HSE MANUAL

Health Safety & Environmental Management System

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Chapter 1- Introduction

Introduction

State and federal law as well as company policy make the safety and health of our employees the first consideration in operating business. Safety and health must be a part of every operation, and part of every employee's responsibility, at all levels within any successful organization. This HSE Manual outlines the safety expectations for all the Cotton Companies, including but not limited to Cotton Holdings, Inc., Cotton Commercial USA, Inc., and all the related subsidiaries and affiliates (collectively "Cotton" hereafter). It is the intent of Cotton to comply with all laws concerning the operation of the business and the health and safety of our employees and the public. To do this, we must constantly be aware of conditions in all work areas that can produce or lead to injuries. No employee is required to work at a job known to be unsafe or dangerous to his or her health. Your cooperation in detecting hazards and reporting to your supervisor immediately of any situation beyond your ability or authority to correct is mandatory. Employees will not be disciplined or suffer any retaliation for reporting a safety violation in good faith.

Purpose

The personal safety and health of each employee are of primary importance. Prevention of occupationally induced injuries and illnesses is of such consequence that it will be given precedence over operating productivity. To the greatest degree possible, management will provide all mechanical and physical protection required for personal safety and health, but our employees must bear primary responsibility for working safely. A little preparation and caution can prevent most accidents from occurring.

Policy: Individual Cooperation Necessary

Cotton maintains a safety and health program conforming to the best practices of our field. To be successful, such a program must embody proper attitudes towards injury and illness prevention on the part of supervisors and employees. It requires cooperation in all safety and health matters, not only between the employer and employee but also between the employee and all co-workers. Only through such a cooperative effort can a safety program in the best interest of all be established and preserved. Safety is no accident; think safety, act safely, and the job will be safer.

Safety Program Goals

The objective of Cotton is to sustain a safety and health program that will reduce the number of injuries and illnesses to an absolute minimum, not merely in keeping with, but surpassing the best experience of similar operations by others. Our goal is zero accidents and injuries.

Agreement to Participate

Every employer is required to provide a safe and healthful workplace. Cotton is committed to fulfilling this requirement. A safe and healthful workplace is one of the highest priorities of Cotton. The information in this manual constitutes a written injury and illness prevention program. While Cotton cannot anticipate every workplace hazard, the following general principles should guide your conduct. To be safe, you must never stop being safety conscious. Study the guidelines contained in this manual. Discuss the workplace situation with your supervisor. Attend all company-sponsored training, toolbox meetings, and safety meetings. Read all posters and warnings. Listen to instructions carefully. If you do not understand any policy, please ask your supervisor.

Chapter 2 - HSE Policy Statement

HSE POLICY

Cotton is committed to conducting its business in a manner that protects the health and safety of all employees and the public. Our commitment is to maintain a culture that fosters the development of a safe, efficient, and environmentally sound workplace. We will comply with all applicable laws and regulations and apply reasonable standards where laws and regulations do not exist.

PRINCIPLES

Leadership is demonstrated through high expectations and personal ownership, responsibility, and accountability for HSE performance.

Accountability is displayed by each employee by complying with applicable Federal, State, and County/Parish HSE regulations. Employees will adhere to Cotton HSE policies & procedures.

Performance is promoted through positive interaction with people and our environment daily to achieve excellence.

Excellence is advanced through genuine care and compassion for our fellow humans and the environment leading to a strong Safety culture.

Culture is fostered through interpersonal relationships, teamwork, and common beliefs; communicated repeatedly, consistently, and accurately.

MISSION

Cotton's HSE Mission is to promote and assure workplace safety and health while reducing workplace incidents, injuries, and illnesses. We will achieve its Mission through various means, including inspections, consultation services, education, and cooperation with Regulatory agencies.

VALUES

Integrity: We are committed to conducting our business with integrity, respect, and the highest ethical standards.

Teamwork: We are committed to supporting and implementing a team-oriented work environment, ensuring cooperation, communication, and professionalism.

Process: We will continuously challenge existing ideas and best management practices to provide high HSE standards in all of our operations.

HSE COMMITMENT

Our HSE commitment to staff members is simple, yet substantial. We will focus our resources and priorities to ensure Cotton maximizes our effectiveness in HSE by assuring:

No accidents at worksites

No harm to people

No damage to the environment

No damage to Cotton or Customer assets

Cotton staff members will have the RIGHT and the RESPONSIBILITY to STOP WORK without fear of reprisal for any activity that is considered to be an imminent danger (i.e., any condition or behavior that could reasonably be expected to cause death or serious injury, or environmental harm). The Project Manager and HSE Department will be notified immediately.

Chapter 3 - Responsibilities

Management Responsibilities

Management is responsible for major work units, including President, Vice President, PCs, and Safety Managers.

- Be familiar with and comply with the Environmental, Health, and Safety Manual and specific work procedures as they apply to their area of authority.
- Ensure that PMs, APMs, and Safety Specialists are aware of and comply with Company and Client Health and Safety Policies and Procedures and/or Federal, State, and Local Regulations
- Discipline, up to and including termination, of an individual for violations of the company or client HSE programs, policies, procedures, and/or State, Federal, and Local Regulations. Review and manage disciplinary action taken by front-line supervision, resulting from violations of the HSE manual.
- Ensure incident investigations are conducted within the timelines established in this manual.
- Review and approve incident investigation finding in a timely, validating the root cause findings, ensuring that all aspects of the incidents are documented, and implementation of corrective actions is completed.
- Ensure correction of any unsafe conditions or work practices verified through auditing and/or inspection protocols.
- Assist Site Supervision in investigating all incidents promptly. Document all aspects of incidents, identifying the cause and implementing the corrective actions to prevent recurrences.
- Attend training sessions as scheduled.
- Develop required site-specific plans in conjunction with Site Supervision.
- Review the site inspections, auditing, and training documentation to ensure compliance.

On-Site Supervisor Responsibilities

This group includes management responsible for directly supervising workers.

- Be familiar with and comply with the HSE Manual and specific work procedures as they apply to their area of authority.
- Attend all training scheduled.
- Take the lead in reporting and investigating near misses promptly. Ensure the incident procedures are followed including appropriate work stoppage and securing the area. Document all aspects of the incident, identifying the root cause and providing recommendations for corrective actions to prevent recurrences.
- Immediate notifications to HSE departments of significant injuries, incidents, or near misses obtaining support in dealing with incidents investigations.
- Correct any unsafe acts, unsafe conditions, or work practices as verified by audit and/or site inspections.
- Ensure the employees are aware of and comply with the HSE manual and or Client Health and Safety policies, procedures, and/or Federal, State, or Local Laws.

Employee Responsibilities

This includes all individuals, not supervising others, with only personal responsibilities for compliance with this manual.

- Read, understand, and comply with all company policies and procedures.
- Comply with the HSE Program as it pertains to their responsibilities as well as specific work procedures or rules as they apply to work.
- Attend all training as scheduled.
- Report all injuries, incidents, and/or near misses immediately to your supervisor.
- Stop work if unsafe or will result in any unpermitted release of hazardous material or waste to the environment, and immediately notify your supervisor.

HSE Department Responsibilities

This group includes Corporate and site HSE staff as well as On Call HSE representatives.

- Provide management at all levels with the information, advice, and assistance needed to formulate Cotton's health, and safety policy, including directives, procedures, and standards.
- Assist management at all levels in establishing and maintaining a healthful and safe working

environment free from unacceptable risks, conforming to federal health and safety guidelines, and including, but not limited to applicable standards, codes, and regulations.

- Monitor operations within Cotton.
- Develop and provide general safety education and training programs.
- Assist in the development of specific job safety training programs.
- Develop plans and train response personnel to control emergencies (severe weather, radiation, injury, fire, etc.).
- Provide health and safety support services assigned by Operations.
- Maintain a staff of Safety Specialists to support Operations with high-at-risk activities.
- Prepare and maintain Cotton Health and Safety Manual and other documents that relate to safety.
- Specify proper protective equipment for employees.
- Stop operations where a hazard to life or major property damage is imminent and follow with documented evidence.

Chapter 4 – General Safety Requirements

Stop Work Authority

The ability for any employee to immediately stop a job for safety concerns is a vital right all Cotton employees are given. Our Stop Work Authority will include the following:

- All employees have the authority and obligation to stop any task or operation where concerns or questions regarding the control of HSE risk exist.
- No work will resume until all stop-work issues and concerns have been adequately addressed.
- Any form of retribution or intimidation directed at any individual or company for exercising their right to issue a stop work authority will not be tolerated by the host facility.
- Employees are responsible to initiate a Stop Work Intervention when warranted and management is responsible to create a culture where Stop Work Authority is exercised freely.
- When an unsafe condition is identified the Stop Work Intervention will be initiated, coordinated through the supervisor, notify all affected personnel and supervision of the stop work issue, correct the issue, and resume work when safe to do so.
- It is the desired outcome of any Stop Work Intervention that the identified safety concern(s) have been addressed to the satisfaction of all involved persons before the resumption of work. Most issues can be adequately resolved promptly at the job site, occasionally additional investigation and corrective actions may be required to identify and address root causes.

Safety Rules for All Employees

It is the policy of Cotton that everything possible will be done to protect you from accidents, injuries, and/or occupational disease while on the job. Safety is a cooperative undertaking requiring an ever-present safety consciousness on the part of every employee. If an employee is injured, positive action must be taken promptly to see that the employee receives adequate treatment.

No one wants to see a fellow employee injured by an accident. Therefore, all operations must be planned to prevent accidents. To carry out this policy, the following rules will apply:

1. All employees will follow the safe practices and rules contained in this manual and such other rules and practices communicated on the job. A copy and explanation of our policy and rules will be provided at the time of employment.
2. Client rules supersede Cotton rules if they are more stringent. You must know, understand, and practice the safety rules of the client.
3. The supervisor will be responsible for implementing these policies by insisting that employees observe and obey all rules and regulations necessary to maintain a safe workplace and safe work habits and practices.
4. All employees will attend all safety orientations, training, and toolbox safety meetings that are sponsored, offered, or required by clients as well as Cotton.
5. When required, personnel will attend formal safety training such as forklift, respirator, man lift operations, etc.
6. Good housekeeping must be practiced at all times in the work area. Clean up all waste and eliminate any dangers in the work area.
7. Suitable clothing and footwear must be worn at all times.
8. Anyone under the influence of intoxicating liquor or drugs, including prescription drugs, which might impair motor skills and judgment, will not be allowed on the job.
9. Horseplay, scuffling, and other acts which tend to have an adverse influence on the safety or wellbeing of other employees are prohibited.
10. Smoking is permitted only in designated areas.
11. Do not enter any roped-off or barricaded area unless authorized to do so.
12. Use only tools that are in a safe serviceable condition and use them only for the purpose they were designed.
13. No one will be permitted to work while the employee's ability or alertness is so impaired by fatigue, illness, or other causes that it might expose the employee or others to injury.
14. Employees should be alert to see that all guards and other protective devices are in proper places, and adjusted, and will report deficiencies promptly to the supervisor.
15. Employees will not handle or tamper with any electrical equipment, machinery, or air/water lines in a manner not within the scope of their duties unless they have received specific instructions.
16. All injuries should be reported to the supervisor so that arrangements can be made for medical or first aid treatment.

17. When lifting heavy objects, use the large muscles of the leg instead of the smaller muscles of the back.
18. Dispose of all waste properly and carefully. Bend all exposed nails so they do not hurt anyone removing the waste.
19. Do not operate mechanical equipment without prior training and obtaining a verification card.

Remember, the following general rules apply in all situations:

- No employee should undertake a job that appears to be unsafe.
- No employee is expected to undertake a job until he/she has received adequate safety instructions and is authorized to perform the task.
- No employee should use a chemical without fully understanding its toxic properties and without the knowledge required to work with these chemicals safely.
- Mechanical safeguards must be kept in place, if it is not safe, tag with a “red” Do Not Use tag.
- Employees must report any unsafe conditions to the job site supervisor and the Safety Specialist when on-site.
- Any work-related injury or illness must be reported to management at once.
- Personal protective equipment must be used when and where required. All such equipment must be properly maintained.

Communication

Management and Supervisors should communicate to employees their commitment to safety and make sure that employees are familiar with the elements of the safety program. Cotton communicates with its employees orally, in the form of directions and statements from your supervisor, written, in the form of directives and this manual, and by example. If you see a supervisor or management do something unsafe, please talk to that person. We sometimes forget actions speak louder than words.

Accident Prevention Policy Posting

Each employee has a personal responsibility to prevent accidents. You have a responsibility to your family, your fellow workers, and the company. You will be expected to observe safe practice rules and instructions relating to the efficient handling of your work. Your responsibilities include the following:

- Incorporate safety into every job procedure. No job is done efficiently unless it has been done safely.
- Know and obey safe practice rules.
- Know that disciplinary action may result from a violation of the safety rules.
- Report all injuries immediately, no matter how slight the injury may appear.
- Caution fellow workers when they perform unsafe acts.
- Do not take chances.
- Ask questions when there is any doubt concerning safety.
- Do not tamper with anything you do not understand.
- Report all unsafe conditions or equipment to your supervisor immediately.

Safety Audits

The best method to establish a safer workplace is to study past accidents and worker compensation complaints. By focusing on past injuries, Cotton hopes to avoid similar problems in the future. Therefore, whenever there is an accident, and in many cases upon review of past accidents, you may be requested to participate in a safety audit interview. During the interview, there will be questions about the nature of the investigation and the workplace safety related to the incident. Please answer these questions honestly and completely. Also, please volunteer any personal observations and/or suggestions for improved workplace safety.

Based upon the study of past accidents and industry recommendations, a safety-training program has been implemented. In addition to historical information, workplace safety depends on workplace observation. Your supervisor is responsible for inspecting your working area throughout your shift, but this does not mean you are no longer responsible for inspecting the workplace also. Each day, before you begin work, inspect the area for any dangerous conditions. Inform your supervisor of anything significant, so other employees and guests are advised. You will also be given written communications regarding unsafe conditions or serious concealed dangers. Review this communication carefully and adjust your workplace behavior to avoid any danger or hazards. If you are unclear or unsure of the significance of this written communication, contact your supervisor and review your planned actions before starting to work. It is better to wait and check than to go ahead and possibly cause an injury to yourself and others.

Workplace Inspections

In addition to the examination of records, workplace safety inspections will occur periodically at random, when conditions change, or when a new process or procedure is implemented. During these inspections, there will be a review of the injury and illness prevention policy and Cotton's code of safe work practices.

Accident Investigation

A primary tool used by Cotton to identify the areas responsible for an accident is a thorough and properly completed accident investigation. The results of each investigation will be reduced to writing and submitted for review by management, and if the accident resulted in serious injury, to Cotton attorneys. If the accident resulted in serious injury, the procedure will be directed by the attorneys to provide the most reliable evidence or description legally permissible. All investigations under the directions of legal counsel will be protected by all applicable privileges if any. The attorney will provide more detail on this topic during the investigation. A written report should be prepared from notes and diagrams made at the scene, or a portable tape recorder will be used to record direct eyewitness statements as near to the actual time of observation as possible. All statements should include the time and date, and the town or county where the statement was made. If the statement is intended to be used in court proceedings, a suitable formal statement is required, otherwise, a simple statement that the description is sworn to be true under penalty of perjury with the date, place, and time should be included. All pictures should be similarly identified. Let people know on tape that they are being recorded. If a formal police report or other official investigation is conducted by any government agency, get the name and badge number of the official, or a business card, and find out when a copy of the official report will be available to the public. If you are requested to make a statement, you have the right to have the Company lawyer attend your statement at no cost to you. A satisfactory accident report will answer the following questions:

1. **What happened?** The investigation report should begin by describing the accident, the injury sustained, the eyewitnesses, the date, time, and location of the incident, and the date and time of the report. Remember: who, what when, where, and how are the questions that the report must answer.
2. **Why did the accident occur?** The ultimate cause of the accident may not be known for several days after all the data is analyzed. However, if an obvious cause suggests itself, include your conclusions as a hypothesis at the time you give your information to the person in charge of the investigation.
3. **What should be done?** Once a report determines the cause of the accident, it should suggest a method for avoiding future accidents of a similar character. Once a solution has been adopted, it is everyone's responsibility to implement it.
4. **What has been done?** A follow-up report will be issued after a reasonable amount of time to determine if the suggested solution was implemented, and if so, whether the likelihood of an accident has been reduced.

Records

Cotton maintains records of employee training, hazard identification, and accident investigation. Cotton handles all personal matters under HIPPA law. Records and documentation are private and will not be discussed with anyone without prior consent and approval.

OSHA Records Required

Certifications for employee safety training will be maintained by the Human Resources Department. A record of each such injury or illness is recorded on the OSHA Log and Summary of Occupational Injuries Form 300 according to its instructions. Supplemental records of each injury are maintained on OSHA Form 301. Every year, a summary of all reported injuries or illnesses is posted no later than February 1 and kept up until March 30, on OSHA Form 300A. These records are maintained for five years from the date of preparation.

General Safety Statement

Each employee has an individual responsibility to prevent accidents. It is to the benefit of all employees and Cotton that you report any situation or condition you believe may present a safety hazard, including any known or concealed dangers in your work area. Cotton encourages you to report

your concern to your supervisor. The supervisor will take immediate action to investigate the matter.

Personal Protective Equipment

Proper safety equipment is necessary for your protection. Use all safeguards, safety appliances, or devices furnished for your protection and comply with all regulations that may concern or affect your safety. Your supervisor will advise you as to what protective equipment is required for your job. Certain jobs require standard safety apparel and appliances for the protection of the employee. Your supervisor is aware of the requirements and will furnish you with the necessary approved protective equipment. These items will be worn and effectively maintained as a condition of your continued employment and part of our mutual obligation to comply with the Occupational Safety and Health Act. Safety goggles, glasses, and face shields will correspond to the degree of hazard, i.e., chemical splashes, welding flashes, impact hazards, dust, etc. Do not alter or replace approved equipment without permission from your supervisor. Rubber gloves and rubber aprons will be worn when working with acids, caustics, or other corrosive materials. Specified footwear must be worn. Hearing protective devices (approved muffs or plugs) will be worn by all employees working within any area identified as having excess noise levels. Your supervisor will instruct you on the proper use of the equipment.

Protective Clothing

Proper safety equipment is necessary for your protection. The Company provides the best protective equipment it is possible to obtain. Use all safeguards, safety equipment, or devices furnished for your protection and carry out all regulations that may concern or affect your safety. Wear your gear properly – all snaps and straps fastened, cuffs not cut or rolled. Your supervisor will advise you as to what protective equipment is required for your job.

Smoking

Fire is one of the worst enemies of any facility. Learn the location of the fire extinguishers. Learn how to use them. You can help prevent fires by observing the smoking rules:

- Smoking is not allowed on the site, except in designated areas.
- Smoking is not permitted in restrooms.
- If you are not sure about where you may smoke, ask the supervisor.

Chapter 5 - HSE Programs

Hazard Communication Program

Introduction

To comply with the Occupational Safety and Health Administration (OSHA) Federal Hazard Communication Standard, Cotton has instituted the following minimum requirements. This standard (OSHA) 29CFR 1900.1200 has become known as the "Right-To-Know" law because it gives both employers and employees a right to know about the hazardous chemicals they use within the workplace. The law is designated to reduce the likelihood of an incident of chemical source injury and illness in the workplace.

References

29CFR 1900.1200

Responsibilities

Supervisors will:

- Maintain the SDS book. Compare SDSs as they come in for revisions.
- Keep written program information current, such as the location of chemicals, training programs, chemical lists, etc. for quick reference.
- Make sure all incoming new chemicals are labeled either by the manufacturer, distributor, or our personnel.
- Ensure that chemicals are handled and stored in a manner that does not endanger personnel, the public, or the environment.
- Retrain employees once a year or when a new HAZARD (not a new chemical) is introduced in the workplace.

Employees will:

- Follow procedures designed to protect them against chemical exposure.

HSE Department will:

- Maintain a continuing training program for new employees.
- Keep abreast of any changes, or proposed changes in the laws on either a state or federal level.
- Audit this program and make any changes to it based on changes to regulations, audits and/or incident investigation, and corrective actions.

Procedures and Requirements

To comply with this regulation Cotton has:

- Placed Materials Safety Data Sheets (SDS) on file for every hazardous chemical that we are aware of in the workplace for employee reference. Manuals or SDS books are located in each warehouse and mobile unit and will be available to all employees for review.
- Identified and listed all of the hazardous chemicals in the workplace.
- Established a written hazard communication-training program.
- Placed labels on all hazardous chemical containers that list the name and address of the manufacturer, chemical name, type of potential hazard that exists, and the precautions that are necessary with the appropriate hazard warnings (HMIS) labels, (NAPA) labels, etc.

Steps to protect employees

We have taken the following step to protect employees against chemical hazards:

- Providing quality personal protective equipment.
- Implement administrative controls and compliance with safety procedures.
- Random reviews of Hazard Communication Training in addition to mandatory yearly training.
- Established any safety equipment, such as eyewash stations, etc.

The following are general practices that will be followed by employees and contractor personnel when using or storing chemicals.

- Always understand the hazards of a chemical present before using it.
- Do not smell or taste chemicals or chemical containers.
- No eating, drinking, or smoking when working with chemicals.
- Proper Personal Protective Equipment (PPE) will be worn when working with chemicals.
- Wash hands with soap and warm water before eating or smoking.
- Wash off any chemical contamination with large amounts of soap and warm water.
- Any hazardous material splashed in the eyes will be flushed with large amounts of eye wash solution or clean water for at least 15 minutes using the eye wash station.
- Chemicals must be stored in appropriate, designated, and labeled areas. Never use non-chemical-approved containers, such as water or sports drink containers, to store chemicals.
- If contaminated by a chemical spill or splash, remove contaminated clothing as soon as possible and thoroughly flush affected areas.

SDS Sections

1. **Identification – Section 1** of the SDS is designed to tell you what the chemical is, how it should and should not be used, and how to contact the supplier. Required information includes a product identifier, common names/synonyms, recommended use, restrictions on use, and the name, address, phone number, and emergency phone number of the manufacturer or distributor.
2. **Hazard(s) identification – Section 2** of the SDS warns you of risks associated with the chemical on that particular SDS. Required information includes hazard classification, signal words, hazard statements, pictograms, precautionary statements, and descriptions of unclassified hazards. In the case of mixtures, the percentage that consists of an ingredient with unknown acute toxicity should also be disclosed.
3. **Composition/information on ingredients – Section 3** of the SDS tells you exactly what the product is made of, including impurities and stabilizing additives. This is important because impurities and stabilizing additives have their classifications and contribute to the overall classification of the chemical substance. For all substances, SDS Section 3 requires chemical names, common names/synonyms, Chemical Abstracts Service (CAS) numbers, and other unique attributes. If the following criteria are met, then the chemical name and exact percentage (concentration) are required:
    - The chemical includes additional ingredients classified as health hazards
    - The additional ingredients are present in an amount greater than the concentration limits or exhibit a health risk below the concentration limits
    - Percentage ranges can be used on safety data sheets for mixtures with batch-to-batch variation, a group of substantially similar mixtures, or if there is a trade secret claim. If exact percentages are withheld due to a trade secret claim, a statement to that effect is required in Section 3.
4. **First Aid Measures - Section 4** of the SDS includes a description of symptoms and effects (both acute and delayed). First aid instructions must be included for exposure via inhalation, skin and eye contact, and ingestion as well as recommendations for immediate medical care or special treatment when needed. This is an important part of treating the employee and should be sent with the injured employee so that the treating physician can administer the proper treatment.
5. **Firefighting Measures - Section 5** of the SDS tells you what to do in case of fire caused by the chemical. Required information includes appropriate or not appropriate extinguishing equipment, special equipment and precautions for firefighters, and advice on specific hazards that develop from the chemical during the fire.
6. **Accidental Release Measures - Section 6** of the SDS tells you what to do should the chemical be spilled, leaked, or otherwise released. Required information includes emergency procedures, protective equipment, and appropriate cleanup and containment methods.
7. **Handling and Storage - Section 7** of the SDS provides a guideline for safely handling and storing chemicals. Requirements include information for safely handling the chemical to minimize release into the environment, general hygiene, as well as conditions for safe storage, specific storage needs, and storage incompatibilities.
8. **Exposure Controls/Personal Protection - Section 8** of the SDS is designed to help you avoid personal exposure to chemicals in quantities or periods longer than can be done so

safely. It lists the maximum amount of personal exposure that is considered safe and the protective measures that should be used to safely handle the chemical. Information required for protection includes appropriate engineering controls, personal protective equipment (PPE), and any special material and/or resistance requirements for PPE. Information required for exposure includes:

- OSHA Permissible Exposure Limits (PELs)
- American Conference of Governmental Industrial Hygienists (ACGIH)
- Threshold Limit Values (TLVs)
- Any other limits recommended for safety

9. **Physical and Chemical Properties - Section 9** of the SDS is where the chemical's characteristics are listed on the SDS. The minimum required fields include:
    - Appearance (physical state, color, etc.)
    - Auto-ignition temperature
    - Decomposition temperature
    - Evaporation rate
    - Flammability (solid, gas)
    - Flash point
    - Initial boiling point and boiling range
    - Melting point/freezing point
    - Odor
    - Odor threshold
    - Partition coefficient: n-octanol/water
    - pH
    - Relative density
    - Solubility
    - Upper/lower flammability or explosive limits
    - Vapor density
    - Vapor pressure
    - Viscosity
10. **Stability and Reactivity - Section 10** of the SDS tells you how stable the chemical is and the likelihood of hazardous reactions. Required information is divided into three clear sections:
    - Specific test data for the chemical, class, or family.
    - Chemical stability. Whether the chemical is stable or unstable (at regular room temperature) while in storage and being handled, any stabilizers that may be needed, and any changes in physical appearance that indicate safety issues.
    - Possibility of hazardous reactions, conditions to be avoided, incompatible materials, and any known or anticipated hazardous decomposition products that could be produced because of use, storage, or heating.
11. **Toxicological Information - Section 11** of the SDS provides you with health risks associated with poisoning from the chemical. Information required includes routes of exposure, related symptoms, acute and chronic health effects, numerical measures of toxicity, and whether or not the chemical is considered carcinogenic.
12. **Ecological Information (non-mandatory) - Section 12** of the SDS includes information helpful for evaluating the environmental impact of the chemical(s) released into the environment. Examples of this type of information include bioaccumulation potential, ozone layer depletion, and groundwater absorption studies.
13. **Disposal Considerations (non-mandatory) - Section 13** of the SDS tells you how to safely dispose of, recycle or reclaim the chemical and/or its container. Examples include appropriate disposal containers, disposal methods, physical and chemical properties that may affect disposal, language discouraging sewage disposal, and any special precautions for landfills or incineration.
14. **Transport Information (non-mandatory) - Section 14** of the SDS provides information for shipping and transporting hazardous chemicals by road, air, rail, or sea. This type of information can include UN number and shipping name, transport hazard classes, packing

group number, environmental hazard, bulk transport guidance, and special precautions associated with transport.

