may only be repaired by using specifically designed heat-shrink tape.
- Welding and cutting assemblies **SHALL** be equipped with flashback protective equipment.

Working Alone

Working alone in certain circumstances, situations, or environments can increase risk to the health and safety of workers (Refer to HSE Policy – *Working Alone*). Special arrangements must be made for YATES LINE CO. employees to work alone, especially after normal working hours. Certain jobs and tasks should not be completed by an employee or subcontractor working alone. These tasks may include factors such as:

- Extreme heights
- The use of fall protection
- The use of respiratory equipment
- The operation of power-lift equipment
- Entry into confined spaces
- The use of hazardous substances and materials
- The use of high voltage electricity
- Performing Hot Work

When performing the above tasks or activities, YATES LINE CO. requires that employees and subcontractors not perform work alone, without express approval of YATES LINE CO. management (Refer to HSE Policy – *Working Alone*). YATES

LINE CO. will complete an appropriate hazard assessment prior to approving employees and subcontractors to work alone in high hazard environments.

Workplace Violence

YATES LINE CO. is committed to ensuring adequate safety for the security of its employees. While YATES LINE CO. is proud of its safe workplaces, we are concerned about the reality of violence in society and its potential occurrence in our workplaces. In recent years, we have all become more aware of violence and threatening behavior in American workplaces. Violence in the workplace can have devastating effects on the productivity of organizations and on the quality of life of employees.

We must take all reasonable steps to protect ourselves and others in the workplace from violent incidents that may result in injury or harm and to protect company and personal property. By working together, we can ensure that the YATES LINE CO. establishes and maintains a work environment that is safe and healthy for all.

All employees are responsible for maintaining a safe work environment. Acts of violence or threats of violence, either explicit or veiled, verbal or written, are unacceptable and will not be tolerated in the workplace. This includes harassment, intimidation, and other disruptive behavior. All reports of incidents will be taken seriously and will be dealt with appropriately. Further, possession of firearms, ammunition, and dangerous or deadly weapons in YATES LINE CO. controlled or occupied space is prohibited.

Threatening Behavior is an individual's threat, either overt or implied, to commit an act of physical aggression or harm at the workplace. Examples include, but are not limited to:

- Threats to cause bodily harm or death to another person (including stalking, bullying, or other abusive or aggressive behavior).
- Threats to commit sabotage or destroy, damage, or deface government or personal property located at the workplace.
- Making harassing or threatening phone calls.
- Unusual, bizarre, or menacing behavior or statements that a reasonable person would interpret as carrying the potential for violent acts.

Workplace violence is any act or attempted act of physical aggression or harm by an individual that occurs at the workplace. Examples include, but are not limited to:

- Causing or attempting to cause bodily harm or death to another person.
- Acting or attempting to sabotage, destroy, damage, or deface government or personal property in the workplace.
- Possession of unlawful and unauthorized weapons in the workplace.

Employees are responsible for reporting threats, suspicious activities, or acts of violence to their supervisor, regardless of the relationship between the individual who initiated the threat or threatening behavior and the person who was threatened or was the focus of the violent behavior. It does not matter when or where the threats occurred. Employees reporting threats shall not be subject to interference, coercion, discrimination, penalty, censure, or reprisal because of these reports. Employees are encouraged to provide their supervisors with updated emergency contact information.