15. **Regulatory Information (non-mandatory) - Section 15** of the SDS includes any additional safety, health, and environmental regulations not indicated anywhere else on the SDS sheet. Regional regulatory information is a common example of this type of information.
16. **Other Information - Section 16** of the SDS is for communicating when the most recent update was made, and any other useful information not included anywhere else in the SDS. Information to record here includes when the SDS was prepared, the last known revision date, and where changes were made in the most recent revision.

Container Labeling

Labeling is the primary warning system that allows personnel working with or near hazardous materials to identify these substances, the associated hazards, and the level of protection required. Ensure that labels or other forms of warning are legible, in English, prominently displayed on the container, and readily available in the work area throughout each work shift.

Labels must contain the identity of the hazardous material, the primary physical and health hazards, and the name, address, and phone number of the manufacturer, importer, or other responsible parties.

Manufacturers/distributors of chemicals or hazardous materials must label, tag, or mark each container. If an incoming container has no label or is incorrectly labeled, then the container will not be allowed onto the site.

Fixed or stationary containers, such as storage tanks for diesel and gasoline, are also required to be clearly labeled with the identity of the substance and an NFPA placard or label. If the chemical is transferred to another container, this container must be labeled with the identity of the material and hazard information.

Employee Information and Training

Before employees at our locations can work with chemicals or in an area where they might be exposed to chemicals, initial chemical safety training will be provided. In addition, all employees who are in contact with chemicals in the workplace and/or performing non-routine tasks will also be required to complete annual chemical safety/hazard communication training.

Information and training will include, but not be limited to the following:

- Site-specific information on the types of chemicals used and stored on the site and their hazards.
- The location and availability of chemical information including the location and availability of the written hazard communication program, list(s) of hazardous chemicals, and SOS.
- The chemical labeling system used at the location and how to read and understand the information on the warning labels.
- Methods of detecting the presence of hazardous chemicals and recognition of odors/appearance.
- The effects of short-term and long-term chemical exposure.
- The risks associated with the chemicals used and the methods by which the employee can protect their health and safety, including the use of PPE.
- Actions to take in the event of a chemical emergency.
- After the employee has been given their initial training, additional training (in-depth) may be required for the specific chemical(s) they will be working with, especially if the chemical is a hazardous material.

Recordkeeping and Reporting

Employee training will be documented and maintained for a period of (5) five years. Every chemical used or stored will have an SDS on file in a designated location and be accessible to employees and contractors upon request.

Each location should review its SDS inventory annually to assure the most current version of the SDS is on file.

Each location will prepare and maintain a chemical inventory listing since this inventory is a regulatory requirement.

Definitions

Chemical means any substance, or mixture of substances.

A chemical manufacturer means an employer with a workplace where chemical(s) are produced for use or distribution.

A chemical name means the scientific designation of a chemical following the nomenclature system developed by the International Union of Pure and Applied Chemistry (IUPAC) or the Chemical Abstracts Service (CAS) rules of nomenclature, or a name that will identify the chemical to conduct a hazard classification.

Classification means to identify the relevant data regarding the hazards of a chemical; review those data to ascertain the hazards associated with the chemical, and decide whether the chemical will be classified as hazardous according to the definition of hazardous chemical in this section. In addition, classification for health and physical hazards includes the determination of the degree of hazard, where appropriate, by comparing the data with the criteria for health and physical hazards.

Common name means any designation or identification such as code name, code number, trade name, brand name, or generic name used to identify a chemical other than by its chemical name.

Container means any bag, barrel, bottle, box, can, cylinder, drum, reaction vessel, storage tank, or the like that contains a hazardous chemical. Pipes or piping systems, and engines, fuel tanks, or other operating systems in a vehicle, are not considered to be containers.

Exposure or exposed means that an employee is subjected in the course of employment to a chemical that is a physical or health hazard, and includes potential (e.g., accidental, or possible) exposure. "Subjected" in terms of health hazards includes any route of entry (e.g., inhalation, ingestion, skin contact, or absorption.)

Hazard category means the division of criteria within each hazard class, e.g., oral acute toxicity and flammable liquids include four hazard categories. These categories compare hazard severity within a hazard class and should not be taken as a comparison of hazard categories more generally.

Hazard class means the nature of the physical or health hazards, e.g., flammable solid, carcinogen, oral acute toxicity.

Hazardous chemical means any chemical which is classified as a physical hazard or a health hazard, a simple asphyxiant, combustible dust, pyrophoric gas, or hazard not otherwise classified.

Health hazard means a chemical that is classified as posing one of the following hazardous effects: acute toxicity (any route of exposure); skin corrosion or irritation; serious eye damage or eye irritation; respiratory or skin sensitization; germ cell mutagenicity; carcinogenicity; reproductive toxicity; specific target organ toxicity (single or repeated exposure); or aspiration hazard.

Immediate use means that the hazardous chemical will be under the control of and used only by the person who transfers it from a labeled container and only within the work shift in which it is transferred.

A label means an appropriate group of written, printed, or graphic information elements concerning a hazardous chemical that is affixed to, printed on, or attached to the immediate container of a hazardous chemical, or the outside packaging.

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

Mixture means a combination or a solution composed of two or more substances in which they do not react.

Physical hazard means a chemical that is classified as posing one of the following hazardous effects: explosive; flammable (gases, aerosols, liquids, or solids); oxidizer (liquid, solid, or gas); self-reactive; pyrophoric (liquid or solid); self-heating; organic peroxide; corrosive to metal; gas under pressure; or in contact with water emit flammable gas.

A pictogram means a composition that may include a symbol plus other graphic elements, such as a border, background pattern, or color, that is intended to convey specific information about the hazards of a chemical. Eight pictograms are designated under this standard for application to a hazard category.

A safety data sheet (SDS) means written or printed material concerning a hazardous chemical.

Substance means chemical elements and their compounds in the natural state or obtained by any production process, including any additive necessary to preserve the stability of the product and any impurities deriving from the process used, but excluding any solvent which may be separated without affecting the stability of the substance or changing its composition.

Trade secret means any confidential formula, pattern, process, device, information, or compilation of information that is used in an employer's business, and that allows the employer to obtain an advantage over competitors who do not know or use it.

Use means to package, handle, react, emit, extract, generate as a byproduct, or transfer.

A work area means a room or defined space in a workplace where hazardous chemicals are produced or used, and where employees are present.

A workplace means an establishment, job site, or project, at one geographical location containing one or more work areas.

Confined Spaces

Introduction

Entry into a confined space is potentially one of the most dangerous activities associated with any hazardous substance operations. Due to the unique conditions that can exist, great care must be taken both before and during these work processes. This program is written to comply with OSHA Regulation 29CFR1910.146 and is designed to assist the employees of Cotton, when they perform work inside, client-identified confined spaces.

Since asphyxiation is the leading cause of death in confined spaces due to situations involving IDLH (immediately dangerous to life and health) in atmospheres that are poorly ventilated, all efforts will be devised to control oxygen deficient/combustible/toxic environments that may be encountered before or during work activities. Total energy isolation is required before any entry will be allowed.

Confined space means a space that contains all of the following:

1. Is large enough and so configured that an employee can bodily enter and perform assigned work.
2. Has limited or restricted means for entry or exit (for example, tanks, vessels, silos, storage bins, hoppers, vaults, and pits are spaces that may have limited means of entry.).
3. Is not designed for continuous employee occupancy.

Permit-required confined space (permit space) means a confined space that has one or more of the following characteristics:

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

Non-permit confined space means a confined space that does not contain or, concerning atmospheric hazards, have the potential to contain any hazard capable of causing death or serious physical harm.

References

29CFR 1910.146

Responsibilities

HSE Department will:

- Be responsible for all the overall implementation of this program or the requirements of any host-facility program, while working on contracted projects at host facilities. Due to the extremely severe consequences possible, if improper confined space entries are made, all employees will comply with the provision of this program that applies to their actions or conduct.
- Conduct evaluations to determine program effectiveness to include a review of canceled permits for lessons learned and program improvements.
- Updates and changes this program based on the outcome of the evaluations.
- Ensure the Confined Space Program training of employees and workers is conducted and documented.
- Coordinate with outside responders.
- Ensure that equipment complies with regulatory standards.

Supervisor will:

- Provide atmospheric testing and equipment.
- Provide personal protective equipment (PPE).
- Identify confined space(s) present at work locations. This activity will be performed during pre-job site visits, before initial on-site operations, and at the start of any new project operation.

- Issue and approve confined space entry permits with appropriate training.
- Verify employees, temporary employees, and contract labor being considered for tasks involving PRCS entry have been properly trained and certified.
- Determine the appropriate rescue equipment available for potential emergency response.
- Maintain expired confined space permits within the project folder.

Entry Supervisor will:

- Determine if conditions are acceptable for entry.
- Authorize entry and oversee entry operations.
- Know space hazards including information on the mode of exposure, and signs or symptoms and consequences.
- Verify that specified entry conditions are satisfied, including permits, tests, procedures, and equipment before allowing entry.
- Terminate entry and cancel or suspend permits when entry operations are completed or if a condition that is not allowed under the permit arises.
- Verify that rescue services are available and that the means for summoning them are operable.
- Take appropriate measures to remove unauthorized entrants.
- Ensure that entry operations remain consistent with the entry permit and that acceptable entry conditions are maintained.
- Be properly trained in Cotton's confined space procedures. Training is required on an annual basis. All training will be documented, and records kept.
- Know and understand the hazards that may be faced during entry, including information on the mode, signs or symptoms, and consequences of the exposure.
- Know Cotton emergency rescue procedures.
- Verify, by checking that the appropriate entries have been made on the permit, that all tests specified by the permit have been conducted, and that all procedures and equipment specified by the permit are in place before endorsing the permit and allowing entry to begin.
- Verify that rescue services and equipment are available and that the means for summoning them are operable.
- Check the work at least twice a shift to verify and document that permit requirements are being observed (more frequent checks will be made if operations or conditions are anticipated that could affect permit requirements).
- Complete and post the confined space entry permit in the immediate area of the entry.
- Terminate the entry and cancel the permit when either the entry operations covered by the entry have been completed or a condition that is not allowed under the entry permit arises in or near the permit space.

Attendant will:

- Be knowledgeable of and be able to recognize potential confined space hazards.
- Know existing and potential hazards, including information on the mode of exposure, signs or symptoms and consequences, and possible behavioral effects of exposure.
- Remain outside the permit space during entry operations unless relieved by another authorized attendant.
- Maintain a sign-in/sign-out log with a count of all persons in the confined space, and ensure all entrants sign in and out.
- Monitor surrounding activities to ensure the safety of personnel.
- Maintain effective and continuous communication with personnel during confined space entry, work, and exit.
- Assess conditions inside and outside the space and order evacuation of the permit space when:
    - A prohibited condition exists.
    - A worker shows behavioral effects of hazard exposure.

    - A situation exists outside the confined space that could endanger entrants.
    - The attendant cannot effectively and safely perform the required duties.
- Perform non-entry rescues when specified by the rescue procedure and/or summon rescue and other services during an emergency.
- Ensure that unauthorized people stay away from permit spaces or exit immediately if they have entered the permit space.
- Inform authorized entrants and the entry supervisor if any unauthorized person enters the permit space.
- Perform no other duties that interfere with the attendant's primary duties.

Authorized Entrant will:

- Read and observe the entry permit requirements.
- Remain alert to the hazards that could be encountered while in the confined space.
- Know space hazards, including information on the means of exposure such as inhalation or skin contact, and symptoms of the exposure.
- Use appropriate PPE properly.
- Stay in communication with attendants as necessary to enable the attendants to monitor the entrant's status and alert the entrant to evacuate when necessary.
- Exit from the permit space as soon as possible when:
    - Ordered by the attendant or entry supervisor.
    - He or she recognizes the warning signs or symptoms of exposure.
    - A prohibited condition exists.
    - An automatic alarm is activated.
- Alert the Attendant when a prohibited condition exists or when warning signs or symptoms of exposure exist.
- Ensures that they have received a medical evaluation, fit testing, and training before wearing respiratory protection.
- Turns all expired permits into the Project Manager and/or Safety Officer for review and filing.

Rescue and Emergency Procedures

Cotton does not provide confined space rescue training to their employees. We will rely upon the rescue services of the host facility or from a rescue service contractor. The Safety Manager will verify the training records of the rescue personnel before the utilization of their services.

A site-specific confined space rescue plan must be developed and must be explained to all PRCS entry participants.

The use of non-entry rescue systems or methods is the preferred method for rescue operations. Where non-entry rescue is not possible, the Cotton HSE Department must be notified and will coordinate rescue and emergency services with designated providers. The rescue team must be established before the entry and the Entry Supervisor must verify that rescue services are available and that the means for summoning them are operable.

If an onsite Rescue Team is used, the Entry Supervisor must assure that each member of the Rescue Team is provided with and trained to use the PPE and rescue equipment necessary for making rescues from permit spaces. The members of the Rescue Team must also be trained in basic first aid and CPR and will assist during any medical emergencies during confined space entries.

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

- Each authorized entrant will use a chest or full body harness, with a retrieval line attached at the center of the entrant's back near shoulder level, or above the entrant's head. Wristlets may be used in place of the chest or full body harness if the Entry Supervisor can demonstrate that the use of a chest or full body harness is infeasible or creates a greater hazard and that the use of wristlets is the safest and most effective alternative.
- The other end of the retrieval line will be attached to a mechanical retrieval device or fixed point outside the permit space in such a manner that rescue can begin as soon as the rescuer

becomes aware that rescue is necessary. A mechanical retrieval device will be available to retrieve personnel from vertical-type permit spaces more than 5 feet deep.

- Whenever conditions exist within a confined space that exposes an entrant to environmental conditions that are Immediately Dangerous to Life and Health (IDLH) or have a possibility of becoming IDLH, a 30- minute Self Contained Breathing Apparatus or a combination airline respirator with a 5-minute escape pack must be immediately available for rescue.

Recordkeeping

Each Cotton Division/Department will maintain the following:

- Confined space entry and rescue training attendance list.
- Expired permits.
- Canceled entry permits with records of atmospheric testing showing other than normal test results are considered records of employee exposure and as such will be retained for 30 years in the employee medical file.
- All entry logs, JHA, SSP, and the confined space entry program will be reviewed and revised every year by the Safety Manager or as necessary.

Identification

The identified confined space vessel will be revealed to all employees by the use of a red/white hazard-warning sign with black letters stating:

DANGER
PERMIT-REQUIRED CONFINED SPACE
DO NOT ENTER

Hazard Evaluation

Testing or monitoring conditions before entry and during entry operations will be conducted by the host-facility unit operator, or host-facility designee, by the use of a calibrated, direct-reading, gas monitor. Oxygen levels must be tested first, a lack of oxygen will cause the erroneous reading of flammable and toxins. The tests will be performed in this order:

- Oxygen concentration (19.5% - 23.5% range)
- Flammable gases/vapors (less than 10% of LEL)
- Potential toxic concentrations (less than listed PELs)

The results will be recorded on the host-facility entry permit, and entry into the confined space will not be allowed unless the defined acceptable entry conditions are met. Continuous atmospheric monitoring of the permitted space is required while employees are inside the confined space. Employees or their representatives are entitled and encouraged to request additional air monitoring at any time work is underway.

The instrument probe or line must extend into the confined space at least 4 feet so that the person performing the test is not entered into the space. Since particular gases can stratify in layers in the confined space, initial entry testing will be performed at multiple levels of the space to be entered. If entry is required to perform atmospheric testing, that individual will wear an SCBA (self-contained breathing apparatus) or a positive pressure respirator with an escape bottle.

If an instrument reading ever indicates an unusual, unexpected, or unacceptable atmospheric condition, it is never to be ignored or assumed to be an instrument error. If a bad reading is ever indicated, all necessary measures will be taken to correct the situation (recalibrate instrument, ventilate space, etc.) Employees will not be expected to enter confined spaces until it is deemed safe to do so, and the acceptable entry conditions are recorded on the entry permit. The size or design of a confined space may warrant the use of multiple gas monitors with their probes located at various levels.

Lighting sources to be used in the permit-confined space will be explosive-proof and specifically approved by a recognized agency such as Underwriter Laboratory or the Mine Safety and Health Administration.

Any electrically operated tool taken inside the permit space will be double insulated, inspected for

defects, and connected to an approved ground fault circuit interrupter (GFCI) that has been inspected and tested before use.

All ladders used for entry/exit into the permit-confined space must meet all applicable codes and standards as outlined in 29CFR1910.23 or .26 and be inspected before use. They must not interfere with rescue or retrieval systems, ventilation methods, and work operations.

Ventilation

Continuous ventilation must be provided in the confined space in a volume sufficient to maintain acceptable atmospheric conditions per the parameters in the Monitoring log section of the Entry Permit. The air supply for the forced air ventilation will be from a clean source and may not increase the hazards in the space.

If ventilation is unsuccessful, as demonstrated by unacceptable retesting results, or even if acceptable conditions are unable to be consistently maintained during actual entry operations, authorized entrants will be required to wear appropriate respiratory protective equipment in compliance with OSHA Regulation 29CFR1910.134, the Respiratory Protection Standard.

This equipment selection will be based on the atmospheric test results that will indicate the proper level of respiratory protection to be worn.

Hazardous Atmospheres

An atmosphere is considered hazardous if it contains one or more of the following:

- Atmospheric oxygen concentration below 19.5% or above 23.5%.
- Flammable gas, vapor, or mist above 10% of its lower explosive limit (LEL).
- Airborne combustible dust at a concentration that meets or exceeds its LFL, lower flammability limit, or (if the dust obscures vision at a distance of 5 feet).
- The atmospheric concentration of any substance where employee exposure would exceed any listed toxic dose or permissible exposure limit.
- Any other atmospheric condition that is immediately dangerous to life and health.

Entry Permits

The authorized entry Supervisor will prepare the entry permit, recording all testing results on the permit. This system will provide the best assurance that confined space entry takes place only after all actions and conditions necessary for the protection of authorized entrants have been performed.

The entry permit is only valid for one shift and a new permit will be issued, or the original permit will be re-issued, if possible, whenever changing work conditions or work activities introduce new hazards into the confined space

The entry permit will identify the following information:

- Permit space (name/location of space to be entered).
- Purpose (specify job/type of work to be performed in that space).
- Date/duration of entry (current date and length of time allowed).
- Entrant names (roster of authorized personnel for space entry).
- Attendant name(s) (at least one but may rotate with entrants).
- Entry Supervisor (authorized for entry also).
- List of Hazards (observed or present).
- Hazards control/isolation (methods of elimination).
- Acceptable entry conditions (oxygen, combustible, toxins).
- Test results (initial/periodic monitoring & initials of the tester).
- Rescue provisions (services to call, emergency #'s).
- Communication methods (phone, 2-way radio, voice, signals).
- Tools/Equipment needed (PPE, harnesses, retrieval lines, alarms).
- Space-specific information (special precautions unique to the space).
- Additional permits (hot work, lockout/tagout).
- Authorization of permit (proper signatures of authority).

Cotton employees will have the opportunity to participate in the permit review and signing of this

document before the commencement of permit-authorized work activities.

Emergency Alarms

The Confined Space Entry Permit will be automatically canceled if a major alarm, gas/vapor release, area fire alarm, or plant emergency is sounded, except for a test alarm. When the all-clear signal is sounded, the Confined Space Entry

A permit can be reinstated or reissued after atmospheric tests are retaken and noted on the permit.

If the alarm is sounded, personnel inside the confined space must exit and follow the site- specific emergency evacuation procedures.

Hot Work Permit

A hot work permit is also required in conjunction with the confined space entry permit if hot work tasks will be performed inside the permit-required confined space.

When welding or cutting is being performed in a permit-required confined space the gas cylinders and welding machines will be kept outside of the confined space.

When authorized entrants leave a permit-required confined space for lunch, a long break, or shift change, all cutting hoses and torches must be removed from the confined space to eliminate the possible accumulation of explosive gasses.

Non-Permit Required Confined Spaces (NPRCS)

Under 1910.146(c)(7), a permit space may be reclassified as an NPRCS if the space poses no actual or potential atmospheric hazards and if all hazards within the space are eliminated without entry into the space.

The NPRCS re-classification will remain in effect as long as the hazard(s) remain eliminated. Employees and workers can enter the space without implementing a PRCS program.

NPRCS requires a comprehensive safety plan.

Training

Whether you are an entrant, attendant, entry Supervisor, or part of the support personnel confined space training is mandatory. Most confined space accidents and fatalities are the result of the wide range of possible hazards to be encountered, as well as the lack of training, so this will be an important part of the confined space program. Training will be provided:

- Before any employee is assigned any duties.
- Before any assigned duties are changed.
- Whenever there is a change in operations affecting the space.
- Whenever an employee demonstrates deficiencies or deviations from the initial training provided.

Written certification to include employee's name, trainer signature/initials, and dates of training will be provided upon completion of required levels of training as provided by outside contract training resources or Management and maintained in the Safety Department at the Main office. Certification must be made available to employees and their authorized representatives. Refresher training will be provided on an annual basis.

Attendants will be specifically trained in the following:

- Recognition of hazards.
- Constant monitoring of the work area.
- Summoning rescue help.
- Identifying changing work conditions.
- Site-specific duties and responsibilities.

Entrants will be specifically trained in the following:

- Recognition of hazards.
- Site-specific personal protection equipment.
- Rescue procedures.
- Identifying changing work conditions.
- Site-specific duties and responsibilities.

The Entry Supervisor will be specifically trained in the following:

- Recognition of hazards.
- Checking all personal protection equipment, Job Hazard Analysis, and personnel are in place.
- Coordinating with customer requirements.
- Site-specific duties and responsibilities.

Definitions

Acceptable entry conditions refer to conditions that must exist in a permit space to allow employees to enter and to ensure they can safely complete their work while in that confined space.

An attendant refers to a person stationed outside the permit space that monitors the authorized entrants and performs the duties assigned to them by this written program.

Authorized Entrant refers to an employee who is authorized under this written program to enter a permit space.

Emergency refers to an event that could endanger an authorized entrant whether it occurs inside or outside the permit space.

Entry refers to the entrance of a person into a permit-required confined space. Entry is considered when any part of the body breaks the plane of entry into the space.

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

Entry Permit refers to the written document that controls entry into a permit confined space and contains all pertinent information required by the OSHA Standard.

Entry Supervisor refers to the person designated with the responsibility to determine acceptable entry conditions, and to authorize, supervise, or terminate any entry.

A hazardous Atmosphere refers to an atmosphere, which may expose a person to the risk of death, incapacitation, injury, acute illness, or impaired ability to escape unaided from an emergency

IDLH (immediately dangerous to life and health) refers to a condition that threatens the loss of life, adverse health effects, or impaired ability to escape unaided by an emergency.

Oxygen deficient atmosphere refers to an atmosphere that contains less than 19.5% oxygen content.

Oxygen Enriched Atmosphere refers to an atmosphere that contains more than 23.5% oxygen content.

Permit Required Confined Space (PRCS) – refers to any space that meets the requirements of a permitted confined space.

Rescue service means the personnel designated to rescue employees from permit spaces.

Retrieval System refers to equipment, which non-entry personnel can use to retrieve persons from a permit space in case of emergency.

Testing refers to a process used to identify and evaluate a potentially hazardous atmosphere with monitoring instruments.

Emergency Response Program

Purpose

Cotton requires that during every emergency an organized effort be made to protect personnel from further injury and to minimize property damage. All of Cotton's resources can be made available to respond to an emergency. Each supervisor must know what to do during an emergency in his or her area and must be certain that his or her employees understand their roles.

Supervisors Responsibilities

Every facility and client location may have different alarms, warnings, and emergency evacuation procedures. In smaller locations, under 10 people, verbal communication is acceptable and may be used to announce alarms. During an emergency, the supervisor will:

- Ensure that all work crews are familiar with the evacuation plan for their specific work area.
- Take an accurate head count of all employees in safe zones.
- Give headcount to the client or evacuation supervisor.
- In the event of a serious event report to the corporate office.
- Ensure all equipment shutdown procedures are followed.
- Know the location and use of all safety equipment in the work area.
- Keep employees from re-entering an evacuated area until re-entry is safe.

Employee Responsibilities

Employees involved in any emergency greater than a minor incident are expected to act as follows:

- If there is a threat of further injury or further exposure to hazardous material, remove all injured persons, if possible, and leave the immediate vicinity.
- If there is no threat of further injury or exposure, leave seriously injured personnel where they are and alert someone trained in first aid to attend to them. Moving an injured person can cause complications and further worsen the injuries.
- Report the emergency immediately by phone. State what happened, the specific location, whether anyone was injured, and your name and phone number.
- Proceed with first aid or attempt to control the incident only if you can do so safely and have been trained in first aid or the emergency response necessary to control the incident.
- Show the person in charge where the incident occurred, inform them of the hazards associated with the area, provide any other information that will help avoid injuries, and do as they request.
- Turn off all Cotton equipment and proceed to the designated evacuation location.

HSE Department will:

- Implement this plan and communicate the correct actions to take in emergencies to locations employees.
- Account for their personnel in an emergency.
- Ensure that employees are provided with adequate emergency response drills.
- Audit this program and make any changes to it based on changes to regulations, audits and/or incident investigation, and corrective actions.

Procedures and Requirements

When reporting an emergency, be prepared to identify the following information:

- Your name and contact phone number.
- A description of the emergency.
- The total number of injured employees and their names.
- The nature of the injuries.
- Your needs for immediate assistance.

- Your exact location within the facility.

Response to Medical Emergencies

If an employee sustains a minor injury, contact the HSE Department.

If the injury cannot be treated with basic first aid techniques, the supervisor should send the injured person to Cotton contracted Occupation Health medical treatment facility (MTF) and contact the HSE Department and HR Department to assist in the Incident Reporting & Investigation to investigate the injury.

If the injury is severe and immediate emergency care is needed, contact 911 immediately. Stabilize the patient and secure the scene until help arrives.

If the severity of the injury does not require an ambulance but is severe enough to require medical care, transportation to an approved Occupational Medical Facility must be arranged for the employee, who should be accompanied by the supervisor.

Response to Fires

In the event of a fire in the workplace, the following steps should be followed to ensure employee safety:

- Notify others in the immediate area of the fire.
- Size up the fire and determine if it can be controlled.

If the fire is small and not beyond control, obtain an extinguisher and attempt to extinguish the fire if:

- There is minimal risk of the fire spreading out of control.
- The fire is not close to flammable or combustible liquids or explosives.
- The employee has completed the proper fire extinguisher training.

If the fire is large and/or spreading beyond control:

- Initiate response by the local fire department (call 9-1-1).
- Alert all employees to evacuate.
- Sweep the facility to ensure all employees are safely out of the facility. The Supervisors should ensure employees are accounted for post evacuation. If anyone is missing, that information should immediately be provided to the emergency response organization.
- Place employees at established access routes, gates, and staging points to direct emergency response vehicles into the facility.

Response to Bomb and Other Types of Threats

All Bomb Threats will be treated as a Major Incident. On receiving a bomb threat, the person taking the call should attempt to gather as much information from the person as possible. The person taking the call must inform the Location Manager or alternate immediately, who should contact local law enforcement personnel and initiate site evacuation.

Anyone receiving threats and perceiving it can cause injury or harm should notify their manager, supervisor, or a Human Resources representative immediately. This could include an employee threatening another, a disgruntled current or past employee making threats against other employees, etc.

Response to Environmental Spills

Spills or releases that pose a safety hazard or may impact the environment (by entering a storm drain, going off a paved area, exceeding containment efforts, etc.) must be reported immediately to the Manager, Supervisor, or HSE Department. If a spill cannot be readily controlled external assistance should be requested immediately.

Evacuation Procedures

In the event of an emergency requiring an evacuation the facility fire alarm, air horns, etc. will be used to alert employees that they are required to evacuate the facility. In smaller locations, under 10 people,

verbal communication is acceptable and may be used to announce alarms.

Upon hearing the alert, all employees are to immediately stop their activities and evacuate the building via the closest available exit. Employees are to proceed to and check in at their designated assembly location or an alternate assembly location.

The designated sweepers will assist with the evacuation process and help to ensure that all personnel are safely evacuated from the facility.

Confirmation that the buildings are evacuated should be communicated to the Supervisor or Person in Charge.

Access to the building(s) by unauthorized employees will be prohibited during the evacuation. The HSE Department will continue to monitor the emergency event and coordinate with any outside emergency response personnel to determine when it is safe to re-enter the building(s). The signal to re-enter (i.e., the "All Clear") will be communicated to the HSE Support Team members, who will then notify employees when it is safe to return to the facility.

Shelter in Place Procedures

Upon authorization of a shelter-in-place emergency, employees in the facility will be notified that a severe weather emergency is imminent, and a shelter-in-place emergency has been initiated. Employees should stop their work safely and move to a safe space immediately.

Once the threat has passed, the Supervisor or Person in Charge will authorize the "All Clear" and employees will be able to return to their duties.

Fire Protection and Prevention Program

Purpose

This program is to aid in the prevention of and protection against fires at Cotton facilities and job sites. It covers all our field projects, offices, warehouse, and mechanic shop. The Cotton supervision, safety personnel, and employees are charged with implementing and enforcing this program.

References

National Fire Protection Agency (NFPA) National Fire Codes

NFPA 101 Life Safety Code

29 CFR1910.38 Emergency Action Plans

29 CFR1910.39 Fire Prevention Plans

Responsibility

Supervisors will:

- Ensure that their personnel are properly instructed regarding potential fire hazards involved in their work and around their workplaces, the proper precautions to minimize fires, and the procedures in case of fire.
- Work to prevent and protect against, fire, including compliance with local, regional, or country requirements

Employees will:

- Work safely and pay particular attention to the risks of fire from work activities.

HSE Department will:

- Audit this program and make any changes to it based on changes to regulations, audits and/or incident investigation, and corrective actions.
- Ensure that all firefighting equipment will be periodically inspected and maintained in operating condition. Defective equipment will be immediately replaced.
- Work to prevent and protect against, fire, including compliance with local, regional, or country requirements.
- Ensure inspections, maintenance, of the detector and extinguisher systems, training, and drills are completed.

Procedures/Requirements

Introduction

The prevention of fires is of utmost importance. Good housekeeping and equipment maintenance must be maintained to keep fire hazards at a minimum. All fires will be reported immediately to your supervisor. Cotton employees will be trained to recognize hazardous conditions and take appropriate actions to prevent a fire. Employees will exercise extreme caution so that none of our work activities results in a situation that could cause a fire or explosion. All leaks should be reported and repaired immediately, if practicable. If an immediate repair is not possible, adequate warning signs must be posted and extra precautions against fires instituted. In the event of a gas leak, all fires and engines should be shut down immediately. Oil or gasoline from leaks should be cleaned up and disposed of in a prescribed manner.

Cotton employees will be trained annually in the use of hand-held portable fire extinguishers. Fire extinguishers are used only in the incipient stage of a fire. Cotton employees are not to engage in any other type of fire-fighting activity. If the fire cannot be extinguished using a hand-held fire extinguisher, the employee is to follow the emergency procedures for that facility.

Supervisors must ensure that their personnel are properly instructed regarding potential fire hazards involved in their work and around their workplaces, the proper precautions to minimize fires, and the procedures in case of fire.

Inspection

Per OSHA guidelines, fire extinguishers will be inspected quarterly, and a professional fire extinguisher service provider will maintain the extinguishers annually with a tag to show the yearly inspection. Fire

extinguishers removed from their locations to be inspected, repaired, or recharged will be replaced by a spare extinguisher of the same type during the period they are gone.

Fire Fighting Involvement

No one will go to the scene of fire unless directly involved in operations or assigned to fire-fighting activities. Others not having operating duties will evacuate the fire area immediately. Traffic must not block fire-fighting equipment access equipment. Electrical fires must not be fought with a solid stream of water.

Fire Emergencies

Office personnel will not fight any fire that cannot be extinguished by the designated fire extinguishers. In all cases, the employee will call the local fire department by dialing 911.

Fire Extinguisher Placement

Portable fire extinguishers will be maintained in a fully charged and operable condition and kept in their designated place at all times when they are not being used. Fire extinguishers will be conspicuously located where they will be readily accessible and immediately available for use, preferably along normal paths of travel. In locations where visual obstruction cannot be completely avoided, means will be provided to conspicuously indicate the location and intended use of the extinguisher. Employees will be familiarized with the location and types of fire extinguishers provided by Cotton and with the locations and types of extinguishers provided by the customer in your work area. If you are not familiar with the type of extinguisher provided and do not know how to operate it, notify your supervisor immediately.

Portable fire extinguishers are the only type of fire-fighting equipment a Cotton employee will be expected to use. Fire extinguisher hose nozzles should be kept free of obstruction at all times. In areas where insects tend to nest in protected small areas, the nozzle should be covered with a small cloth or plastic bag to keep it free of obstructions. A fire extinguisher that is empty, defective, or has been discharged should never be re-hung until it has been serviced or repaired. Extinguishers must operate at top efficiency the instant they are used.

Proper Use of Fire Extinguishers

Always use the handle to carry an extinguisher. Walk at a steady pace; do not run to a fire. Proceed to the upwind side of a fire. Stay well clear of the flames. When you are approximately 10 feet upwind of the near edge, stop and ready your extinguisher for discharge. Once your extinguisher is set for discharge, position yourself within eight feet of the near edge upwind of the fire. From this position, the air currents help carry the agent into the fire assuring maximum visibility and providing protection from the heat and possibility of hazardous fumes.

When discharging the fire extinguisher agent, aim your stream just short of the edge at the base of the fire. Apply the agent in a side-to-side sweeping action across the full width of the fire. Make sure each sweep of the fire extinguisher agent is slightly wider than the near or leading edge of the fire. Advance only as fast as the extinguisher action of your agent will permit. Do not outrun your protection. Do not raise your stream to chase the flames. Keep the stream pointed down at the edge of the fire. Stop short of the already extinguished fuel area. Do not become involved in the fire.

Above all, maintain your side-to-side sweeping motion until the fire is extinguished. Once the fire is out, stand by for a few minutes. Make sure there is no danger of a re-flash.

No Smoking

Smoking is only allowed in designated smoking areas.

If you are unsure that smoking is permitted in an area, or you do not see a sign that says, “Designated Smoking Area,” DO NOT SMOKE. Assume most areas are designated “No Smoking” areas for fire safety reasons, and only smoke in areas that clearly state smoking is permitted. If you have questions, ask your supervisor.

Storage

All flammable liquids/solvents should be kept in approved, properly labeled containers. Small

quantities of flammable liquids such as gasoline and solvents should be handled, transported, dispensed, and stored in approved, marked safety cans. Safety cans have self-closing caps, flame arrestors, and pressure relief vents. The contents must be properly labeled. Cans of oil, kerosene, oily rags, waste, etc. must not be allowed near stoves or gas fires. Gasoline, kerosene, or other flammable liquids must not be stored in glass containers. Do not store flammable liquids in open containers.

Flammable and combustible materials such as oil or gasoline-soaked rags/clothing; oily waste and shavings must not be left lying around or piled on the ground. Spontaneous combustion is likely to result and cause a fire. These materials must be stored in approved and covered metal containers. These containers should have self-closing lids and should be emptied daily to maintain the premises in a safe and sanitary condition.

Because of their convenient size, aerosol cans are often stored or set down in unsafe places. Keep in mind that all aerosol cans are pressurized and that this pressure increases when exposed to heat. If the can is overheated, it will explode like a hand grenade. Aerosol spray cans containing various commodities are typically labeled as flammable. If the product is not flammable, the propellant usually is. Do not store pressurized aerosol flammable cans in non-approved storage containers.

Storage cabinets, rooms, or particular areas should be designated to store flammable liquids. Cabinets should be labeled: “FLAMMABLE – KEEP FIRE AWAY”. Not more than 60 gallons of flammable or 120 gallons of combustible liquid will be stored in any one storage cabinet or container.

No more than 25 gallons of flammable liquids will be stored outside an approved storage cabinet unless a designated area has been provided which meets all regulatory requirements. Large quantities of flammable liquids should be stored well away from the immediate work area.

Outside portable tank storage will be located no closer than 25 feet from any building. Firefighting equipment is for fire use only and will be kept in its designated place at all times when not in use. All fire protection equipment must be located in designated areas that are identified with appropriate markings. This equipment should be located near likely fire hazards, but it must be accessible to operating personnel. The number, type, and location of extinguishers must meet all applicable standards.

Flammable Liquids

Since paint and insect sprays and most paint removers are usually flammable, their use near open flames or other sources of ignition must be avoided. Read the labels on the containers. Flammable liquids such as gasoline, benzene, naphtha, and lacquer thinner must not be used for cleaning purposes.

Spills or overflow of flammable liquids should be avoided. However, in the event of spillage, immediate steps should be taken to clean up and minimize the danger of fire. When liquids such as condensates, gasoline, and some crude oils are drawn into open metal containers, the open container must be grounded using either threaded connections or a bonding wire to the vessel or piping to prevent any possible ignition source from the generation of static electricity.

Using funnels and spouted cans makes for a quick transfer and helps prevent dangerous spills. When pumping highly flammable liquids from one container to another, metallic contact should always be maintained between the two containers. Safe transfers of flammable liquids are made in an open, well-ventilated area where the vapors will be diluted and dissipated by large quantities of fresh air.

Except for gasoline and oil, the mixing of two or more flammable liquids is prohibited. When pumping highly flammable liquids from one container to another, metallic contact should always be maintained between the two containers.

Fire Prevention

Electrical wiring and equipment for light, heat, or power purposes will be installed in compliance with the requirements of the NEC. Internal combustion engine-powered equipment will be so located that the exhausts are well away from combustible materials.

When the exhausts are piped outside the building under construction, a clearance of at least 6 inches will be maintained between such piping and combustible material. Smoking will be prohibited at, or near, operations that constitute a fire hazard, and will be signs will be noticeably posted.

Bonding devices will not be attached or detached in hazardous concentrations of flammable gases or vapors. Good housekeeping should be maintained at all work locations and in all vehicles, and paper and other combustible materials should not be allowed to accumulate.

Open Yard Storage

Combustible materials will be piled with due regard to the stability of piles and in no case higher than 20 feet. Driveways between and around combustible storage piles will be at least 15 feet wide and maintained free from the accumulation of rubbish, equipment, or other articles or materials.

Driveways will be so spaced that a maximum grid system unit of 50 feet by 150 feet is produced. The entire storage site will be kept free from the accumulation of unnecessary combustible materials. Weeds and grass will be kept down, and regular housekeeping provided for the periodic cleanup of the entire area.

No combustible material will be stored outdoors within 1 foot of a building or structure. Portable fire extinguishing equipment, suitable for the fire hazard involved, will be provided at convenient, conspicuously accessible locations in the yard area when required by regulations.

Indoor Storage

Storage will not obstruct, or adversely affect, the means of exit. All materials will be stored, handled, and piled with due regard to their fire characteristics. The material will be piled to minimize the spread of fire internally and to permit convenient access for firefighting. Stable piling will be maintained at all times.

Aisle space will be maintained to accommodate safely the widest vehicle that may be used within the building for firefighting purposes. Clearance of at least 36 inches will be maintained between the top level of the stored material and the sprinkler deflectors. Clearance will be maintained around lights and heating units to prevent the ignition of combustible materials. A clearance of 24 inches will be maintained around the path of travel of fire doors unless a barricade or fencing is provided, in which case no clearance is needed.

Materials will not be stored within 36 inches of a fire door opening.

Sprinkler System Management

Sprinkler control valves and other fire protection systems (e.g., fire pump) that can be closed or shut off must be locked in the operational position at all times except as noted below.

- Monthly inspections of sprinkler control valves and other fire protection systems that can be closed or shut off are permitted to ensure continuity of fire protection.
- It is necessary from time to time to temporarily shut off automatic fire protection systems for repairs, routine maintenance, or new installations.

When these systems are impaired, the facility is in jeopardy as protection is out of service. It is therefore important to have steps in place to control these activities, to assure that the facility is properly safeguarded during the impairment, and to restore hut valves promptly.

Flammable and Combustible Liquids

Only approved containers and portable tanks will be used for the storage and handling of flammable and combustible liquids. Approved safety cans or Department of Transportation-approved containers will be used for the handling and use of flammable liquids in quantities of 5 gallons or less, except those flammable liquid materials that are highly viscid (extremely hard to pour), which may be used and handled in original shipping containers. For quantities of one gallon or less, the original container may be used for storage, use, and handling of flammable liquids. Flammable or combustible liquids will not be stored in areas used for exits, stairways, or normally used for the safe passage of people.

Indoor Storage of Flammable and Combustible Liquids

No more than 25 gallons of flammable or combustible liquids will be stored in a room outside of an approved storage cabinet. Quantities of flammable and combustible liquid over 25 gallons will be stored in an acceptable or approved cabinet.

No more than 60 gallons of flammable or 120 gallons of combustible liquids will be stored in any one storage cabinet. No more than three such cabinets may be located in a single storage area.

Handling Liquids at Point of Use

Flammable liquids will be kept in closed containers when not actually in use. Leakage or spillage of flammable or combustible liquids will be disposed of promptly and safely. Flammable liquids may be used only where there are no open flames or other sources of ignition within 50 feet of the operation unless conditions warrant greater clearance.

Service and Refueling Areas

Flammable or combustible liquids will be stored in approved closed containers, in tanks located underground, or in above-ground portable tanks. The tank trucks will comply with the requirements covered in the Standard for Tank Vehicles for Flammable and Combustible Liquids (NFPA No. 385-1966). The dispensing hose will be an approved type. The dispensing nozzle will be an approved automatic-closing type without a latch-open device. Clearly identified and easily accessible switches will be provided at a location remote from dispensing devices to shut off the power to all dispensing devices in the event of an emergency.

There will be no smoking or open flames in the areas used for fueling, servicing fuel systems for internal combustion engines, or receiving or dispensing flammable or combustible liquids. Conspicuous and legible signs prohibiting smoking will be posted. The motors of all equipment being fueled will be shut off during the fueling operation. If fuel is being dispensed from a fuel truck, the truck should be grounded to the equipment being filled. The operator of the fuel-dispensing equipment is to ensure that the engine being serviced is supplied with the proper type of fuel and that the fuel supply is shut off by a valve when the engine is not in use.

Each service or fueling area will be provided with at least one fire extinguisher having a rating of not less than 20-B: C located so that an extinguisher will be within 75 feet of each pump or dispenser. Under no circumstances is gasoline to be used as a solvent, as it produces dangerous amounts of vapor. Always use a high-flashpoint solvent or thinner for cleaning off paint, grease, or oil around equipment.

Housekeeping Requirements

All oily waste and oil-soaked materials must be in properly covered metal waste containers. Combustible waste must not be allowed to accumulate in the workplace and must be periodically maintained throughout the day.

Weeds and grass must be kept cut to reduce the possibility of fire.

Training

All employees will be properly trained in the use of portable hand-held fire extinguishers. Employees will also participate in fire drills that will be held at regular intervals to familiarize employees with the emergency/fire response procedures for the work site as well as the location and operation of fire extinguishing equipment.

Definitions

Class "A" Fire – A fire that occurs in ordinary materials such as wood, paper, rags, and rubbish. The quenching and cooling effects of water or solutions containing large percentages of water are of first importance in extinguishing these fires

Class "B" Fire – A fire that occurs in the vapor-air mixture over the surface of flammable liquids such as gasoline, oil, grease, paints, and thinners. The limiting of air is of primary importance. Generally, regular dry chemicals, multi-purpose dry chemicals, carbon dioxide, and foam may be used depending on the circumstances of the fire. Solid streams of water are likely to spread the fire, but on large fires of this class, water fog nozzles prove effective.

Class "C" Fire – A fire that occurs in or near electrical equipment where non-conducting extinguishing agents will be used. Dry chemicals, carbon dioxide, compressed gas, or vaporizing liquid may be used. Foam or a solid stream of water should not be used because both are good conductors and can expose the operator to a severe shock hazard.

Class "D" Fire – A fire that occurs in combustible metals such as magnesium, titanium, zirconium, lithium, and sodium. Specialized techniques, extinguishing agents, and extinguishing equipment are needed to control and extinguish fires of this type. Normal extinguishing agents generally should not be used, as there is a danger in most cases of increasing intensity of the fire because of a chemical reaction between some extinguishing agents and the burning metal.

Class "K" Fire – A fire in cooking appliances that involve combustible cooking media.

Closed container – A container so sealed utilizing a lid or other device that neither liquid nor vapor will escape from it at ordinary temperature.

Combustible liquid – Any liquid having a flash point at or above 140ºF (60 ºC) and below 200ºF (93.4ºC).

Combustion – Any chemical process that involves oxidation sufficient to produce light or heat.

Dry Chemical – An extinguishing agent composed of very small particles of chemicals supplemented by special treatment to provide resistance to packing and moisture absorption (caking) as well as to provide proper flow capabilities. **Note:** Dry Chemical does not include Dry Powder.

Dry Powder – A compound used to extinguish Class D fire.

Fire Prevention – Measures to prevent the outbreak of fire.

Fire Protection – Design features, systems, equipment, buildings, or other structures to reduce damage to property and injury to personnel by detecting extinguishing or containing fires.

Fire resistance – a material so resistant to fire that, for a specified time and under conditions of standard heat intensity, it will not fail structurally and will not permit the side away from the fire to become hotter than a specified temperature.

Flammable – Capable of being easily ignited, burning intensely, or having a rapid rate of flame spread.

Flammable liquids – Any liquid having a flash point below 140ºF and having a vapor pressure not exceeding 40 pounds per square inch (absolute) at 100ºF.

Flashpoint (of the liquid) –The temperature at which a liquid gives off vapor sufficient to form an ignitable mixture with the air near the surface of the liquid or within the vessel used, as determined by the appropriate test procedure and apparatus as specified below.

Incipient Stage Fire – A fire that is in the initial stages or beginning stage and can be controlled or extinguished by a portable fire extinguisher.

Multi-purpose Dry Chemical – A dry chemical that is approved for use on Class A, B, and C Fires.

Liquefied petroleum gases, LPG, and LP Gas – Include any material, which is composed predominantly of any of the following hydrocarbons, or mixtures of them, such as propane, propylene, butane (normal butane or iso-butane), and butylenes.

Portable tank – A closed container having a liquid capacity of more than 60 U.S. gallons, and not intended for fixed installation.

Safety can – An approved closed container, of not more than 5 gallons capacity, having a flash-arresting screen, spring closing lid, and spout cover and so designed that it will safely relieve internal pressure when subjected to fire exposure.

Vapor pressure – The pressure, measured in pounds per square inch (absolute).

Control of Hazardous Energy: LOTO Program

Purpose

This procedure outlines safe and consistent procedures that will help prevent injury or damage during servicing or maintenance of equipment due to unexpected equipment activation, energizing of equipment, direct contact with energy sources, stored energy release, or released hazardous agents.

References

29 CFR 1910.147 The control of hazardous energy (lockout/tagout)

Responsibility

Supervisors will:

- Ensure personnel authorized to perform LOTO operations are educated in proper LOTO procedures.
- Ensure proper equipment is available and accessible to employees authorized to perform LOTO operations.
- Inform the employees of the type and magnitude of the energy, the hazards of the energy to be controlled, and the methods or means to control the energy.
- Instruct the affected employees whose work operations are or may be in the area in the purpose and the specific lockout procedures of the host employer facility by the supervisor.
- Notify the affected employees whenever a lock-out or tag-out will occur, as well as when the equipment is being placed back in service

Employees will:

- Follow established LOTO procedures when performing maintenance or making repairs or adjustments to equipment.
- Be instructed in the safety significance of the lock-out or tag-out procedures, as well as how to use those procedures.

HSE Department will:

- Provide a program for Lock-out/Tag-out (LOTO) when employees or contractors are performing maintenance or making repairs or adjustments to equipment.
- Audit this program and make any changes to it based on changes to regulations, audits and/or incident investigation, and corrective actions.

Procedures/Requirements

Cotton employees will not initiate lock-out/tag-out and will only participate in group lock-out/tag-out operations. Typical hazards requiring isolation include:

- Electrical hazards such as direct contact with energized circuits or the unexpected electrical activation of any machine or process.
- Mechanical hazards include exposure to moving equipment or process components, such as gears, levers, fan blades, conveyors, presses, saws, drills, pump shafts, couplings, etc. The power source(s) operating the mechanical hazard may be electric motors, internal combustion engines, gas, steam, or water turbines, etc.
- Pressure hazards include direct contact with pressurized gases or liquids that may be released from tanks, pipes, valves, etc.
- Thermal energy hazards such as contact with steam systems, furnaces, open flames, burners, heaters, etc.
- Radiation hazards include exposure to various instruments, processes, etc. that utilizes radiation sources.
- Stored energy hazards include contact with electrical batteries or capacitors, pressurized gas or liquid in tanks or pipes (pneumatic, hydraulic, etc.), mechanical springs or gravity systems,

heat storage devices, transformers, etc.

- Hazardous agents such as exposure to flammable, toxic, or oxygen-deficient atmospheres as a result of accidental release of hazardous agents.

Group Lock-Out/Tag-Out

Cotton employees will always participate in a group lock-out, as well as be familiar with the Cotton Lock-out/Tag-out program. Employees must also be familiar with the host /client's program.

The supervisor will work with the site safety representative to ensure that the correct procedures are followed.

Lock-out/Tag-out Devices

Every field-level operations employee will be trained as an authorized employee to participate in lock-out/tag-out. Upon assignment to a project/location where lockout tagout is required, the employee will be issued an individually keyed, master lock. This lock will indicate the employee's name and the company name. The sole purpose of this lock is to hold an energy-isolating device in a safe position. The use of a lock is the preferred method to isolate an energy source, however, if an energy source cannot be locked out, a tag-out system will be utilized.

A tag-out device is a warning tag that is weather and chemical-resistant, standardized in size and color, with wording warning of hazardous energy (i.e., Do Not Start, Do Not Open, Do Not Energize, or Do Not Operate). The tag-out device, where used, will be affixed in such a manner as will indicate the operation or movement of energy-isolating devices from the safe or off position. If a lock can be attached, it will be used instead of a tag. Where a tag cannot be attached directly to the energy-isolating device, the tag will be located as close as safely possible to the device in a position that will be immediately obvious to anyone attempting to operate the device.

Preparation for Lock-out or Tag-out

The Cotton supervisor or authorized employee will obtain the proper Hazardous Energy Control Procedure for the equipment or machine to be locked out or tagged out. The supervisor or authorized employee will identify all affected employees by name and their job title that may be involved in the impending lock-out and/or tag-out.

Lock-out/Tag-out Energy Control of Hazardous Energy Procedures

The Client or host employer's safety representative controls the lockout tagout procedure.

All Cotton employees must follow the customer's procedure. However, if a lock-out/tag-out is not initiated by the customer in a situation where it is necessary, it is the responsibility of the Cotton supervisor/employee to insist that a lock-out procedure is initiated.

A lock-out operation will proceed by notifying all affected employees that a lock-out or tag-out system is going to be utilized and the reason thereof. The Supervisor will inform the affected employees about the type and magnitude of energy that the machine or equipment utilizes so that the hazards are understood.

A tagout-only procedure may be used if the machine cannot be locked out. If the machine is supplied electrical power from a single source, which is under the exclusive control of a trained and qualified repair person at all times and there are not any other persons in the repair area that could be harmed by the accidental energizing of the machinery, then tag-out may be used instead of lock-out/tag-out.

If the Lock-out/Tag-out has to be interrupted for safety testing the following procedure must be followed:

- Clear away all tools from the work area
- Have all employees leave the work area
- Remove the tags or locks
- Energize and proceed with the testing of the equipment
- De-energize and reapply control measures
- This procedure will be documented by the Supervisor.

Cotton employees must always adhere to the following general rules:

- Each employee will affix his or her lock or tag to the equipment being serviced, inspected, or maintained.

- No employee may remove another employee's lock or tag.
- Employees will remove their lock or tag when their part of the operation is completed.
- When service or maintenance will involve more than one shift the off-going shift will remove their locks and/or tags as the oncoming shift applies their locks and/or tags.
- When equipment has only room for one lock, the coordinator of the procedure, who is the host employer's representative, will place the lock on the equipment and place the key in a cabinet or box and each employee will affix their lock to the cabinet or box.

Service or Maintenance Involving More than One Person

When servicing and/or maintenance is performed by more than one person, each authorized employee will place his lock or tag on the energy isolating source. This will be done by utilizing a multiple lock scissors clamp if the equipment is capable of being locked out. If the equipment cannot be locked out, then each authorized employee must place their tag on the equipment.

Restoring Equipment to Normal Production Operation

Many accidents occur at the moment of re-energizing. If the machinery is to be re-energized, all persons must be kept at a safe distance away from the machinery. The re-energization can be performed only by a person who either performed the lock-out/tag-out, a person acting under the immediate and direct commands of the original lock-out/tag-out person, or, in the event of a shift change, or another unavailability of the original person, then the original will, before leaving, appoint a surrogate original person and show him or her all steps taken to lock-out/tag-out the equipment.

Ensure that all tools have been removed from the equipment and that all guards have been reinstalled.

Removal of an Authorized Employee's Lockout/Tagout by the Company

Emergency procedures for removing LOTO should include the following:

- Verification by the Supervisor that the authorized employee who applied the device is not in the facility.
- Make reasonable efforts to advise the employee that their device has been removed. (This can be done when they return to the facility).
- Ensure that the authorized employee has this knowledge before the resumes work at the facility.

Training

Lock-out/Tag-out training is provided to new hires at initial orientation and all employees annually thereafter as part of a weekly safety meeting. Training will also be conducted anytime there is a change in job assignments, machines, energy control procedures, or when a new hazard is introduced. LOTO training will be documented.

Each authorized employee who will be utilizing the LOTO procedure will be trained in the recognition of applicable hazardous energy sources, the type and magnitude of the energy available in the workplace, and the methods and means necessary for energy isolation and control.

Each affected employee (all employees other than authorized employees utilizing the LOTO procedure) will be instructed on the purpose and use of the LOTO procedure, and the prohibition of attempts to restart or re-energize machines or equipment that are locked out or tagged out.

Employees who are authorized to perform LOTO operations will be educated on how to do so before being allowed to perform maintenance, repairs, or adjustment to equipment.

Authorized employees affected by LOTO operations will be trained annually on the following:

- Recognition of hazardous energy.
- Types and magnitudes of energy.
- Means and methods of isolating and controlling energy.
- Means of verifying isolation and control of energy.
- The site-specific LOTO procedures.

Employees who are not authorized to use LOTO but are affected by LOTO operations will be trained annually on general awareness of LOTO principles and procedures. General awareness training will

include:

- Recognition of hazardous energy.
- Types and magnitudes of energy.
- Means and methods of isolating and controlling energy.
- Identification of locked or tagged equipment.

Definitions

Affected employee. An employee whose job requires him/her to operate or use a machine or equipment on which servicing, or maintenance is being performed under lockout or tagout, or whose job requires him/her to work in an area in which such servicing or maintenance is being performed.

Authorized employee. A person who locks out or tags out machines or equipment to perform servicing or maintenance on that machine or equipment. An affected employee becomes an authorized employee when that employee's duties include performing servicing or maintenance.

Capable of being locked out. An energy isolating device is capable of being locked out if it has a hasp or other means of attachment to which, or through which, a lock can be affixed, or it has a locking mechanism built into it. Other energy isolating devices are capable of being locked out if lockout can be achieved without the need to dismantle, rebuild, or replace the energy isolating device or permanently alter its energy control capability. Energized. Connected to an energy source or containing residual or stored energy.

Energy isolating device. A mechanical device that physically prevents the transmission or release of energy, including but not limited to the following: A manually operated electrical circuit breaker; a disconnect switch; a manually operated switch by which the conductors of a circuit can be disconnected from all ungrounded supply conductors, and, in addition, no pole can be operated independently; a line valve; a block; and any similar device used to block or isolate energy. Push buttons, selector switches, and other control circuit-type devices are not energy-isolating devices.

Energy source. Any source of electrical, mechanical, hydraulic, pneumatic, chemical, thermal, or other energy.

Lockout. The placement of a lockout device on an energy isolating device, following an established procedure, ensures that the energy isolating device and the equipment being controlled cannot be operated until the lockout device is removed.

Lockout device. A device that utilizes a positive means such as a lock, either key or combination type, to hold an energy-isolating device in a safe position and prevent the energizing of a machine or equipment. Included are blank flanges and bolted slip blinds.

Normal production operations. The utilization of a machine or equipment to perform its intended production function.

Servicing and/or maintenance. Workplace activities such as constructing, installing, setting up, adjusting, inspecting, modifying, maintaining, and/or servicing machines or equipment. These activities include lubrication, cleaning or unjamming of machines or equipment, and adjusting or tool changes, where the employee may be exposed to the unexpected energization or startup of the equipment or release of hazardous energy.

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

Tagout. The placement of a tagout device on an energy isolating device, following an established procedure, indicates that the energy isolating device and the equipment being controlled may not be operated until the tagout device is removed.

Tagout device. A prominent warning device, such as a tag and a means of attachment, which can be securely fastened to an energy isolating device following an established procedure, indicates that the energy isolating device and the equipment being controlled may not be operated until the tagout device is removed.

Noise and Hearing Conservation Program

Purpose

This program contains information on the effects, evaluation, and control of noise. Then develop procedures and requirements that will protect employees from hearing loss from occupational noise exposure through a continuing, effective, and comprehensive program. It describes the elements of the hearing conservation program in use at Cotton and the responsibilities of personnel administering the program.

References

29 CFR 1910.95 - OSHA's Occupational Noise Exposure standard.

Responsibilities

Supervisor will:

- Ensure that procedures to protect employees from noise in the workplace are implemented and followed.
- Enforce the use of hearing protectors

Employees will:

- Follow procedures designed to protect them against exposure to noise

HSE Department will:

- Audit this program and make any changes to it based on changes to regulations, audits and/or incident investigation, and corrective actions.
- Provide policy guidance and coordination on hearing conservation matters and serve as the principal point of contact with Federal and State regulatory agencies that control occupational exposure to hazardous noise.
- Provide information concerning noise exposure and techniques to control or eliminate employee exposure to noise in the workplace.

Danger of Noise

Exposing the ear to high levels of noise may cause hearing loss. This loss can be temporary or permanent. Temporary hearing loss or auditory fatigue occurs after a few minutes of exposure to an intense noise but is recoverable following a period away from the noise. If the noise exposure is repeated, there may be only a partial hearing recovery and the loss becomes permanent. Typically, significant hearing losses occur first in the frequency ranges of 3,000 to 6,000 (Hz). Losses in this frequency range are not critical to speech perception, and the individual usually is completely unaware of this initial symptom. With a longer exposure, the hearing loss spreads to lower frequencies, which will affect speech perception.

Workers' Compensation laws regard hearing losses in the speech frequency range of 500 to 3,000 Hz as being compensable. The evaluation of hearing loss due to noise is complicated by the fact that hearing acuity normally decreases with increasing age. Further, the losses associated with age are quite similar to those caused by excessive noise since the hearing for high-frequency sounds is most affected in both instances. Hearing impairment may also result from infections, tumors, and degenerative diseases.

Recognition of the Noise Hazard

Noise is a frequent physical hazard encountered in the industrial working environment. Workplace noises affect individuals in a variety of ways. These effects include:

- Hearing loss
- Communication interference
- Stress symptoms, including distraction, fatigue, and nervousness
- Alterations to biological functions such as blood pressure and heart rate

Hearing loss is the most significant effect but can be limited through proper control measures. Excessive noise levels can be identified by employee complaints about loudness, inability to communicate at normal speech levels, and workplace noise measurements.

Noise Hazard Evaluation

Noise measurement data obtained through sound surveys are used to determine the degree of employee exposure. This information is also used to determine ways to reduce employee noise levels below the Occupational Safety and Health Administration (OSHA) regulations of 85 dBA as an 8-hour time-weighted average (TWA) action level and the permissible exposure limit (PEL) of 90 dBA. Different instruments and measurement methods may be used depending on the type of survey conducted. To evaluate the exposure of Cotton employees any of the following three types of surveys may be conducted. These include:

- A basic sound survey to identify work areas that do not have a noise problem and areas that potentially have a noise problem.
- A detailed sound survey to estimate employee noise exposure during a workday.
- Personal dosimeter to confirm estimated sound level readings and document employee exposure.

Hearing conservation programs will be implemented when personnel are exposed to the following:

- Steady noise that has an 8-hour time-weighted average (TWA) noise level of 85A weighted decibels (dBA) or above. When appropriate, an implementation may also be stated regardless of the duration of noise exposure to 85 dBA, or greater. Those criteria apply only to energy in the audible range, up to 16,000 Hertz (Hz).
- Impulse noise of 140 peak decibels (dBA), or greater.

In a basic or detailed sound survey, sound levels are measured using a Type 2 sound level meter using a weighing scale and set to slow response. Type 2 personal noise dosimeters are worn by employees to determine noise exposure during their work shifts. Dosimeters store and integrate measurements over some time, usually an 8-hour day. The noise threshold of the dosimeter must begin at 80 decibels for compliance with OSHA's hearing conservation amendment.

Both the sound level meter and personal dosimeters must be calibrated according to manufacturer recommendations before use. Calibration information must be recorded and maintained with the results of the survey.

During data collection, the surveyor must record in detail the measurement locations and times and sound survey procedures followed. The sound level and dosimeter measurements must be recorded on the noise monitoring Data Sheet.

Monitoring will be repeated whenever a change in production, process, equipment, or controls increases noise exposure to additional employees at or above the action level. In addition, monitoring will be repeated when the noise level increases and the noise reduction capability provided by hearing protectors is inadequate to lower the noise level below the PEL or when appropriate, the action level.

Sound pressure levels will be measured in all potentially noise-hazardous work areas at least once and within 30 days of any change in operations affecting noise levels. A TWA noise level will be established for all employees working in noise-hazardous areas at least once and within 30 days of any change in operations affecting noise levels.

A current inventory of all noise-hazardous areas and operations will be maintained to include, minimally, TWAs, names of employees at risk, and the types of control measures used.

Only qualified employees will conduct noise surveys.

Establishing Noise Level Zones

Even though Cotton employees are not exposed to high levels of noise, many areas of our customer's facilities have work areas that are identified as noise level zones. If an area is marked with signs identifying the area as "Hearing Protection Required" then Cotton employees must wear hearing protection to work in that area. Signs will be posted in the area where sound levels are equal to or higher than 85 dBA.

Reducing Noise Exposure

Noise exposure can be reduced by using engineering controls, administrative procedures, or personal protective devices. Engineering controls will be the primary of reducing or eliminating employee exposure to hazardous noise.

Engineering Controls

- Reduction of noise production at the source:
- Proper design of new machines
- Modification of present machines
- Proper repair and upkeep of equipment
- Use of appropriate mufflers
- Use of vibration dampers on machines

Reduction of noise transmission:

- Increase distance between noise and personnel exposed
- Construction of barriers between noise source and personnel
- Sound treatment of ceilings and walls

- Administrative Procedures:
  - Job schedule changes
  - Personnel rotation
  - Personnel Protective Devices such as Ear plugs/Earmuffs

Federal occupational safety and health regulations require that whenever employees are exposed to excessive noise levels, feasible engineering or administrative controls must be used to reduce these levels. When these control measures cannot be completely accomplished and/or while such controls are being initiated, personnel must be protected from the effects of excessive noise levels. Such protection can, in most cases, be provided by wearing suitable protective hearing devices. A supply of hearing protective devices is distributed by the operations office. Only approved plugs should be used. Reusable earplugs should be cleaned daily to prevent ear infections. Protection greater than that provided by a single device can be obtained by wearing both devices simultaneously is considerably less than the sum of the individual attenuation; it is still greater than when either device is worn separately.

Audiometric Testing Program

All employees exposed to noise levels equal to or greater than 85 dBA as an 8-hour TWA must be included in an audiometric testing program. Audiometric testing is conducted to determine if an employee has suffered hearing loss. This loss is measured using an audiogram to detect temporary hearing threshold shift, early permanent threshold shift, or progressive noise-induced hearing loss.

An audiogram is a hearing test, which measures the ability of a person to detect various tones at different sound levels and frequencies. During the audiogram, an audiometric technician will test both ears using headphones and special sound-producing equipment. Audiometric technicians must hold current certification as Occupational Hearing Conservationists from the Council for Accreditation in Occupational Hearing Conservation (CAOHC). It is critical for audiogram accuracy that the audiometric technicians perform and document daily calibration checks and self-listening checks so audiometric function. Documentation of calibration records must be maintained. The audiometric testing program will consist of:

- Baseline audiogram within six months of the employee's first exposure at or above 85dBA. Baseline testing will be preceded by at least 14 hours without exposure to workplace noise. Hearing protection may be worn to accomplish this requirement.
- Annual audiogram, at least thereafter as long as the employees continue to be exposed at or above 85 dBA.
- Annual audiograms will be compared to the baseline to determine if there has been a standard threshold shift. A qualified technician will conduct evaluations of the audiograms. If the audiogram is an initial or baseline audiogram, compare the results with normal hearing. A standard threshold shift is a change in hearing more at 2000, 3000, and 4000 Hertz (Hz) frequency at either ear. Re-testing within 30 days after the annual audiogram should be considered before further evaluation.

If the audiometric technician or physician determines that the annual audiogram compared to the baseline audiogram indicated a valid standard threshold shift (STS), the employee will be notified of

the fact within 21 days of the determination. Also, the employee will be fitted or refitted with hearing protection offering the greatest attenuation to the noise source. The employee will be referred to a specialist (audiologist, otolaryngologist, or physician) if additional testing is necessary or if a medical pathology of the ear is caused or aggravated by wearing hearing protectors. Even if the medical pathology of the ear is not affected, the employee must be referred for further ontological examination. However, this should be handled through normal medical care.

- If the specialist determines that the audiogram is valid and confirms that the hearing loss is work-related and the program administrator concurs, the illness or injury will be recorded in the OSHA 300 log.
- If the employee is no longer exposed to noise at or above 85 dBA decibels and the audiogram stabilizes or improves, the employer may discontinue using the hearing protectors. In addition, a valid new audiogram may be substituted as a baseline for comparison with the next audiogram.
- An evaluation procedure should exist for continuously correlating the noise data with audiometric data. This evaluation will help determine the effectiveness of the Hearing Conservation Program.

Cotton employees do not currently participate in an audiometric testing program because their measured exposure to noise is less than 85 dBA.

Employee Notification

The program administrator must make notification in writing to employees exposed to noise levels equal to or greater than 85 dBA as an 8-hour TWA. This notification includes:

- Noise monitoring results
- Details of the Hearing Conservation Program
- Engineering or administrative controls are planned to reduce noise levels, if feasible.
- Types of hearing protectors available and the enforcement policy required by the noise standard.

If measured noise levels are above 85 dBA, a copy of the OSHA Occupational Noise Exposure Standard must be posted.

Hearing Protector Selection

Hearing protection devices (HPDs) are the first line of defense against noise in environments where engineering and/or administrative controls have not reduced employees' exposures to below 85 dBA. Even though Cotton employees are not exposed to an 8-hour TWA of 85 decibels or greater, there may be areas or situations where employees are required to wear HPDs.

Hearing protection is required:

- For non-routine operations in which the employee has the potential to be exposed briefly to high noise levels.
- For routine, but infrequent, operations where exposures would exceed 115 dBA.
- For operations where exposure is impulsive or impact noise, which exceeds 140 decibels peak sound pressure level.

HPD selection is the responsibility of the HSE Department. The selection process is based on the Noise Reduction Rating (NRR) method and an NRR is used to determine whether a particular hearing protector provides adequate protection with a given exposure environment by one of the following methods:

- Convert C-weighted dosimeter measurements to an 8-hour TWA. Subtract the NRR from the C-weighted TWA to obtain the A-weighted TWA under the ear protector.
- Convert an A-weighted dose to an 8-hour TWA. Subtract 7 bB from the NRR. Subtract the remainder from the A-weighted TWA to obtain an estimated A-weighted TWA under the ear protector.
- When using a sound level meter with an A-weighting, obtain the employee's A-weighted TWA. Subtract 7 dB from the NRR and subtract the remainder from the A-weighted TWA to obtain the estimated A-weighted TWA under the ear protector.

Cotton employees will be allowed to select their preferred hearing protector, either earmuffs or ear plugs from a list of manufacturers and provided at no cost to the employee. Their selection, however,

is limited to the ability of the HPD's NRR and individual noise exposures. Each employee will be fitted for the HPD and instructed on the use and care of HPDs and the proper fitting. The HSE Department will evaluate the hearing protector attenuation for the specific noise environment in which the protector will be used.

Hearing protectors must:

- Attenuate employee exposure to at least 85 dBA as an 8-hour TWA
- Attenuate employee exposure to an 8-hour TWA of 80 decibels or below for employees who have experienced a standard threshold shift.
- Be re-evaluated whenever an employee's noise exposure increases to an extent that the hearing protection provided no longer provides adequate attenuation.

Employee Training

All employees exposed to noise at or above an 8-hour TWA of 85 decibels must be included in a Hearing Conservation Training program. This training will include:

- Effects of noise on hearing
- Purpose of hearing protection, advantages, and disadvantages, and attenuation of various types of instructions on selection, fitting, and care.
- Purpose of audiometric testing and an explanation of the test procedures.
- Care and use of personal hearing protectors.

Annual training sessions will be conducted to provide employees with updated information. Attendance sheets will be taken at each session.

Record Keeping Procedure

Accurate records must be maintained to document compliance with the Hearing Conservation Program. The following records, when and if required, will be maintained at the administrative office:

- Employee noise exposure measurements. Information regarding calibration of the instruments used, the date and time of the measurements, TWA calculations, and methods used by the surveyor should be kept with the noise exposure records.
- Audiometric test records – information will include name, age, job classification, and TWA exposure; date of the audiogram, name of audiometric technician, audiometer model/SN, date of its last calibration, and technician's certification credentials.
- Employee training records including the content of course and attendance.
- Documentation of engineering/administrative controls including results of engineering sound surveys, installations completed, and noise reduction achieved, and regular maintenance of machinery and controls.
- Documentation of hearing protection devices including date of initial HPD fitting of each employee, brand, and size of HPD fitted, employees' signature for training in HPD use and care, documentation of administrators' supervision of correct and consistent HPD use, and NRR/TWA calculations showing HPD adequacy.
- Documentation of audiogram review and follow-up actions including review of each audiogram, credentials of specialists and their recommendations, and documentation that follow-up was recommended by the program administrator.

Cotton will make available to personnel copies of the Hearing Conservation Program.

On request, the company will provide affected employees with any information-type materials on the hearing conservation program that are supplied by the Assistant Secretary of Labor for Occupational Safety and Health.

On request, the company will provide personnel, former personnel, and representatives designated in writing by the individual employee, with copies of all records about the audiometric testing and noise exposure to the specific worker.

On request, the company will provide representatives of the Assistant Secretary of Labor for Occupational Safety and Health (OSHA) with all records about the company's hearing conservation program.

Records

All audiometric testing data will be maintained by the Cotton HR department for the duration of employment plus 30 years. Results of hearing tests performed for hearing conservation, as well as exposure documentation, will be a permanent part of an individual's health record.

Noise exposure data will be kept for a minimum of 30 years and recorded or in the equivalent format of automated measurement equipment or health hazard inventory system that contains at least the mandatory data elements.

Hearing Conservation Program Evaluation

Evaluation of the program is necessary to determine its effectiveness in limiting noise-induced hearing loss in the workplace. The only objective indication of whether the HCP is successful in preventing occupational hearing loss is to analyze audiometric test results. Audiometric Data Base Analysis (ADBA) looks at the total variability in employees' hearing threshold measurements. (*Royster and Royster*)

Two variability procedures are commonly used. They are based on counting the percentage of employees whose hearing shows changes of 15 dB or more between two sequential (consecutive) annual audiograms. Threshold changes are counted both toward better hearing and toward worse hearing to yield values of these two ADBA procedures:

- Percent Worse Sequential (%Ws): the percentage of employees who show a worsening of 15 dB or more in thresholds for at least one test frequency (500 Hz through 600 Hz) in either ear between 2 sequential audiograms.
- Percent Better or Worse Sequential (%BWs): the percentage of employees who show either an improvement or worsening of 15 dB or more in thresholds for at least one test frequency in either ear between two sequential audiograms.

Note that before either procedure is applied, the population must be restricted to a group of workers who all have a specified number of audiograms. Table 1 defines ranges of that which indicate the HCPs, quality as acceptance, marginal or unacceptable.

TABLE 1

HCP Rating	Over First Four Test Comparisons	Over Later Test Comparisons	
	% Ws	5Ws	%BWs
Acceptable	<20	<17	<26
Marginal	20 to 30	17 to 27 26 to 40	
Unacceptable	>30	>27	>40

HCP Effectiveness Classification and Corresponding Recommended Value Ranges for TWO ADBA Procedures Applied to Sequential Test Comparisons with No Age Corrections: Percent Worse (%Ws) and Percent Better or Worse (%BWs).

Definitions

Action level - An 8-hour time-weighted average of 85 decibels measured on the A-scale, slow response, or equivalently, a dose of fifty percent.

Audiogram - A chart, graph, or table resulting from an audiometric test showing an individual's hearing threshold levels as a function of frequency.

Audiologist - A professional, specializing in the study and rehabilitation of hearing, who is certified by the American Speech-Language-Hearing Association or licensed by a state board of examiners.

Baseline audiogram - The audiogram against which future audiograms are compared.

Criterion sound level - A sound level of 90 decibels.

Decibel (dB) - Unit of measurement of sound level.

Decibel A-weighted (dBA): The standard abbreviation for sound levels measured with an instrument set to the A-weighting network. The A-weighting network reduces the contribution of lower frequencies, which are of less concern for hearing conservation.

Decibel (dB): A unit of measurement of sound pressure level. The sound pressure level, in dB, is equal to 20 times the common logarithm of the ratio of the existing sound pressure to a reference sound pressure of 20 micropascals.

Decibel Peak (DBP): Standard abbreviation for peak sound level equal to 20 times the common logarithm of the ratio of the highest instantaneous sound pressure to a reference pressure of 20 micropascals. Used in the measurement of impulse noise.

Hazardous Noise: Exposure to steady state noise equivalent to 85 dBA for 8 hours. Components may define time-intensity trading rates as appropriate for their rest cycle conditions using subsection a.1. of enclosure 3. Exposure to impulse noise levels greater than 140 DBP.

Hazardous Noise Area: Any work area where workers are likely to receive a daily total noise dose above that calculated using subsection B., enclosure 3, or where impulse noise levels exceed 140 DBP. For personnel exposed to appreciable nose levels for periods of 24 hours or more, a daily dose of 100 percent can occur at continuous noise levels as low as 79 dBA.

Hertz (Hz) - Unit of measurement of frequency, numerically equal to cycles per second.

Impulse Noise: A short burst of acoustic energy consisting of either a single impulse or a series of impulses. The pressure time history of a single impulse includes a rapid rise to peak pressure, followed by a somewhat slower decay of the pressure envelope to ambient pressure, both occurring within 1 second. When the intervals between impulses are less than 500 milliseconds, the noise is considered continuous, excepting short bursts of automatic weapons, and fire, which are considered impulse noise.

Medical pathology - A disorder or disease. For purposes of this regulation, a condition or disease affecting the ear should be treated by a physician specialist.

Noise dose - The ratio, expressed as a percentage, of (1) the time integral, over a stated time or event, of the 0.6 power of the measured SLOW exponential time-averaged, squared A-weighted sound pressure and (2) the product of the criterion duration (8 hours) and the 0.6 power of the squared sound pressure corresponding to the criterion sound level (90 dB).

Noise dosimeter - An instrument that integrates a function of sound pressure over some time in such a manner that it directly indicates a noise dose.

Presbycusis: Hearing loss due to age.

Otolaryngologist - A physician specializing in the diagnosis and treatment of disorders of the ear, nose, and throat.

Representative exposure - Measurements of an employee's noise dose or 8-hour time-weighted average sound level that the employers deem to be representative of the exposures of other employees in the workplace.

Significant Threshold Shift (STS) -The STS is the same as the OSHA standard threshold shift. An STS is present when there is a change in hearing threshold relative to the baseline audiogram of an average of 10 dB or more 2000, 3000, and 4000 Hz in either ear.

Sound level - Ten times the common logarithm of the ratio of the square of the measured A-weighted sound pressure to the square of the standard reference pressure of 20 micropascals. Unit: decibels (dB). For use with this regulation, SLOW time response, per ANSI S1.4-1971 (R1976), is required.

Sound level meter - An instrument for the measurement of sound level.

Time-weighted average sound level - That sound level, which if constant over an 8-hour exposure, would result in the same noise dose as is measured.

Personal Protective Equipment

Purpose

Cotton will provide suitable Personal Protective Equipment (PPE) to reduce the likelihood of work-related injuries or illnesses. Personal Protective Equipment is the last resort means of protecting workers from injury. PPE is only employed when engineering and administrative controls are ineffective or insufficient.

References

29 CFR 1910.132 – General requirements.
29 CFR 1910.133 – Eye and face protection.
29 CFR 1910.134 – Respiratory Protection.
29 CFR 1910.135 – Head protection.
29 CFR 1910.136 – Occupational foot protection.
29 CFR 1910.137 – Electrical protective devices.
29 CFR 1910.138 – Hand Protection.

Responsibilities

Supervisor will:

- Ensure that the selected PPE is effective in eliminating or reducing the likelihood of injury or illness from workplace hazards
- Issue PPE to employees.

Employees will:

- Follow this procedure regarding the maintenance and use of PPE.

HSE Department will:

- Provide guidelines for the selection and use of PPE.
- Audit this program and make any changes to it based on changes to regulations, audits and/or incident investigation, and corrective actions.

Selection of PPE

Personal Protective Equipment, unlike most safety devices, is designed to prevent injury or illnesses rather than to prevent accidents. Therefore, the use of personal protective equipment will not be considered the ultimate in employee protection. Engineering controls to eliminate or minimize occupational health hazards will be considered first and foremost. Required PPE will be provided by Cotton unless otherwise stated.

Locations will be responsible for conducting Job Hazard Analysis to assess personal protective equipment needs. Once it has been established that PPE is needed for a designated job, the degree of protection required, and the degree of protection afforded by a piece of equipment will govern the selection.

Personal protective equipment under consideration will meet accepted performance specifications and standards. The comfort and ease with which a piece of equipment can be used or worn will be an important factor in its selection.

Issued PPE

The site supervisor will issue PPE to employees to protect Cotton employees from workplace hazards. The HSE Department is available for consultation if needed. Cotton or the host employer will provide all PPE. Employee-owned PPE will not be permitted unless first approved by the Site Supervisor. Employee-owned PPE must meet the same specifications as PPE issued by Cotton, and its maintenance, inspection process, and use must be following Cotton requirements. All PPE must be

maintained in a sanitary and reliable condition.

Defective or damaged PPE will not be used and will be repaired or replaced immediately. If new PPE is needed the employee should notify the supervisor at their job site. PPE that is not one size fits all or cannot be adjusted, will be properly sized or fitted to each employee.

Host Employer

If the host facility has a PPE policy that at a minimum meets the requirements of this procedure, then it should be followed. If the host facility does not have a PPE policy, then this policy must be followed and enforced on all Cotton job sites. In the case where multiple PPE policies exist, the most stringent of the policies will be followed. It is the responsibility of the site supervisor and/or site safety to determine which PPE policy will be followed and enforced. If the host facility's policy will be followed, a copy of the policy must be obtained by the site supervisor and/or site safety for reference and training purposes.

GENERAL PPE

Personal Protective Equipment is designed and required to provide an effective barrier between a person and a potentially dangerous object, substance, process, etc. Mandatory use of PPE, as determined by management, is not subject to debate or discussion. Not using the required PPE will subject employees to disciplinary action.

At a minimum, the following PPE will be used by Cotton employees:

- High Visibility Shirt or Vest
- ANSI-approved steel-toed footwear or composite toe footwear (based on service line)
- Work pants (no shorts)

Based on job-specific PPE assessments, it may also be necessary to use the following specialized PPE:

- Work gloves
- Hard Hats
- Safety Glasses
- Foot Protection
- Respiratory protection
- Fall protection
- Hearing protection
- Flame retardant clothing
- Goggles
- Face shields

PPE Use and Inspection

Personal Protective Equipment will be worn following the manufactures recommendations. All Personal Protective Equipment must be inspected before each use each day by the employee.

Hand Protection

Few job tasks do not involve the use of your hands. Proper hand protection will be worn by all employees while working. Gloves will also be worn while carrying tools, equipment, or handling leads. Without proper preparation, planning, and protection hand injuries can be common.

Looking for pinch points, sharp edges, stored energy, and improper machine guards before work begins can prevent serious injuries or even permanent hand restrictions. Approved chemical-resistant gloves should be worn when handling materials that can damage, irritate, or penetrate the skin.

Gloves must be inspected for the following*:*

- Proper size and fit
- Free of tears and rips
- Ensure the glove is right for the job task
    - Leather - General use
    - Rubber - Chemical exposure (various types of gloves depending on the chemical)
    - Kevlar - Handling sharp materials

- High Heat - Handing hot material

It is very important to remember: “Gloves do not protect hands from pinch points!”

Protective Headgear

Hard hats will be worn by all personnel when there is a danger of falling objects or head bumps from overhead objects. Metal hard hats are prohibited for use by Cotton employees. All hard hats must conform to the requirements of ANSI Z89. If there are any signs of wear or damage, replace the suspension and/or shell immediately. Never alter or modify the shell or suspension system. This reduces the protection factor of the hard hat.

Hard hats will be inspected for the following:

- Cracks, damage, and weaknesses in the shell.
- Ensure the suspension has not been weakened or altered.
- Employees are prohibited from throwing, dropping, or sitting on hard hats.
- The bill of the hard hat will be above the employee's face and not turned around.
- No materials between the shell and suspension.

NOTE: Excessive coverage of paint or hard hats stickers may prevent quality inspection.

Eye Protection

All Cotton personnel will wear approved eye protection while at a field worksite according to the JHA onsite. All safety glasses, face shields, and goggles must conform to the specifications of ANSI Z87. ANSI-approved safety glasses will be worn by employees using a nail gun. Shaded glasses are not to be worn inside buildings, in low-light work areas, before dawn, or after dusk. Eye cup goggles or goggles may be required during extremely windy conditions where dust and other flying particles become abundant. Eye wash stations are located in several areas in process units and should be located before work begins. The anti-fog solution can be applied to glass and plastic eye protection to improve visibility. If vision correction is necessary prescription safety glasses with side shields must be used. Additional eye protection in the form of goggles and/or a face shield may also be required while performing or near the following operations:

- Hammering, cutting, chipping, or scraping; metal, stone, concrete, paint, wood, or insulation
- Acids, caustics, or any operation exposing the eyes and face to corrosive or chemical splashing, misting, or dust
- Scaling, grinding, cutting, or dressing of metal, stone, or masonry materials
- Use of any power tool including woodworking tools that produce flying dust or particles
- Working in the vicinity of blowing compressed air
- Welding, cutting, brazing, and similar operations where protection from radiant energy or molten metal particles or slag
- Any other situation where the Supervisor in charge deems such eye and face protection is required

Protective Clothing

Some job tasks or job locations may require body protection. All shirt tails will be tucked in before entering a fieldwork site unless performing a welding operation. All personal clothing, slicker suits, aprons, and disposable coveralls must be free of holes, and tears, and must be the correct size for the employee. Disposable coveralls will be appropriate for the hazard and disposed of properly after each use.

Respiratory Protection

Respirators are used to protect employees from inhalation hazards, toxic atmospheres, and oxygen-deficient atmospheres. Employees will receive NIOSH-certified respirators, an OSHA-approved fit test, respirator-specific training, and a medical evaluation at no cost to the employee before utilizing respiratory protection. A 5-minute escape bottle will be utilized by each employee for all IDLH atmospheres. Grade “D” or better air will be verified by the Supervisor for supplied air respirators (SAR). All respirators must be cleaned after each use and stored in a location free from damage and

contamination. Plastic bags are available to employees to store respirators if the original bag becomes damaged or contaminated. Respirators will not be left unprotected in a work area. All respiratory protection must be inspected before each use by the employee for the following:

- Lenses must be clean and free of excessive scratches or paint
- Check elastic and rubber straps for dry rot and proper elasticity
- Must be the correct size and manufactured according to fit test card
- Proper valve and hose operation
- Check seal area for damage, cracks, and distortion

Fall Protection

Falls from elevated heights are the most likely type of incident to result in a fatality. A full body safety harness with the “D” ring in the middle of the back is required when there is a fall exposure of six feet or more. All Cotton employees will receive training per the Fall Protection section of this safety manual before utilizing any fall protection. Cotton requires the use of shock-absorbing lanyards with double-action safety hooks.

Employees will inspect fall protection equipment before and after each use for the following:

- Belts and straps must be free of frays, broken fibers, damaged stitches, cuts, burns, or chemical damage
- Check the “D” ring and wear pad for distortion, cracks, breaks, and rough or sharp edges
- Inspect buckles and rivets for loose or damaged parts
- Inspect the webbing joints to ensure they are not loose
- Inspect the hooks for distortion, cracks, corrosion, and pitted surfaces
- Ensure the latch seats and locks without binding and should be not distorted or cracked
- Swelling, discoloration, cracks, and charring are obvious signs of chemical or heat damage
- Closely inspect the area where the webbing and the hooks attach for sharp edges and fraying

Hearing Protection

The effects of noise depend on how loud the noise is and the length of time you are exposed to the noise. Hearing protection in the form of ear plugs, earmuffs, or a combination of both is mandatory when sound levels exceed the OSHA eight-hour time-weighted average. Cotton employees will properly wear hearing protection at 85dba or where the client's hearing protection policy requires it.

Protective Footwear

All Cotton employees will wear ANSI-approved steel-toed footwear or composite toe footwear. Exceptions will be made for certain service lines based on job-specific PPE assessments and must be approved by HSE. Safety footwear is shoes or boots that have a protective sole and a good tread design for improved traction. Protective footwear that has holes, rips, tears, or loose or worn soles will be replaced.

PPE - Hazard Assessment

The first critical step in developing a comprehensive safety and health program is to identify physical and health hazards in the workplace. This process is known as a “hazard assessment.” Potential hazards may be physical or health-related and a comprehensive hazard assessment should identify hazards in both categories. Examples of physical hazards include moving objects, fluctuating temperatures, high-intensity lighting, rolling or pinching objects, electrical connections, and sharp edges. Examples of health hazards include overexposure to harmful dust, chemicals, or radiation. The hazard assessment should begin with a walkthrough survey of the facility to develop a list of potential hazards in the following basic hazard categories:

- Impact
- Penetration
- Compression (roll-over)
- Chemical
- Heat/cold

- Harmful dust
- Light (optical) radiation
- Biologic

In addition to noting the basic layout of the facility and reviewing any history of occupational illnesses or injuries, things to look for during the walkthrough survey include:

- Sources of electricity
- Sources of motion such as machines or processes where movement may exist could result in an impact between personnel and equipment.
- Sources of high temperatures that could result in burns, eye injuries, or fire.
- Types of chemicals used in the workplace.
- Sources of harmful dust.
- Sources of light radiation, such as welding, brazing, cutting, furnaces, heat treating, high-intensity lights, etc.
- The potential for falling or dropping objects.
- Sharp objects that could poke, cut, stab or puncture.
- Biologic hazards such as blood or other potentially infected material.

When the walkthrough is complete, you should organize and analyze the data so that it may be efficiently used in determining the proper types of PPE required at the worksite. Consider the different types of PPE available and the levels of protection offered. It is a good idea to select PPE that will provide a level of protection greater than the minimum required to protect employees from hazards. The workplace should be periodically reassessed for any changes in conditions, equipment, or operating procedures that could affect occupational hazards. This periodic reassessment should also include a review of injury and illness records to spot any trends or areas of concern and take appropriate corrective action. The suitability of existing PPE, including an evaluation of its condition and age, should be included in the reassessment.

Documentation of the hazard assessment is required through a written certification that includes the following information:

- Identification of the workplace evaluated
- Name of the person conducting the assessment
- Date of the assessment
- Identification of the document certifying completion of the hazard assessment

Document it using a form similar to the one featured below.

Instructions: Use this form to help identify PPE required within each work location. Multiple forms may be used, as needed, to include all work areas or job functions within each area of concern. Use the Assessment list to complete the form. If no apparent hazards exist write "None."

Workplace Hazard—Personal Protective Equipment (PPE) Assessment Form						
Division:		**Job Function/Activities:**				
Office/Shop:						
Work Location(s):						
Hazards Present (Check all that apply)	**Describe Hazards** (e.g., work with glass, flying dust from equipment, manually filling containers of chemicals, etc.)	**Personal Protective Equipment to Consider** (Complete appropriate boxes with the specific PPE required, e.g., hard hats, goggles, safety glasses, face shields, earplugs, steel-toed shoes, etc.)				
		Eye	**Hand**	**Head**	**Clothing**	**Foot**
☐ **Impact**						
☐ **Cuts/Penetration**						
☐ **Pinch/Crush/ Roll Over**						

☐ **Thermal (Hot/Cold)**						
☐ **Light (optical) Radiation**						
☐ **Chemical**						
☐ **Biological**						
☐ **Electrical**						
☐ **Other**						

☐ Check here if **sound pressure level (+85db/8hr) exposure monitoring** should be considered for this job function or activity.
☐ Check here if **dust (harmful or nuisance) level exposure monitoring** should be considered for this job function or activity.

Assessment completed by: _____ Title: _____
Phone: _____
Signature: _____ Date: _____

HSE Department to record the form as evidence of a PPE assessment of the site/area.

When Cotton employees encounter an unusual, unexpected, or non-routine hazard, a hazard assessment will be performed by the site supervisor, and Cotton's safety manager will certify the identity of the assessment. If unusual hazards are found, employees will be provided with properly fitted protective equipment suitable for protection against the identified hazards. This assessment must be conducted, and certification of the hazard assessment must be maintained by the HSE Department.

The following table represents Personal Protective Equipment (PPE) that is available for the protection of employees.

Contact the Safety Department immediately with any matters concerning Personal Protective Equipment.

Eyes	Head and Feet	Protective Clothing	Hand	Respiratory	Fall Protection	Hearing
Safety Glasses	Hard Hat	Long Sleeve Shirt & Pants	Leather Gloves	Half Face Respirator	Full Body Harness	Ear Plugs
Side Shields	Rubber Boots	Long Pants	Chemical Gloves	Full Face Respirator	Safety Net	Earmuffs
Goggles	Steel toe or Composite toe footwear.	Chemical Apron	Kevlar Gloves and Sleeves	SCBA	Vertical Lifeline	
Face Shield		Slicker Suit	Impact Gloves	Supplies Air Respirator	Horizontal Lifeline	
		FRC Clothing	Cut Resistant Gloves		Self-Retracting Device	
		Tyvek Coveralls			Self-Retracting Lanyards	

Employee Training

All employees will be trained on the use, care, and maintenance of PPE required for their job task or work area during employee orientation. Training will be provided by a person competent in PPE hazard assessments, use, and maintenance.

Training will consist of the following:

- Nature of physical or chemical hazards in the job task or work area,
- PPE is necessary when performing job tasks or working in a work area,
- Proper techniques for donning, doffing, adjusting, and wearing each PPE type,
- Limitations of each PPE type,
- Useful life and disposal of each PPE type.
- Employee demonstrations of skills necessary for wearing, adjusting, cleaning, and maintaining each PPE type.

Training Certifications and Records

All training will be documented by employees signing a Training Record Form. This form must be completed in its entirety by the trainer to reflect the following:

- The identity of the employee
- Date of training
- Instructors name and signature
- Course description
- Test to verify that employees understood the training.

Retraining

Employees will be retrained annually or whenever it is discovered that deficiencies exist in PPE use or maintenance, or when changes occur to PPE rendering the previous training obsolete.

Respiratory Protection Program

Purpose

Toxic materials can enter the body in three primary ways: by skin absorption, ingestion, and inhalation. Of these three paths, the human respiratory system represents the quickest and most direct route of entry due to its close association with the circulatory system and the constant flow of oxygenated blood to body tissues.

This procedure describes requirements to ensure the protection of all employees from respiratory hazards through proper selection and use of respirators. Respirators are to be used only in areas where engineering controls are not feasible while engineering controls are being installed, or in emergencies.

Requirements

29CFR1910.134

Responsibilities

Supervisor will:

- Ensure employees who may be required to wear respiratory protection equipment to perform their job duties have been deemed physically capable of doing so.
- Ensure employees who may be required to wear respiratory protection equipment to perform their job duties have sufficiently educated per the requirements of this section.
- Ensure availability of necessary respiratory protective equipment for employee use and provide a location to store this equipment so that it is kept away from the elements and secure from theft. If an employee normally wears prescription glasses, he/she will be provided with a full-face respirator mask that can be fitted with corrective lenses in the face shield.

Employee will:

- Participate in respiratory protection training.
- Participate in fit testing of respiratory equipment.
- Complete the medical evaluation questionnaire.
- Use respirators as instructed during training and according to specific manufacturers' recommendations.

HSE Department will:

- Define the minimum respiratory protection requirements for Cotton locations and operations.
- Audit this program and make any changes to it based on changes to regulations, audits and/or incident investigation, and corrective actions.

Respiratory Protection Program Administrator

It will be the responsibility of the Respiratory Protection Program Administrator (Chasity Mester – Sr. HSE Manager) to administer all components of the Cotton Respirator Protection Program. They may designate other employees to assist in the operation of this program, to ensure the following guidelines are met:

- Respirator selection will be based on potential exposure hazards.
- A written program is developed and implemented.
- All identified Cotton personnel are trained in the proper selection, use, maintenance, and storage of respiratory protection equipment.
- Work areas are monitored for respirable hazards to determine the degree of exposure (performed by the host-facility operator, safety personnel, or responsible party).
- Fit testing is documented for each person wearing a negative pressure respirator.
- Procedures are developed for cleaning and sanitizing respirators.
- Provide convenient, clean, sanitary storage facilities for respirators.
- Annual audits and inspections regarding the maintenance of respiratory equipment are performed.

- All respirator users are medically evaluated to determine their fitness to wear a respirator.
- Authorize the exclusive use of NIOSH/MSHA-approved respiratory equipment.
- Evaluate the Respirator Protection Program regularly to ensure its continued effectiveness.

Requirement and Procedures

It will be the responsibility of each identified Cotton employee to use the provided respiratory equipment following all instructions and training that is provided, whether by Cotton management personnel or outside contract training sources. Each designated employee will inspect the respirator before use, and if found defective, return it at once to the Respiratory Protection Program Administrator. The respiratory equipment, training, and medical evaluations will be provided at no cost to the employee.

The primary method of minimizing employee exposure to respirator hazards is engineering and/or administrative controls. If engineering and/or administrative controls are not practical, or feasible for the control of workplace respiratory hazards(s), then the requirements of this procedure, as well as local/regional requirements must be met.

An initial evaluation of the workplace will be made to identify respiratory hazards, and suitable respiratory protection equipment to protect the employee from those hazards.

Respirator Selection Guidelines

Various types of respirators have their intended purpose and limitations. No single respirator is appropriate for all jobs.

The proper selection of the identified respirator(s) will be made only after considering:

- The air contaminants to be encountered.
- The type of work activity
- The workspace
- The duration of exposure
- The amount of oxygen present
- Environmental or process conditions
- The ANSI Z88.2-1969 & 1980 publications entitled “Practices for Respiratory Protection”.
- The NIOSH respirator Decision logic guideline (see attached)

Consideration of these identified criteria will be utilized during a hazard assessment of each assigned job site, to determine any hazards to which any employee could be exposed. This will be performed by Cotton management or the host-facility operator.

Respirator Type	Approved Uses
Dust mask	Nuisance dust only No hazardous contaminants
Air purifying respirator - Half Mask	Particulate, gas, or vapor contaminants with no immediate danger to life or health (Not IDLH) * Little or no eye hazards/ irritants Enough oxygen level exists
Air-supplied (airline) abrasive-blasting respirator (hood or helmet) **	Abrasive blasting operations
Full facepiece - air-supplied respirator (airline) with an auxiliary self-contained air supply of 15 minutes (to ensure escape from an IDLH atmosphere) **	Oxygen deficient atmospheres IDLH atmospheres Mobility is not an issue
Full facepiece - pressure demand SCBA (minimum service life of 30 minutes) **	Oxygen deficient atmospheres IDLH atmospheres Mobility of the wearer is an issue Escape from the contaminated atmosphere that may be immediately dangerous to life or health

* When using air-purifying respirators for protection against gasses or vapors, one or both of the

following must be adhered to:

- The respirator will be equipped with an end-of-service-life indicator (ESLI) certified by NIOSH for the contaminant.
- A changing schedule for canisters and cartridges will be implemented and followed that is based on objective information or data that will ensure that canisters and cartridges are changed before the end of their service life.

** When using an air-supplied respirator of any type (airline or SCBA), the breathing air quality must meet the following minimum requirements:

- Oxygen content of 19.5% - 23.5%.
- Hydrocarbon (condensed) content of 5 milligrams per cubic meter of air or less.
- Carbon monoxide (CO2) content of 10 PPM or less.
- Carbon dioxide (CO2) content of 1,000 PPM or less.
- Lacks any noticeable odor.

We have selected the following respirator(s) for use:

- 3M Full Face 6700
- 3M Half Face 6300/07026
- North Half Face 7700
- 3M Half Face
- 3M – 6000 Series
- North – 7700 Series
- 3M Full Face – 7800
- North – 7600 Series
- Scott - AV-3000 & Up

NOTE: Only respirators that have been tested and certified or jointly approved by the Mine Safety and Health Administration (MSHA) of the Department of Labor, and the National Institute of Occupational Safety and Health (NIOSH) of the Department of Health and Human Services, will be used.

Medical Evaluation

The location will ensure a physician, or qualified medical professional, performs a medical evaluation, to determine the employee's ability to use a respirator before the employee is fit tested or required to use the respirator in the workplace.

For the physician, or qualified medical professional to determine if an employee is fit to perform the assigned job duties, they must be made aware of:

- The type and weight of the respirator to be used.
- The duration and frequency of respirator to use (including use for rescue and escape purposes).
- The expected physical work effort.
- Additional protective clothing and equipment are to be worn.
- Temperature and humidity extremes are to be encountered while wearing equipment.

Before the medical evaluation, the employee will complete a Respiratory Medical Evaluation Questionnaire, and provide it to the physician, or qualified medical professional who will be performing the evaluation.

The Respiratory Medical Evaluation Questionnaire will be administered:

- Confidentially during the employee's normal working hours or at a time and place convenient to the employee.
- In a manner that ensures that the employee understands its content.

The examining physician or qualified medical professional will determine if the employee can wear a

respiratory and document such results on the Medical Approval Form or equivalent. The Cotton Human Resources Department will maintain these records.

After the medical evaluation is performed, the employee must be provided an opportunity to openly review the questionnaire, and results of the physical with the physician, or qualified medical professional.

Follow-up Medical Evaluation

Follow-up medical evaluation will be performed when:

- The physician, qualified medical professional, employee supervisor, or program administrator determines there is a need based on the initial examination.
- The employee reports medical signs or symptoms that are related to their ability to use a respirator.
- A change occurs in workplace conditions (e.g., physical work effort, protective clothing, temperature) that may result in a substantial increase in the physiological burden placed on an employee.

General Program Guidelines

Each negative pressure respirator user must be trained and receive initial quantitative fit testing before being issued a respirator selected for their specific work area or assigned job task. Certification of this training will be documented and maintained by the Respiratory Protection Program Administrator.

Fit tests will again be conducted for any identified respirator wearer who has a 10% body weight change, receives significant facial scarring, dental changes, reconstructive or cosmetic surgery, or any other condition, which may affect the respirator fit.

Use of Respiratory Protection Equipment

Under no circumstances will respirator wearers be allowed to remove their respirators in an environment where respiratory hazards exist.

Employees with facial hair, or any condition that interferes with the face-to-face piece seal, will not be allowed to wear respirators with tight-fitting face pieces.

Corrective glasses or goggles, or other personal protective equipment, will only be worn in a manner that does not interfere with the seal of the face piece to the face of the user.

When wearing respiratory protection equipment, employees will be required to leave the respirator use area:

- To wash their faces, and respirator face pieces, as necessary to prevent eye or skin irritation associated with respirator use.
- If they detect vapor or gas breakthrough, changes in breathing resistance, or leakage of the face piece.
- To replace the respirator or the filter, cartridge, or canister elements.

Before each use

Negative pressure and a positive pressure user seal check of air-purifying respirators will be performed before each use. These tests can be performed by the user with the following procedure:

1. Cover both inlet cartridges with the palms of your hands, then inhale and hold your breath for 10 seconds. (If any leaks are detected, re-adjust the respirator on the face and pull straps tighter, and then repeat the process. Do not tighten the straps to the degree where the respirator cuts off blood circulation).
2. Cover the exhalation valve(s) with the palms of the hands, and then gently exhale. (If a slight positive pressure buildup occurs inside the face piece, a good seal is achieved).

Fit Testing

An improperly selected or poorly fitting respirator can present a false sense of security to the wearer.

Each person should know how to select and put on the respirator, adjust it correctly, and determine if it fits correctly.

Respirator components may be similar in size, shape, or color, but cannot be interchanged between manufacturers.

Filtering materials or filter cartridges will be specific to the identified contaminants present in the employee's work area. They will be clean, unused, and sealed from any possible type of contamination.

The assigned workplace area will be provided with an atmospheric oxygen concentration that is greater than 19.5% but less than 23.5%. (Negative air-purifying respirators are not allowed unless this exists).

Any employee required to wear a respirator will be clean shaved daily, between the sealing surface of the respirator and the face, (no full beard, long mustache, goatee, extended sideburns, or long hair that extends into the sealing area of the respirator).

Respirator users must receive an initial and an annual quantitative or qualitative fit test, by someone who is trained to perform such tests, using the same make, model, style, and size of respirator that will be used in the workplace.

Respirators will be inspected for defects making sure all inhalation and exhalation valves and valve covers are in place and good physical condition, head, and neck straps are secured to the respirator body and if needed, adjusted properly. A positive and negative pressure fit check will be performed by any employee wearing a negative air purifying respirator, before performing assigned job tasks in respirator-required workplace areas.

The respirator wearer will know the limitations of the assigned equipment, as well as the signs and symptoms of potential workplace exposure contaminants that would indicate a chemical breakthrough or filter saturation has occurred. (These may include, but are not limited to, abnormal breathing pattern, shortness of breath, difficulty breathing, detecting a chemical or particulate warning property by noticing a peculiar chemical taste, irritation, or smelling an unusual odor.)

Qualitative fit tests

Qualitative fit tests will be used for testing half-face respirators and positive pressure respirators only. Employees requiring the use of tight-fitting full-face piece negative pressure respirators must have a quantitative fit test conducted before use to achieve the protection factor of the respirator.

Additional fit tests are required whenever the employee reports, or the supervisor, or program administrator makes visual observations of, changes in the employee's physical condition that could affect respirator fit. Such conditions include, but are not limited to, facial scarring, dental changes, cosmetic surgery, or an obvious change in body weight.

Written documentation of fit testing will be maintained on file and will include the following:

- The name or identification of the employee tested.
- Type of fit test performed.
- Specific make, model, style, and size of respirator tested.
- Date of test.
- The pass/fail results for qualitative fit tests, or the fit factor and strip chart recording, or the recording of the test results for quantitative fit tests.

Air Purifying Respirators

A respirator with an air-purifying filter, cartridge, or canister that removes specific air contaminants by passing ambient air through the air-purifying element will be used by employees. Air purifying respirators should not be used when contaminant cannot be recognized by taste, smell, or irritation at/or below the permissible exposure limit (PEL). Air purifying respirators should not be used in oxygen-deficient atmospheres and in atmospheres that are immediately dangerous to life or health (IDLH).

Self-Contained Breathing Apparatus (SCBA)

An SCBA is an atmosphere-supplying respirator for which the breathing air source is designed to be carried by the user. Supplied-air respirator (SAR) or airline respirator means an atmosphere-supplying respirator for which the source of breathing air is not designed to be carried by the user.

Requirements for IDLH Atmospheres

Supplied breathing air equipment must be used and will be equipped with egress bottles when in IDLH atmospheres. Rescue personnel must be present with the appropriate respiratory protection, but outside the hazardous atmosphere. Constant communications must be maintained between personnel in the IDLH atmosphere and the rescue personnel. The persons in the IDLH atmosphere must wear a harness and safety line to facilitate rescue or equivalent rescue provisions made.

Air Supplied Respirators

Airline couplings for breathing air will be incompatible with outlets for any other gas systems.

Breathing air sources and outlets will be labeled to indicate their use and contents. The air supplied must meet quality specifications for Type 1 Grade D air described by ANSI/CGA G-7.0 (1989). These systems will have a low-pressure alarm.

Compressed Bottle Breathing Air

Compressed breathing air is the preferred source of breathing air supply. Cylinders of purchased breathing air have a certificate of analysis from the supplier that the breathing air meets the requirements for Grade D breathing air. Cylinders must not be used until the certificates are read and must be kept with the cylinder.

Additional testing must be performed if requested by the user.

Compressor Supplied Breathing Air

A breathing air type compressor, designed and located to avoid entry of contaminated air into the system, must be used. Suitable in-line air-purifying sorbent beds and filters must be installed to ensure air quality.

Compressors must also have alarms to indicate compressor failure and/or overheating. Oil lubricated compressors must have a high temperature or carbon monoxide alarm or both. If only a high-temperature system is used, the air must be tested daily before use and periodically thereafter for carbon monoxide.

A stand-by person must be in the vicinity of the compressor to shut down the job in the event of a compressor problem or the compressor must have an automatic shutdown system.

Analysis of Breathing Air Cylinder(s)

Compressed Breathing Air used for human application will be tested for Oxygen and Carbon Monoxide content before human inhalation to verify that it meets Grade “D” Breathing Air. Grade “D” Breathing Air will comply with OSHA respiratory protection standard, 29 CFR 1910.134, requiring that the breathing air must meet the specifications prescribed by the Compressed Gas Association in their publication titled Commodity Specification for Air, ID#G-7.1, and since the oxygen content in the breathing air is a requirement of CGA G-7.1, oxygen content must be verified in the air source. This will be accomplished by obtaining a “Certificate of Analysis” from the supplier that states that the air meets the requirements for Grade “D” breathing air. The certificate of analysis must accompany all purchased cylinders of breathing air to be accepted by the company.

The Company will ensure that the breathing air is within acceptable quality ranges before being made available by analyzing with an acceptable measuring instrument that is capable of measuring oxygen and carbon monoxide. Readings obtained through the company’s instrument will be within 95% agreement with the certificate of analysis provided by the vendor.

Analysis for Grade “D” fresh air is as follows:

Single Bottle Test in Multiple Bottle System

1. Bottle flow will be isolated from all other systems attached.
2. A regulator adaptor will be installed on the manifold attached to the air system.
3. The valve for that bottle will be opened and allow flow for a minimum of 20 seconds to purge the system.
4. Using a today calibrated monitor, an approved sampling hose will be attached to the regulator adaptor.
5. Readings will be monitored and documented.
6. Repeat steps 1-5 for each bottle.

Documentation produced will be maintained at the Safety Department and a copy will be posted along with the supplier's certificate of analysis.

The Safety Department personnel and appointed designees will be trained on full-span Calibrations, bump tests, conducting analysis of fresh air, and completing all necessary documentation that will allow the use of the fresh air bottle(s).

Supervisors will be trained to request, acquire, and review a secondary check to determine that a secondary check has been completed to procedure satisfaction and that information will be made known to employees involved to assure the employees that will be performing breathing air tasks that the air is safe for consumption.

Craft employees will be trained to verify the secondary check has been completed by reviewing the attached documentation on the fresh air bottle system and acknowledge that it is within acceptable ranges before is placed in service.

Medical Surveillance

The OSHA respiratory protection standard requires that no employee be assigned to a task requiring the use of a respirator unless it has been determined that the person can perform under such conditions. In addition, once a determination is made as to the physical ability to wear a respirator and perform the work task, a review of the employee's health status must be made. This has been conducted by an approved company physician. Documentation of these exams is maintained by the Respiratory Protection Program Administrator in the files at the Main Office. These files will be kept confidential. Only the test subject will be allowed to view this information, this information will be kept confidential from all other employees. If the subject has questions or concerns, he/she will be allowed to contact the company physician at any time of concern.

The medical questionnaire and examinations will be administered confidentially during the employee's normal working hours or at a time and place convenient to the employee. The medical questionnaire will be administered in a manner that ensures that the employee understands its content. The employer will provide the employee with an opportunity to discuss the questionnaire and examination results with the PLHCP.

The physicians utilized knowledge about the pulmonary disease, respiratory protection practices, pertinent medical factors, and test methods required to determine if an employee may wear a respirator. Medical evaluation for all respirator users will be reviewed periodically. Upon written request, all Cotton respirator users will have full access to their medical evaluation results, which are maintained by the Respiratory Protection Program Administrator.

Cleaning and Disinfecting

All respirators will be cleaned and sanitized after each use unless the respirator is of the disposable type. Cotton management will be responsible for monitoring these procedures and documenting their completion.

The actual cleaning method can be accomplished by following these suggested guidelines:

- Disassemble and inspect respirator components.
- Wash the respirator in warm water with dissolved biocide detergent, using a soft bristle brush if required to displace contaminants.
- Do not use organic solvents as they may damage elastomeric compounds used in the respirator design.
- Remove all detergent and disinfectant residues by rinsing off in warm water, since skin irritation or contact dermatitis may develop.
- Allow the respirator to air dry in a fixed position so as not to damage or distort the original face-piece design of the equipment.
- Do not use high heat as a drying influence as damage may occur.

Storage

Improper storage of respirators can cause damage to the respirator and reduce the protection supplied. OSHA requires that respirators be stored to protect against dust, sunlight, heat, extreme cold, excessive moisture, and damaging chemicals. Respirators should also be protected against mechanical damage. Leaving a respirator unprotected, such as on a workbench, or in a tool cabinet/box among heavy tools is not proper storage.

It is strongly recommended that cleaned respirators be placed in a reusable plastic bag until used again. They should be stored in a clean, dry, sanitary location, and in a single layer with the face-piece and exhalation valve in a position to prevent distortion. Do not hang or suspend respirators from their retention straps

Maintenance and Inspection

Manufacturer instructions for cleaning, inspection, and maintenance of routinely worn respirators will be followed to ensure that the respirator continues to function properly. Wearing poorly maintained or malfunctioning respirators may be more dangerous than not wearing a respirator at all, since the worker may falsely assume that protection is being provided. Rubber or elastomer parts must remain pliable and show no signs of deterioration.

The following person(s) are responsible for routine respirator inspections:

- Supervisors
- HSE Managers

Records will be maintained at regular inspection dates and findings documented by the Respiratory Protection Program Administrator, to determine the continued effectiveness of this program, and to consult with employees to ensure proper fit and use of respirators. Work area surveillance by Cotton management, or the host-facility operator will also be conducted frequently to ensure that contaminant exposure will not rise above the maximum protective capability of the respirators being used, and respirator-wearer stress is controlled.

Training

Supervisors and workers must be taught the proper selection, use, and maintenance of respirators. All employees required to use respiratory protective equipment will be instructed in the proper use of the equipment and its limitations. Training will be conducted annually and within 12 months of the initial training date.

Training will include an explanation of the following:

- Purpose and requirements of the respiratory protection program.
- Nature of the respiratory hazard and what may happen if the respirator is not used properly.
- Engineering and administrative controls are being used and the need for the respirator as added protection.
- Reason(s) for the selection of a particular type of respirator.
- Use and IDLH limitations of the selected respirator.
- Methods of handling, donning the respirator, checking its proper fit and face-seal, wearing it in normal air for a familiar period, and wearing it in a test atmosphere.
- Respirator maintenance, cleaning, and storage.
- Medical evaluations, physical limitations, and user health.
- The proper method for handling emergencies.
- Air monitoring and industrial hygiene practices.
- Review of all applicable Material Safety Data Sheets.
- Familiarization with equipment (capabilities and limitations).
- Storage of equipment.
- Maintenance, cleaning, and care of equipment.
- Inspection of equipment.
- Cartridge types.
- Record keeping.
- How to recognize medical signs and symptoms that may limit or prevent the effective use of respirators.

Retraining

Retraining will be required when the following situations occur:

- Changes in the workplace or the respiratory protection equipment render previous training obsolete.
- Inadequacies in the employee's knowledge or use of respiratory protection equipment indicate

that the employee has not retained the requisite understanding or skill.

- Any other situation arises in which retraining appears necessary to ensure the safe use of respirator protection equipment.

Recordkeeping and Reporting

The HR department will maintain training records, respirator fit test records, medical approval results, and inspection records.

Definitions

Air-Purifying Respirator (Half-Face and Full-Face Masks): A negative pressure respirator that purifies the breathing air by removing undesirable hazardous agents as the breathing air passes through filters.

Air-Supplied Respirator: A respirator that always provides a slight positive pressure of breathing air within the respirator face piece. The source of air must be a regulated air compressor.

Air-Supplied Abrasive-Blasting Respirator: A respirator constructed so that it covers the wearer's head, neck, and shoulders to protect the wearer from rebounding abrasive.

Fit Test: The use of a determined protocol to evaluate the fit of a respirator qualitatively or quantitatively on an individual to ensure that a good seal exists.

Hazardous Atmosphere: Any working atmosphere that contains known or potential hazards that are dangerous to life and health.

Hazards: Any chemical substances that are known or suspected to produce disease or impair health upon contact. This will include those substances that are deemed hazardous by regulatory organizations and noted by chemical manufacturers in the "Special Precautions Section" on a Safety Data Sheet (SDS).

Immediately Dangerous to Life or Health (IDLH): This abbreviation refers to the conditions of any hazardous working atmosphere that poses an immediate threat to an employee's life or produces immediate, irreversible, harmful effects on an employee's health.

Permissible Exposure Limit (PEL): The maximum, time-weighted, average concentration of a given substance that a person can be exposed to without the likelihood of causing harm to that person's life or health.

Self-Contained Breathing Apparatus (SCBA): An air-supplying respirator for which the source of breathing air comes from a tank that is carried on the back of the user providing a limited air supply.

Quantitative Fit Test: An evaluation of respirator fit requiring the use of a machine that will measure the wearer's ability to maintain a good seal while performing certain physical exercises.

Qualitative Fit Test: A fit test performed by introducing a harmless odorous substance into the breathing zone of the wearer, who is usually wearing a hood over his/her head and having them perform some basic exercises. If the wearer does not detect the substance, a proper fit is indicated.

Fall Protection Guidelines

Purpose

This procedure provides minimum safe work practices for the proper use of Fall Protection Systems. It addresses the need for fall protection, proper tie-off considerations, anchorages, vertical and horizontal lifelines, and PPE. Cotton has a 100% tie-off policy. Cotton strives to protect its employees and workers from occupational injuries by implementing and enforcing safe work practices and appointing a competent person(s) to manage the Fall Protection Program.

References

OSHA 29CFR1926, Subpart M

ANSI Z359.1

Responsibilities

Supervisor will:

- Be trained as a competent person for each job site to prepare and implement the fall protection plan. The Safety Specialist will assume the role of a competent person when onsite.
- Be responsible for continual observational safety checks of work operations and enforcement of the safety policy and procedures.
- Correct any unsafe acts or conditions immediately.
- Provide fall protection to affected employees and ensure that all employees understand and adhere to the procedures of this plan.
- Assess the work site and identify existing or potential hazards before work begins or before the project begins.
-

Employee will:

- Understand and adhere to the procedures of the fall protection plan and follow the instructions of the supervisor.
- Bring to management's attention any unsafe or hazardous conditions or practices that may cause injury to either themselves or any other employees,
- Report any fall from heights incident, regardless of the nature of the injury.

HSE Department will:

- Audit this program and make any changes to it based on changes to regulations, audits and/or incident investigation, and corrective actions.

Competent Person will be:

- Responsible for developing and implementing each site-specific fall protection plan. The responsible safety officer and the supervisor of each job site will be trained to the level of a competent person for fall protection.
- Knowledgeable of fall protection equipment, including the manufacturer’s recommendations and instructions for the proper use, inspection, and maintenance.
- Capable of identifying existing and potential fall hazards and has the authority to take prompt, corrective action to eliminate those hazards, and is knowledgeable of the rules contained in those sections regarding the erection, use, inspection, and maintenance of fall protection equipment and systems.
- Located on the same working surface and in visual sight. Stay close enough for verbal communication.

Need for Fall Protection

Fall protection is required when there is a fall potential of 6’ or more from the walking-working surface where employees are expected to work. Fall protection is also needed when there is a fall potential of less than 6’, depending on client regulations, and working over or next to dangerous equipment,

excavations deeper than 6', or over impalement hazards.

Requirements to Use Fall Protection Systems

A fall protection system is required when walking or working at levels with an unprotected side or edge, 6 feet or more above a lower level. This includes, but is not limited to, floors, roofs, ramps, bridges, runways, pipelines, and ladders.

A guardrail system, fence, barricade, or cover will be the primary fall protection system utilized for excavations, wells, pits, shafts, holes, skylights, and other openings.

Tasks performed on an infrequent or short duration basis, such as inspections may be exempted from fall protection system requirements by the Competent Person Supervisor of the person(s) performing the task, provided:

- The use of a fall protection system is not feasible or may create a greater hazard to the person performing the work.
- The potential for falling is recognized and reviewed.

Personnel working atop a low-slope roof servicing air conditioning/ heating unit, etc. who remain at least 6 feet from the edge of the building during this work are exempt from the use of fall protection systems.

Cotton will only purchase fall protection equipment (full body harnesses and shock-absorbing lanyards with double-locking snap-hooks) that meets or exceeds all ANSI/ASTM Standards.

Storage

Fall protection equipment must be stored in a clean dry location away from exposure to abrasive or cutting tools, equipment or materials, excessive heat, and chemicals. Full body harness should be hung by the D-ring for storage.

Inspection

A competent person designated by Management must conduct an in-depth inspection of all job site fall protection equipment periodically (annually). In-depth fall protection inspections must be documented using the form generated by the safety department.

Fall Protection Devices

Some types of fall protection equipment (such as self-retracting lifelines) require periodic re-certification by the manufacturer at scheduled intervals. The Competent Person must be familiar with these requirements and have a documented re-certification performed as required. These types of equipment will also undergo an annual inspection by the designated Competent Person. Fall protection equipment subjected to a fall force must be immediately removed from service, destroyed, replaced, or re-certified by the manufacturer.

Fall Protection

Only fall protection equipment approved for use by the Company is allowed. The Company will provide all fall protection to their employee. All fall protection must be inspected before each use and must be maintained in good working order at all times. Equipment found to be defective must be immediately removed from service and replaced as soon as possible. Fall protection equipment is for fall protection use only and is not to be used for any other purpose such as positioning. All components of personal protection, i.e., harness, lanyards, anchorage, lifelines, and connectors must have a minimum breaking strength of 5000 pounds. All fall protection equipment must be designed, purchased, and used per this procedure and all applicable manufacturer and regulatory requirements set forth by OSHA. In "hot-work" operations or those involving chemicals or other factors that could cause damage, fall protection equipment must be designed and/or protected to avoid burning or deterioration. All equipment will be purchased in a new condition that meets ANSI 59.1

Distance Requirements

A fall will not exceed more than 6 feet. The fall protection system must be used and secured in a fashion so that the user cannot contact the next lower level should a fall occur. This includes:

- Free Fall Distance, Plus
- System Elongation, Plus
- Deceleration Device/Shock Absorbers, Plus
- Employee height (distance from the anchor point of the D-ring)

Note: The site supervisor will make provisions for prompt rescue for employees in the event of a fall.

Anchorages

Anchorages must be capable of supporting 5000 pounds, per employee attached or be approved by a qualified person to have a safety factor of two. Anchorages should be level with the back de-rings of the harness or higher if this cannot be maintained, the lanyard should be shortened to keep the free fall distance to the 6' or lower, requirement. Anchorage points should be taken into consideration when a job requires the employee to work at elevations exceeding those above.

Full Body Harness

Full body harness must fit and be worn properly with the straps tucked so as not to get caught on equipment or otherwise cause a hazard. Chest straps must be worn between the chest and collar bone, with the rear D-ring being worn between the shoulder blades. Additionally, some harnesses come equipped with various "D"-rings whose use is based on their location:

- Back- General Fall Protection Use
- Front- Used with Climbing Systems
- Side- Positioning Devices Only, not to be Used as Fall Protection
- Shoulder- Rescue Line Attachment

Full Body Harness Inspection

Inspect before each use. Fall protection exhibiting any of these faults will be removed from service and destroyed. The following criteria will be utilized to maintain the Full Body Harnesses in good working condition:

- Closely examine all the nylon webbing to ensure that there are no burn marks that could weaken the material.
- Verify that there are no torn, frayed, or broken fibers; pulled stitches; or frayed edges anywhere on the harness.
- Examine the D-ring for excessive wear, discoloration, pits, deterioration, or cracks.
- Verify that buckles are not deformed or cracked and operate correctly.
- Check to see that each grommet is secure and not deformed from abuse or a fall.
- The harness should never have additional punched holes.
- All rivets should be tight and not deformed.
- Check tongue/straps for excessive wear from repeated buckling.
- A Competent Person will complete an annual inspection of all harnesses and documentation will be maintained. Harnesses will be hung and stored in an enclosed cabinet to protect from damage.
- The harness should be clean and flexible. If the harness is dirty or stiff, it should be washed with warm soapy water and hung out to dry.
- All harnesses that are involved in a fall will be destroyed.

Lanyards/Shock-Absorbing Lanyards Inspection

Inspect before each use. Lanyards exhibiting any of these faults will be removed from service and destroyed. The following criteria will be utilized to maintain the Lanyards in good working condition:

- Check lanyard material for cuts, burns, abrasions, kinks, knots, broken stitches, and excessive wear.
- Inspect the snap hooks for distortions in the hook, locks, and eye.
- Check the carabiner for excessive wear, distortion, and lock operation.

- Ensure that all locking mechanisms seat and lock properly.
- Once locked, the locking mechanism should prevent the hook from opening.
- Visually inspect the shock absorber for any signs of damage, paying close attention to where the shock absorber attaches to the lanyard.
- Verify that points, where the lanyard attaches to the snap hooks, are free of defects.
- A Competent Person will complete an annual inspection of all lanyards and documentation will be maintained Lanyards will be hung and stored in an enclosed cabinet to protect them from damage.
- All lanyards that are involved in a fall will be destroyed

Self-Retracting Lanyards

Dual lanyard personal SRLs or a fixed overhead SRL will be used for fall arrest. SRLs typically require 6 feet of clear space below the anchor point to safely arrest a fall. If traversing with a fall hazard of 6 feet or more, 100% tie-off is required at all times. This will require utilizing an SRL with dual lanyards. The 6-foot fall distance is measured from the walking/working surface to the next lower walking/working surface. Whenever changing anchor points, the second lanyard must be connected to the new anchor point before the first one can be removed. Never tie-off by connecting two lanyards hook to hook. When using dual lanyard SRLs, the time during which a worker is tied off with both lanyards should be minimized; simultaneous deployment of both lanyards may limit the effectiveness of the lanyards and may become entangled preventing proper operation. When not in use, the SRL Hook must be secured to the harness by a breakaway Lanyard Keeper only. The snap hook will be attached to the adjustable ring in the middle of the lanyard and then to the chest D-ring of the harness.

SRL Inspection

Inspect SRLs before each use. SRLs exhibiting any of these faults will be removed from service. The following criteria will be utilized to maintain the SRLs in good working condition:

- Visually inspect the body to ensure that there is no physical damage to the body.
- Make sure that all nuts and rivets are tight.
- Make sure that the entire length of the nylon strap/wire rope is free from cuts, burns, abrasions, kinks, knots, broken stitches/strands, excessive wear, and retracts freely.
- Test the unit by pulling sharply on the lanyard/ lifeline to verify that the locking mechanism is operating correctly.
- If the manufacturer requires, make certain that the retractable lanyard is returned to the manufacturer for scheduled annual inspections.
- A competent person will conduct a monthly inspection of all self-retracting lanyards/lifelines and documentation will be maintained.

Snap Hooks

Only self-closing, self-locking snap hooks are allowed for fall protection use on Company projects. Snap hooks must open and close properly and be fully closed around their anchorage point.

Snap Hook Inspection

Inspect before each use. snap hooks exhibiting any of these faults will be removed from service. The following criteria will be utilized to maintain the snap hooks in good working condition:

- Verify that there are no hook and eye distortions.
- Verify that there are no cracks or pitted surfaces.
- The keeper latch should not be bent, distorted, or obstructed.
- Verify that the keeper latch seats into the nose without binding.
- Verify that the keeper spring securely closes the keeper latch.
- Test the locking mechanism to verify that the keeper latch locks properly.
- A competent person will complete an annual inspection of all snap hooks and documentation will be maintained.
- All snap hooks involved in a fall will be destroyed.

Vertical Lifelines

Vertical lifelines may be used when anchorages are beyond the reach of the employee or employees need to travel straight up and down, at elevations. Vertical lifelines and anchorages they are attached to must be capable of supporting 5000 pounds or maintain a safety factor of two if approved by a qualified person. Only one employee per vertical lifeline is allowed. Rope or cable grabs will be used; no knots will be tied in any cable or rope, used for vertical lifelines. Synthetic straps must be approved for use in fall protection. Straps used for material hoisting will not be used.

Horizontal Lifelines

Horizontal lifelines will be designed and installed under the supervision of a qualified person or one who has technical experience in this field. No horizontal lifeline will be installed or used without approval from Cotton management.

Control Zone System

A controlled access zone means an area designated and marked in which leading-edge work may take place without the use of a guardrail, safety net, or personal fall arrest systems to protect the employees in the area. Control zone systems will comply with the following provisions:

- When used to control access to areas where leading edge and other operations are taking place the controlled access zone will be defined by a control line or by any other means that restricts access. When control lines are used, they will be erected not less than 6 feet (1.8 m) or more than 60 feet (18 m) or half the length of the member being erected, whichever is less, from the leading edge.
- The control line will extend along the entire length of the unprotected or leading edge and will be approximately parallel to the unprotected or leading edge.
- The control line will be connected on each side to a guardrail system or wall.
- Control lines will consist of ropes, wires, tapes, or equivalent materials, and supporting stanchions as follows:
- Each line will be flagged or otherwise clearly marked at no more than 6-foot (1.8 m) intervals with high-visibility material.
- Each line will be rigged and supported in such a way that its lowest point (including sag) is not less than 39 inches (1 m) from the walking/working surface and its highest point is not more than 45 inches (1.3 m) from the walking/working surface.
- Each line will have a minimum breaking strength of 200 pounds (0.88 kN).

Warning Line System

Warning lines may be appropriate for low-sloped roofs where individuals do not need to go all the way to the edge to perform their tasks.

All construction work on a flat roof greater than 50 feet wide, which is performed 6 feet or further back from the roof's edge, can be completed by installing a warning line and using a safety monitor. If the roof is flat and less than 50 feet wide, a competent person safety monitor may be used.

Warning lines will:

- Guard the entire perimeter of the roof where work is being performed.
- Be erected 6 feet from the roof's edge.
- Consist of wire or nylon rope.
- Be strung no less than 34 inches from the walking/working surface and its highest point is no more than 39 inches from the walking/working surface.

If an employee must temporarily access an area within 6 feet of the roof's edge, for reasons other than exiting the roof via a ladder or fixed industrial ladder, another employee must monitor that individual and warn them of any dangers. If another employee is not available to act as a safety monitor, then the employee must wear a full body harness, attached by a fall restraint lanyard to an anchor point, to prevent reaching the roof's edge.

Safety Monitoring Systems

In situations when no other fall protection has been implemented, the Competent Person will monitor the safety of employees in these work areas.

Cotton will appoint a Competent Person to monitor the safety of workers and will ensure that the Safety Monitor:

- Is competent in the recognition of fall hazards
- Is capable of warning workers of fall hazard dangers and detecting unsafe work practices
- Is operating on the same walking/working surfaces as the workers and can see them
- Is close enough to work operations to communicate orally with workers, and
- Has no other duties to distract from the monitoring function.

Mechanical equipment will not be used or stored in areas where safety monitoring systems are being used to monitor employees engaged in roofing operations on low-sloped roofs.

No worker, other than one engaged in roofing work (on low-sloped roofs) or one covered by a fall protection plan, will be allowed in an area where an employee is being protected by a safety monitoring system.

Roofing Activities

Flat Roofs

On flat roofs the control line will consist of ropes, wires, or equivalent materials, as long as it meets the following criteria:

- Each line must be rigged and supported in such a way that its lowest point will not be less than 39 inches and no more than 45 inches at its highest point from the working surface and will extend parallel to the entire length of the unprotected edges.
- Has a minimum break strength of not less than 200 pounds and is flagged with high-visible material every 6 feet.
- A warning line is used 15 feet or more from the edge (or nearest edge of a hole):
    - No work or work-related activity is to take place in the area between the warning line and the hole or edge.
    - A work rule prohibiting the employees from going past the warning line.

Low-sloped Roofs

On roofing activities on low-sloped roofs with unprotected sides and edges, 6 feet or more above lower levels must be protected from falling by the use of guardrail systems, safety net systems, PFAS, or a combination of systems. A roof with a slope of 4:12 or less is a low-sloped roof.

A combination of systems can include:

- A combination of a warning line system and a guardrail system.
- A combination of a warning line system and a safety net system.
- A combination of a warning line system and a personal fall arrest system.
- A combination of a warning line system and a safety monitoring system.
- On roofs, 50 feet or less in width, a safety monitoring system may replace a warning line system.

Steep Roofs

On roofing activities on a steep roof with unprotected sides and edges 6 feet or more above lower levels must be protected by guardrail systems with toe boards, safety net, or PFAS. A steep roof is one with a slope greater than 4:12.

Hazardous Slopes

Some roofs are considered "hazardous slopes" when they are steep, slippery, or both. When any roof is so steep or slippery that an uncontrolled fall would likely happen, fall protection is required at 6 feet.

Rescue

Cotton will provide for prompt rescue of employees in the event of a fall or will assure that employees can rescue themselves. Devices with decent capabilities may be considered for self-rescue in some

areas.

If a fall occurs a person becomes suspended in a harness and remains both vertical and sedentary for some time, causing blood to "pool" in the veins of the legs. Subsequently, blood is restricted to the brain and other major organs which may initially result in unconsciousness. If not rescued promptly, serious injury or death may occur.

OSHA states that potentially fatal suspension trauma can occur within minutes of waiting for rescue after a fall. The average fall rescue time is 15 minutes.

Specific Work Activities/Conditions Requiring Fall Protection

Operations requiring fall protection include operating or working from a mobile-elevated work platform or aerial lift device. Scissor lifts do not require the use of fall protection.

Engineering Controls

Whenever possible, attempts should be made to change the nature of the task so that it is not necessary to use fall protection. Examples include moving the task to ground level, using a telescoping arm to reach an area (e.g., to change a lightbulb), or using equipment rather than having to send a person to work at heights.

Guardrails

Guardrail systems will be erected at unprotected edges, ramps, runways, or holes where it is determined by the Competent Person that erecting such systems will not cause an increased hazard to employees. When used, guardrails will be made from steel, wood, and wire rope will be acceptable. All guardrail systems will comply with the current OSHA standards. Guardrails will be placed in the following areas if necessary or feasible based on job location or requirements:

- On all open-sided floors.
- Around all open excavations or pits.
- On leading edges of roofs or mezzanines.

The following specifications for materials will be followed in the erection of guardrail systems.

- For wood railings, post and top rails will be at least nominal 2-inch by 4- inch, 1,500 lb.-ft/in2 fiber construction grade lumber. Mid-rails will be at least nominal 1-inch by 6-inch
- For pipe railings, posts, top rails, and mid-rails will be at least 1.5-inches nominal diameter.
- For structural steel railings, posts, top rails, and mid-rails will be at least 2-inches by 2-inches by 3/8-inch angles.
- If wire rope is used for top rails, it will be flagged with high-visibility material at least every 6 feet.

Construction of Guardrails

Guardrails will be 39-45 inches high with mid-rails, screens, or mesh to block the space between the floor and guardrail. Support posts will be no more than 8 feet apart. Guardrails will be able to withstand a force of 200 pounds. Mid-rails will be able to withstand a force of 150 pounds, and toe-boards will be able to withstand a force of 50 pounds. Guardrails will be smooth enough to prevent punctures, cuts, or clothing snags.

Construction of Top Rails

At least ¼ inch in diameter (steel or plastic banding will not be used as guardrails), and they will be flagged every six (6) feet or less with a high visibility material if the wire rope is used. Top rails will be inspected by the Competent Person as frequently as necessary to ensure strength and stability.

Top rails will be constructed to a height of 42 inches, plus or minus 3 inches, above the walking/working level and adjusted to accommodate the height of stilts if they are in use.

Construction of Mid Rails

Construction of mid rails, screens, mesh, intermediate vertical members, or equivalent intermediate structural members will be installed between the top edge of the guardrail system and the

walking/working surface when there are no wall or parapet walls of at least 21 inches high.

When mid rails are used, they will be installed at a height midway between the top edge of the guardrail system and the walking/working level.

Screens and mesh may be used and will extend from the top rail to the walking/working level and along the entire opening between top rail supports.

Hole covering

All covers will be secured to prevent accidental displacement. Covers will be color-coded or bear the markings "HOLE" or "COVER". They will be able to support twice the weight of employees, equipment, and materials that might cross them.

Protection from Falling Objects

When guardrail systems are in use, the openings will be small enough to prevent the potential passage of falling objects. The following procedures must be followed by all employees to prevent hazards associated with falling objects:

- No materials (except masonry and mortar) will be stored within four (4) feet of working edges.
- Excess debris will be removed regularly to keep work areas clear.
- During roofing work, materials and equipment will be stored no less than six (6) feet from the roof edge unless guardrails are erected at the edge.
- Stacked materials must be stable and self-supporting.
- When used, canopies will be strong enough to prevent penetration by falling objects.

Toe-boards erected along the edges of overhead walking/working surfaces will be:

- Capable of withstanding a force of at least 50 pounds.
- Solid with a minimum of 3 1/2 inches tall and no more than 1/4-inch clearance above the walking/working surface.
- Equipment will not be piled higher than the toe-board unless sufficient paneling or screening has been erected above the toe-board.

Training

The fall protection trainer will be a competent person with experience or knowledge in the following areas:

- The nature of fall hazards in the work area.
- The correct procedures for erecting, maintaining, disassembling, and inspecting the fall protection systems are to be used.
- The use and operation of guardrail systems, PFASs, safety net systems, warning line systems, safety monitoring systems, controlled access zones, and other protection to be used.
- The limitations on the use of mechanical equipment during the performance of roofing work on low-sloped roofs.
- The correct procedures for the handling and storage of equipment and materials and the erection of overhead protection.
- The role of each employee in the safety monitoring system when this system is used.
- The role of employees in fall protection planning.

Employees will receive training as soon after employment as possible, and before they are required to work in areas where fall hazards exist. The training will introduce the Cotton Fall Protection Program including the use and care of Personal Fall Arrest Systems (PFAS).

The training will be conducted in the following areas;

- The nature of the fall hazards in the workplace.
- The correct method of erecting, maintaining, and disassembling, and inspecting the PFAS.
- Selection and use of PFAS. Employees must be trained in the safe use of the system. This should include the following: application limits; proper anchoring and tie-off techniques; estimation of free fall distance, including determination of deceleration distance, and total fall

distance to prevent striking a lower level; methods of use; and inspection and storage of the system.
- The use and operation of guardrail systems, PFASs, warning line systems, and safety monitoring systems.
- The proper storage, and inspection of each type of PFAS.
- The proper methods for protection from overhead hazards.
- The role of the employee in the fall protection plan.

Re-Certification

When there is reason to believe that any employee who has already been trained does not have the understanding and skill required, then each such employee will be retrained. Circumstances, where retraining is required, include, but are not limited to, situations where:

- Changes in the workplace render previous training obsolete.
- Changes in the types of fall protection systems or equipment to be used render previous training obsolete.
- Inadequacies in an affected employee's knowledge or use of fall protection systems or equipment indicate that the employee has not retained the requisite understanding or skill.
- An accident or near miss involving a fall occurs.

Inadequacies in the employee's knowledge or use of fall protection, indicate they have not retained requisite knowledge in the proper use, inspection, storage, or other elements of the fall protection policy.

Definitions

Anchorage – A secure point of attachment to which the fall protection system is ultimately connected.

Competent Person – One who is capable of identifying hazardous conditions regarding fall protection equipment, is knowledgeable in the application and use of the equipment and has the authority to take prompt corrective actions.

Deceleration Device (Shock Absorber) – Any device which serves to dissipate a substantial amount of energy during a fall arrest or otherwise limits the energy imposed on the body during a fall arrest.

Designated Area – A fall prevention system composed of a warning line and stanchions erected 6 feet or more from a fall hazard (unprotected roof edge).

"D" Ring – An attachment point on the full body harness for attaching a lanyard or other fall protection device.

Fall Protection – The use of passive equipment designed to stop and/or control the free fall once a fall has been initiated.

Free Fall – Distance the D-ring travels from the onset of a fall to the time when the fall arrest system is activated (excludes deceleration distance and any system elongation).

Full Body Harness – A personal fall protection device, which is secured around the body, and a lanyard/device attached. It is designed to distribute fall arresting forces primarily over the buttock and thighs.

Lanyard – A flexible strap connected to the full body harness at one end and an anchorage or anchorage connector at the other end.

Lifeline – A flexible line for connection to an anchorage at one end to hang vertically (vertical lifeline), or for connection at both ends to stretch horizontally (horizontal lifeline), and to which other elements of a fall arrest system are attached.

Low Sloped Roof – A roof having a slope or less than or equal to 4 on 12 (vertical to horizontal).

Qualified Person - One with a recognized degree or professional certification and extensive knowledge in the fall protection field, who is capable of designing, analyzing, evaluating, and specification of fall protection equipment.

Restraint Line – A line from a fixed anchorage to which an employee is secured in such a way as to prevent the employee from reaching an identified fall hazard.

Self-Retracting Lifeline – A fall protection device, which extends up and down automatically as the worker moves eliminating slack. These units have a locking/braking mechanism that senses and arrests free fall.

Snap Hook – A self-closing, self-locking connector used for connecting lanyards/devices to the full body

harness D-ring and the anchorage.

Scaffold User Program

Purpose

The purpose of the regulations and this procedure cover the design, construction, and use of scaffolds to protect employees from scaffold-related hazards such as falls, falling objects, structural instability, electrocution, and overloading. Inspecting scaffolds before completion and following their completion will assure that all safety requirements in the design, erection, location, and use of a scaffold have been met.

References

29 CFR 1926, Subpart L - Scaffolds.

Responsibilities

Supervisor will:

- Provide the necessary training to affected Cotton employees and ensure that all employees understand and adhere to the procedures of this plan and follow the instructions of the Cotton HSE Management System.
- Ensure employees who perform work on a scaffold are trained by a person qualified in the subject matter to recognize the associated hazards and to understand the procedures to control or minimize those hazards.
- Inspection of the scaffold and all components daily.
- Document the daily inspection.
- Assure the scaffold builders' tag is still in place.
- Assure all users of the scaffold have received training.
- Stop work for unsafe conditions that arise during work.
- Stop work and retrain all employees whenever a new hazard is introduced.
- Assure fall protection, if required is provided and utilized.
- Assure falling object protection is provided and utilized.
- Assure employees use the safe access provided.

Employees will:

- Understand the fall hazards associated with their job task and follow established scaffold safety policies and procedures.
- Evaluate and assess the work site and identify existing or potential hazards before work begins or before the construction of a new work site.

HSE Department will:

- Audit this program and make any changes to it based on changes to regulations, audits and/or incident investigation, and corrective actions.

Requirements and Procedures

Scaffold General Requirements

Scaffolds must meet OSHA standards for guardrail systems which include a top-rail, mid-rail, and toe-boards to prevent falls. They must be designed by a qualified person and constructed and loaded following that design. Due to differences in design and fit, scaffold components of different manufacturers should not be intermingled.

Scaffolds and their components will be capable of supporting four times the maximum intended load. The intended load includes all personnel, equipment, and supply loads. The intended load should never exceed the rated load unless approved by an engineer and/or the manufacturer. The maximum rated load of the scaffold per the manufacturer should be posted or tagged on the scaffold. The tag/post should indicate whether the scaffold is rated for light, medium, or heavy-duty; and list any restrictions.

Scaffolds will not be altered or moved horizontally while they are in use or occupied. Any damaged or

weakened scaffold will be immediately repaired and will not be used until repairs have been completed. These scaffolds should be tagged "OUT OF SERVICE" (i.e., Red Scaffold Tag). The scaffold will not be placed within 10 feet (minimum) of an electrical power source (power lines, transformers, etc.).

Employees will not work on scaffolds during storms or high winds or when covered with ice or snow unless all ice or snow is removed, and planking is sanded to prevent slipping. Tools, materials, and debris will not be allowed to accumulate in quantities on platforms or around scaffold areas to cause a hazard.

Scaffolding Near Power Lines

The clearance between scaffolds and power lines will be as follows: Scaffolds will not be erected, used, dismantled, altered, or moved such that they or any conductive material handled on them might come closer to exposed and energized power lines than as follows:

Insulated Lines		
Voltage	Minimum distance	Alternatives
Less than 300 volts	3 feet (0.9 m)	
300 volts to 50 kV	10 feet (3.1 m)	
More than 50 kV	10 feet (3.1m) plus 0.4 inches (1.0cm) for each 1 kV over 50 kV.	2 times the length of the line insulator, but never less than 10 feet (3.1 m).

Uninsulated lines		
Voltage	Minimum distance	Alternatives
Less than 50 kV	10 feet (3.1 m).	
More than 50 kV	10 feet (3.1m) plus 0.4 inches (1.0cm) for each 1 kV over 50 kV.	2 times the length of the line insulator, but never less than 10 feet (3.1 m).

Scaffolds will not be erected, used, dismantled, altered, or moved such that they or any conductive material handled on them might come closer to exposed and energized power lines listed above. EXCEPTION: When the work requires closer clearance than listed above, the utility company or electrical system operator for the owner has been notified and has de-energized the lines, relocated the lines, or installed protective coverings to prevent accidental contact with the lines.

Fall Protection

The key factor in protecting against falls from a scaffold is recognizing fall hazards. Specific fall hazards on scaffolding are missing guardrails and open holes in the working surface or platform. Employees working above 6' will be required to utilize fall protection equipment at all times.

The exception is if scaffolding is green tagged, all guardrails are in place, no gaps in decking, and all chances of falling from heights have been eliminated.

Climbing out of the parameters of fall protection provided (such as climbing on guardrails) to reach certain work tasks is prohibited without the use of fall protection.

The competent person will be responsible for determining the feasibility and safety of providing fall protection for employees erecting or dismantling scaffolds. Fall protection will be required where the installation and use of such protection are feasible and do not create a greater hazard.

Personal fall arrest systems used on scaffolds will be attached by lanyard to a vertical lifeline, horizontal lifeline, or scaffold structural member. Vertical lifelines will not be used when overhead components, such as overhead protection or additional platform levels, are part of single-point or two-point adjustable suspension scaffolds. Employees will not secure fall protection to scaffold guardrail systems unless rated for 5000lbs.

Falling Object Protection

Employees will be protected from falling objects through the installation of toe boards, screens, or guardrail systems, or through the erection of debris nets, catch platforms, or canopy structures. When potential falling objects are too large, heavy, or massive to be contained they will be located away from the edge of the surface from which they could fall and will be secured. Where tools, materials, or equipment are piled higher than the top edge of the toe board, paneling or screening extending from the toe board to the top of the guardrail system will be erected.

The area below scaffolds from which objects could fall will be barricaded, and employees will not be permitted to enter the hazard area.

Protection from objects falling from scaffolds can be accomplished by several methods:

- Barricades installed below scaffolding.
- Paneling or screening can be used if objects are higher than the top edge of the toe-board.
- Guardrail systems can be used with openings small enough to prevent the passage of potential falling objects.
- Canopies or debris nets can be used to catch or deflect falling objects.

Access

Access (portable ladders, hook-on ladders, attachable ladders, stair towers, stairway type ladders, ramps, walkways, integral prefabricated scaffold access) must be provided for all employees whenever the scaffold platform is more than 2 feet above or below a point of access. Safe access will be provided to the scaffold.

There are several ways to provide access:

- A hook ladder to a point of access is guarded by gates, removable rails, or chains. It must be provided no more than 24-inches away vertically and no more than 14- inches away horizontally. Cross braces will not be used as a means of access.
- Prefabricated scaffold access frames will be specifically designed and constructed for use as ladder rungs.
- A ladder that leans against a scaffold for access and is secured to the scaffold and the top must extend 3-feet above the platform.

The competent person will determine whether it is feasible or would pose a greater hazard to provide and have employees use a safe means of access.

Guardrail Systems

Guardrails and toe boards will be installed at all open sides on a scaffold. If it cannot be built in such a manner it will be reviewed by the qualified person as in compliance with OSHA and should be yellow tagged informing employees to wear fall protection.

The top rail height will be between 38-inches and 42-inches from the platform surface.

Midrails will be installed at a height midway between the top edge of the guardrail system and the platform surface.

Guardrail systems must be surfaced to prevent injury from punctures or lacerations and to prevent the snagging of clothing.

Employees are prohibited from standing on guardrails, mid-rails, or toe boards to gain extra height. It is prohibited to place planks on guardrails or mid rails to gain extra height.

Platforms and Planking

Platforms must be fully decked or planked so that the space between units is less than 1-inch and must be at least 18-inches wide. Planking will be overlapped at a minimum of 12-inches or secured from movement.

Scaffold planks will extend over their end supports no less than 6-inches and no greater than 12-inches or must be cleated, hooked, or restrained. This prevents the movement of platform units. For planks longer than 10 feet, the ends may not exceed 18-inches past the support ends. On scaffolds where platforms are overlapped to create a long platform, the overlap may only occur over supports and must overlap at least 12-inches or more, unless the platforms are restrained (e.g., nailed together)

to prevent movement.

The space between the front edge of the platform and the face of the work must be less than 14-inches unless guardrails or a fall arrest system are in place to prevent the worker from falling.

Platforms cannot deflect more than 1/60th of a span when loaded. Wood platforms cannot be covered with opaque finishes. Opaque finishes may cover defects, cracks, or other deficiencies of the material.

Employees are:

- Prohibited from working on scaffolds covered with snow, ice, or other slippery material except as necessary for the removal of such materials.
- Prohibited from working on scaffolds during storms, high winds, or electrical storms. The competent person will evaluate if it is safe for employees to work during high winds.
- Not allowed to accumulate debris on scaffolds.
- Prohibited from using makeshift devices on top of scaffold platforms to increase the working height of employees.
- Prohibited from using ladders on scaffolds.

Fabricated planks and platforms may be used instead of solid-sawn wood planks. Maximum spans for such units will be as recommended by the manufacturer based on the maximum intended load being calculated as follows:

Rated load capacity	Intended load
Light duty	25 pounds per square foot applied uniformly over the entire span area.
Medium duty	50 pounds per square foot applied uniformly over the entire span area.
Heavy duty	75 pounds per square foot applied uniformly over the entire span area.
One person	250 pounds are placed at the center of the span (a total of 250 pounds).
Two people	250 pounds are placed 18 inches to the left and right of the center of the span (total of 500 pounds).
Three people	250 pounds are placed at the center of the span and 250 pounds are placed 18 inches to the left and right of the center of the span (total of 750 pounds).

Mobile Scaffolds

For mobile scaffolds, the minimum platform width must be at least 20-inches. The maximum work level height will not exceed four times the minimum base dimension, a 4:1 ratio. If it exceeds this ratio, then outrigger frames will be employed to achieve this dimension or the unit must be tied, guyed, or braced to prevent tipping. Supporting structure for the work level will be rigidly braced with adequate cross or diagonal bracing with rigid platforms at each work level.

Wheels or casters must support four times the design working load and be able to be locked in place to prevent movement when in use. Mobile scaffolds may only be moved after removing all material and equipment from the scaffold, while unoccupied and across level surfaces. Beware of holes, floor, and overhead obstructions.

When leveling of the work platform is required, screw jacks or other means for adjusting height will be provided in the base section of the unit.

Mobile scaffolds will be inspected by a Competent Person when assembled, with significant alteration, before each use, and as often as necessary to ensure safety.

Scaffold Tagging

Cotton, will follow industry best practices and utilize a scaffold tagging system:

- **Green Tag**: Specifies the scaffold is ready for general use. The tag must be signed by a Competent Person before each work shift or before each use. Users will verify proper inspection before use. The complete scaffold consists of a finished deck (boards), toe boards,

mid-rails, handrails, and an access gate or ladder 3-feet above the handrail. The scaffold is complete and is built to conform to OSHA standards. Fall protection is built into the scaffold.

Fall protection is not required for green-tagged scaffolds since all chances of falling from heights have been eliminated.

- **Yellow Tag**: Specifies the scaffold is incomplete and special provisions must be followed. The tag must be signed by a Competent Person before each work shift or before each use. The user will verify proper inspection before use. The scaffold is complete and is built to conform to OSHA standards. Due to a missing component, all fall protection could not be built into the scaffold. When working from this scaffold it will be necessary to wear a full-body harness and maintain 100% tie-off for your fall protection.

Fall protection will be worn on yellow-tagged scaffolds.

- **Red Tag**: Specifies that scaffold is not ready for use. The red tag must be affixed to all scaffolds that are under construction or where a scaffold has been deemed unsafe for use. The tag must be signed by a Competent Person. Anyone noting a defect on an erected scaffold or scaffolding material will have the authority to attach a red tag (DO NOT USE), or if unavailable a caution or danger tag, to the scaffold and bring the defect to the attention of the erector, inspector, or area supervision.

No Cotton is allowed to access a red-tagged scaffold.

Scaffold Inspection

The following procedure is outlined to expedite the inspection data and to document data concerning the inspections related to the procedure. The supervisor will select the type of scaffold that is needed to do the work expected. (In some cases, the type of scaffold has been previously dictated by the customer. The location for erecting the scaffold will be reviewed by the supervisor before beginning the erection.

1. While the scaffold is being erected under the direction of a qualified person, a red scaffold inspection tag will be placed on the scaffold to denote that the scaffold is incomplete. This tag will have all slots completed on it and will be kept on the scaffold until it is completed.
2. Following completion of the scaffold, the red tag will be removed and a green tag or a yellow tag will be attached This tag will also have all slots completed by the qualified person.
3. If alterations or repairs are necessary, they must be made under the direction of a qualified person before starting work
4. Scaffold disassembly will require a new red tag to be attached until disassembly is complete under the direction of a qualified person.

The scaffold must be inspected daily by a competent person before each work shift.

Suspended Scaffolds, Platforms, Manufactured Staging

In the industrial workplace, these types of work platforms are frequently used for our type of work. They can range in size from a one-person work platform to larger work platforms capable of supporting many employees. Regardless of size, they have common safety requirements which must be met.

The work platform must be load rated for capacity. On the manufactured staging and suspended platforms, the load has been calculated, designed tested, and approved by a testing laboratory before the load capability is stamped on the machine. When designing and building suspended platforms, each component should be load tested and the load weight must be calculated to assign a safe working capacity. No individual component will have less than a 6 to 1 safety factor.

Work platforms can be suspended by fiber or wire ropes if they conform to 29 CFR 1910.28(a)(22) which requires a 6 to 1 safety factor. Where acidic conditions are present or when cutting, burning, or welding is being performed, only wire rope may be used.

Hooks, clips, and attachment devices must be load rated. Manufactured devices should be stamped with the rated working capacity and information provided by the vendor upon purchase. Under special circumstances, a shop-made hook, clip, or attachment device may have to be utilized. When

necessary, the hook, clip, or attachment device will have to be load tested and rated with a 6 to 1 safety factor.

Each worker will be protected with a safety harness attached to an independent lifeline. The lifeline will be securely attached to substantial members of the structure.

In some instances, the work platform may require being securely lashed to the structure to prevent swaying.

When wire rope clips are used on suspension scaffolds they will be:

- Constructed with a minimum of 3 clips installed, at a minimum of 6 rope diameters apart.
- Installed according to the manufacturer's recommendations.
- Inspected and retightened to manufacturer's recommendations after initial loading and at the start of each shift.
- Prohibited at the point of suspension for any platform or hoist.
- Installed with the U-bolt over the dead end of the wire rope and the saddle over the live end of the wire rope.

Gasoline-powered equipment is prohibited on suspension scaffolds.

Gears and brakes of hoists must be enclosed. Suspension hoists must have a braking device or locking pawl which automatically engages whenever an instantaneous change in momentum or an accelerated over speed occurs.

Wire ropes must be inspected by a competent person before each work shift and after any occurrence which could adversely affect the integrity.

Scaffold User Training Requirements

All Cotton employees who work on or adjacent to scaffolds will be trained by a Qualified Person qualified in scaffolds to recognize the hazards associated with the type of scaffold being used and to understand the procedures to control or minimize those hazards.

The training will include:

- The nature of any electrical hazards, fall hazards, and falling object hazards in the work area.
- The correct procedures for dealing with electrical hazards.
- The correct procedures for erecting, maintaining, and disassembling the fall protection systems.
- The correct procedures for erecting, maintaining, and disassembling falling object protection systems.
- The correct use of the scaffold.
- The correct handling of materials on the scaffold.
- The maximum intended load and load-carrying capacities of the scaffold.
- The manufacturer's recommendations for the scaffold.
- Retraining will be required when changes present a hazard the employee has not been previously trained for, or supervision believes the employee lacks the skill or understanding necessary to work safely on scaffolds.

Definitions

Cleat means a structural block used at the end of a platform to prevent the platform from slipping off its supports. Cleats are also used to provide footing on sloped surfaces such as crawling boards.

Competent person means one who is capable of identifying existing and predictable hazards in the surroundings or working conditions that are unsanitary, hazardous, or dangerous to employees, and who has the authorization to take prompt corrective measures to eliminate them.

Continuous run scaffold (Run scaffold) means a two-point or multi-point adjustable suspension scaffold constructed using a series of interconnected braced scaffold members or supporting structures erected to form a continuous scaffold.

Coupler means a device for locking together the tubes of a tube and coupler scaffold.

Crawling board (chicken ladder) means a supported scaffold consisting of a plank with cleats spaced and secured to provide footing, for use on sloped surfaces such as roofs.

Double pole (independent pole) scaffold means a supported scaffold consisting of a platform(s)

resting on cross beams (bearers) supported by ledgers and a double row of uprights independent of support (except ties, guys, braces) from any structure.

Exposed power lines mean electrical power lines which are accessible to employees, and which are not shielded from contact. Such lines do not include extension cords or power tool cords.

Eye or Eye splice means a loop with or without a thimble at the end of a wire rope.

Fabricated decking and planking mean manufactured platforms made of wood (including laminated wood, and solid-sawn wood planks), metal, or other materials.

Fabricated frame scaffold (tubular welded frame scaffold) means a scaffold consisting of a platform(s) supported on fabricated end frames with integral posts, horizontal bearers, and intermediate members.

Form scaffold means a supported scaffold consisting of a platform supported by brackets attached to formwork.

Guardrail system means a vertical barrier, consisting of, but not limited to, top rails, mid rails, and posts, erected to prevent employees from falling off a scaffold platform or walkway to lower levels.

Interior hung scaffold means a suspension scaffold consisting of a platform suspended from the ceiling or roof structure by fixed length supports.

Ladder jack scaffold means a supported scaffold consisting of a platform resting on brackets attached to ladders.

Landing means a platform at the end of a flight of stairs.

Maximum intended load means a total load of all persons, equipment, tools, materials, transmitted loads, and other loads reasonably anticipated to be applied to a scaffold or scaffold component at any one time.

Mobile scaffold means a powered or unpowered, portable, caster or wheel-mounted supported scaffold.

Outrigger means the structural member of a supported scaffold used to increase the base width of a scaffold to provide support for and increased the stability of the scaffold.

Outrigger beam (Thrust out) means the structural member of a suspension scaffold or outrigger scaffold which provides support for the scaffold by extending the scaffold point of attachment to a point out and away from the structure or building.

Outrigger scaffold means a supported scaffold consisting of a platform resting on outrigger beams (thrust out) projecting beyond the wall or face of the building or structure, the inboard ends of which are secured inside the building or structure.

Platform means a work surface elevated above lower levels. Platforms can be constructed using individual wood planks, fabricated planks, fabricated decks, and fabricated platforms.

Pump jack scaffold means a supported scaffold consisting of a platform supported by vertical poles and movable support brackets.

Qualified means one who, by possession of a recognized degree, certificate, or professional standing, or who by extensive knowledge, training, and experience, has successfully demonstrated his/her ability to solve or resolve problems related to the subject matter, the work, or the project.

Rated load means the manufacturer's specified maximum load to be lifted by a hoist or to be applied to a scaffold or scaffold component.

Stair tower (Scaffold stairway/tower) means a tower comprised of scaffold components that contain internal stairway units and rest platforms. These towers are used to provide access to scaffold platforms and other elevated points such as floors and roofs.

Supported scaffold means one or more platforms supported by outrigger beams, brackets, poles, legs, uprights, posts, frames, or similar rigid support.

Suspension scaffold means one or more platforms suspended by ropes or other non-rigid means from an overhead structure(s).

Two-point suspension scaffold (swing stage) means a suspension scaffold consisting of a platform supported by hangers (stirrups) suspended by two ropes from overhead supports and

equipped with means to permit the raising and lowering of the platform to desired work levels.

Walkway means a portion of a scaffold platform used only for access and not as a work level.

Hand and Power Tools

Purpose

To establish procedures for the safe use and handling of hand and power tools and equipment that are used during daily maintenance or construction operations.

Responsibilities

Supervisors will:

- Ensure that all hand and portable powered tools and other hand-held equipment are free from defects and are working and maintained properly.
- Inspect and document approval for usage of any employee owed tools.
- Ensure that tools are used following manufacturer recommendations.
- Ensure that all affected employees have been trained.
- Ensure that all affected employees comply with this program.
- Take damaged tools out of service immediately if they are defective.
- Conduct period inspections of work areas.

Employees will:

- Attend required training programs.
- Inspect hand and portable powered tools and equipment for defects or possible hazards before use.
- Tag any defective tools as out of service immediately.
- Reporting any defects to their supervisor immediately.

HSE Team will:

- Ensure that hand and portable powered tool safety measures are in place according to this program and the applicable OSHA standards.
- Audit this program and make any changes to it based on changes to regulations, audits and/or incident investigation, and corrective actions.

Tool Maintenance & Inspection

Faulty or improperly used hand tools are a safety hazard. All employees will be responsible for ensuring that tools and equipment (both company and employee-owned) used by them or other employees at their workplace are in good condition and inspected for any defects. Hand tools such as chisels, punches, etc., which develop mushroom heads during use, must be reconditioned or replaced, as necessary.

Broken or fractured handles on hammers, axes, and similar equipment must be replaced promptly. Worn or bent tools should be discarded regularly. Appropriate handles must be used on files and similar tools. No tool or equipment will be allowed to be modified from the manufacturer's design. When not in use, tools or equipment should be stored in a dry and secure safe location. Tools and equipment are to be unplugged while not in use.

Protection

Appropriate safety glasses, face shields, etc., must be worn while using hand tools or equipment which might produce flying materials or be subject to breakage. Eye and face protection must be worn when driving in tempered spuds or nails. Tool cutting/drilling edges should be kept sharp so that the tool will move smoothly without binding or skipping. Hearing protection will be required when noises reach 85dbl. When working around or with chemicals employees will be required to wear the appropriate PPE as per the SDS

Guarded Tools

Employees are not allowed to wear gloves while operating rotating equipment or tools unless the manufacturer of the equipment or tool requires and poses no threat to the employee's safety due to the manufacturer's design of guarding or due to continuous hand placement for operation. All safety

devices such as guards must be in place before inspection and use. No tool or equipment that requires the use of guards, handles, or any other safety feature will not be used without such devices in place. Guards must be used following the operator manual.

Company Provided Tools

Cotton provides hand and powered portable tools that meet accepted safety standards. A damaged or malfunctioning tool must not be used; it must be tagged with a do not use tag and in for servicing. Employees must use the correct tool for the work to be performed; if they are unfamiliar with the operation of the tool, they must request instruction from their supervisor before starting the job.

Supervisors are responsible for ensuring that their subordinates are properly trained in the operation of any tool that they are expected to operate. An employee is not permitted to use a powder-actuated tool unless instructed and licensed by the manufacturer.

Portable Electric Equipment Handling

Portable equipment will be handled in a manner, which will not cause damage, such as using the flexible cord to raise and lower the equipment. These flexible cords cannot be stapled or hung in a fashion that would damage the outer jacket or insulation.

Portable Electric Equipment Visual Inspection

Portable cord and plug-connected equipment and flexible cord sets (extension cords) will be visually inspected before use on any shift, for external defects and evidence of possible internal damage. If this equipment remains connected once it is put into place and is not exposed to damage, then inspection is deferred until relocation occurs.

To assure this inspection is completed and documented, the following program is being implemented in compliance with this regulation. Any tools not passing a visual inspection will be tagged “DO NOT OPERATE”.

Assured Grounding Conductor Program

The purpose of this program is to assure all employees of Cotton that all power tools, flexible cords, and/or cord sets used by them will have an effective, working grounding conductor for electrical safety and shock protection. Tools and equipment must be double insulated and, in some cases, effectively grounded. Grounded tools must always be used with an effectively grounded circuit.

Any extension cord used with a grounded tool must be a three-wire, grounded type. Electric-powered hand tools used on construction sites, on temporary wired circuits, or in wet environments will be used in conjunction with an approved ground fault circuit interrupter (GFCI). Repairs of defective tools will only be made by qualified electrical personnel.

Electrical Safety Program

Purpose

Although many forms of energy sources exist, electricity has become an essential requirement for everyday business operations, as we know them. However, as a source of power, electricity tends to be accepted without much thought to the hazards that can be encountered by the average worker. Perhaps because it has become so commonplace and such a familiar part of our daily work routine, it can often be handled without the respect it deserves.

This program has been written and established for Cotton to minimize potential employee exposures to serious workplace hazards such as electrocution, shock, arc-blast, fires, or explosions from electrical equipment, lighting, motors, machines, appliances, switches, controls, enclosures, etc. It also identifies requirements regarding electrical safety in the workplace, including the identification of hazards, signs, labels, and overload protection.

Regulations

29 CFR 1910 Subpart S - Electrical

29 CFR 1926 Subpart K - Electrical.

Responsibilities

Supervisors will:

- Provide the necessary training to affected employees and workers.
- Ensure that all employees understand and adhere to the procedures of this plan and follow manufacturer instructions.
- Make sure that procedures to protect employees from electricity in the workplace are implemented and followed.
- Make certain that personnel potentially exposed to electrical hazards are trained to a level corresponding to their job function and activities.

Employees will:

- Follow procedures to ensure electrical safety for themselves and their fellow employees.
- Follow the electrical safety practices to reduce the risk of electrical shock and death.

HSE Department will:

- Provide information concerning electrical safety and techniques to control or eliminate employee exposure to electricity in the workplace.
- Audit this program and make any changes to it based on changes to regulations, audits and/or incident investigation, and corrective actions.

Procedure and Requirements

Only trained, competent, authorized personnel will be allowed to energize or de-energize electrical circuits or perform work of an electrical nature on electrically driven equipment. These persons will perform safe-work practices and procedures to prevent electrical shock or other injuries resulting from either direct or indirect electrical contact. They will also utilize special testing equipment and techniques, personal protective equipment, insulating and shielding materials, and insulated tools while working on circuits or equipment that are or can be energized.

Only qualified personnel may perform activities on exposed parts carrying more than 480 volts or working on generation, transmission, and distribution installations.

Qualified personnel have been trained in and are familiar with the following items:

- The skills and techniques are necessary to distinguish exposed live electrical parts from other parts of electrical equipment.
- The skills and techniques are necessary to determine the nominal voltage of exposed live electrical parts.
- The clearance distances specified in 1910.333c and the corresponding voltages to which the qualified person may be exposed.
- Recognition of hazardous energy sources (electrical, mechanical, hydraulic, pneumatic,

thermal, spring-loaded, etc.)
- Methods and means are necessary to control and isolate energy.

Examination, Installation, and Use of Equipment

Electrical equipment will be maintained free from recognized hazards that are likely to cause death or serious physical harm to Cotton employees. Frequent and periodic inspections by management, trained personnel, and operating employees will be performed on a routine basis to establish and maintain safe working electrical conditions. Items for inspection should include:

- Identifying the work purpose and suitable electrical equipment needed, determined by classification type, size, voltage, and current capacity.
- Check for the manufacturer's nameplate/label/descriptive markings, they must be legible and unaffected by environmental conditions.
- Determine mechanical strength and durability of enclosure parts.
- Observe heating or arcing effects under conditions of use. Replace wire that is brittle, visibly corroded, or has rotting insulation.
- Insulation materials are intact with no cuts, breaks, or incorrect splices.
- Make sure that wires are UV-protected and kept away from heat, oil, and sunlight.
- The enclosures and cabinets are not damaged and have no missing knockouts or gaps that expose direct contact to energized electrical components, etc.
- Damaged equipment will be removed from service and tagged "Do Not Use".

Identification of Disconnecting Means and Circuits

Each disconnecting means (breakers) for motors, and appliances, as well as each service, feeder, and branch circuit at its disconnecting means or over-current device, will be legibly marked to indicate its purpose and voltage and arranged so the markings are evident. These markings will be of sufficient durability to withstand the environment involved.

Signs of labels are required on disconnects, circuit breakers, and control boxes at Cotton facilities. These signs and labels will identify the equipment they control, voltage rating, and amperage rating.

When working on electrical equipment at Cotton facilities, Cotton personnel, as well as electricians (including Sub-Contractors) will post signs reading "Danger - High Voltage" in high-voltage areas and/or "Danger - Electrical Hazard" in areas with exposed energized parts. When working on electrical equipment, applicable Lock-Out/Tag Out procedures will be followed per Lock Out/Tag Out.

Each circuit must have properly sized overload protection (fuses and/or circuit breakers) to protect its maximum current carrying capacity. Use the following factors to determine the correct size of the fuse or breaker.

Over-current Protection

In the event an overload device or circuit breaker trips in a distribution panel or switchgear room, the circuit breaker will not be reset or returned to the "ON" position until the cause of the circuit breaker operation has been determined by qualified electrical personnel. Once the circuit has been tested and it is determined that it can be safely re-energized, then the circuit breaker may be reset and returned to the "ON" position, restoring electrical power to the circuit it was supplying.

No materials may be stored inside or on any electrical cabinet.

Protection of Conductors and Equipment

Access to a distribution panel, breaker box, switch gear, etc. is to be secured, protected, and signed or warned against accidental contact by personnel not trained or qualified to be near live electrical parts (any live part of electrical equipment operating at 50 volts or more)

In locations where electric equipment would be exposed to physical damage, strong enclosures/guards will be arranged to prevent damage and a clear workspace must be provided, at least 6'6" high and 3' wide

Grounding

A potential shock hazard exists when no third wire, or grounding conductor, is used. If a fault occurs,

most of the current will follow the path of least resistance, which is usually through a worker's hands or feet and then back to the ground. To prevent this, all exposed non-current-carrying metal parts of cord and plug-connected equipment must be grounded by an approved system of double insulation, (unless this equipment is supplied through an isolating transformer with an ungrounded secondary of not over 50 volts).

All electrical equipment will be grounded. This includes circuits, equipment, metal cable trays, metal raceways, metal enclosures for conductors, and services that are grounded.

Grounding the Cotton equipment is a mandatory step in the set-up process of a job. Attaching the ground clamp to the grounding grid or approved ground location will provide a safe distribution of the electricity from the generator during a generator malfunction. Electricity will follow the path of the least resistance; therefore, the generator must not be running when the ground clamp is attached or removed from an approved grounding location.

Electrical Continuity

Metal raceways, cable armor, and other metal enclosures for conductors will be securely and metallically joined together into a continuous conductor and will be so connected to all boxes, fittings, and cabinets as to provide effective electrical continuity. The knockouts in cabinets, boxes, and fittings should be removed only if conductors are to be run through them. However, if a knockout is missing or if there is another hole in the box, the hole or opening must be closed. All interior-wiring systems in metal raceways or enclosures will be grounded at all times.

Approved Covers, Canopies

All pull boxes, junction boxes, and fittings will be provided with tight-fitting covers approved for the purpose. If metal covers are used, they will be grounded. In completed installations, each outlet box will have a cover, faceplate, or fixture canopy. If flexible cord pendants pass through a box opening, they will be provided with bushings on which the cords may bear.

General Illumination

Lamps for general illumination will be protected from accidental contact or breakage. Protection will be provided by elevation of at least 7 feet from the normal working surface or by a suitable fixture or lamp holder with a guard. The illumination of the area must be provided for employees required to blindly reach into obstructed or confined areas, which may contain energized parts.

Portable Illumination

Portable type hand lamps (drop-cords) supplied through flexible cords will be equipped with a handle of molded composition or other material approved for that purpose, and a substantial guard will be attached to the lamp holder or handle at all times.

Extension Cord Safety

The use of extension cords is common at Cotton facilities. Extension cords are electrical wiring and will be treated as an extension of permanent wiring and meet many of the same requirements. They will be protected from accidental damage and avoid use when sharp corners and projections may damage wiring. When you must string one through doorways or other pinch points, flexible cords and cables will be provided with padding or protection to avoid damage.

Extension cords will not be used as a replacement for permanent wiring, as a means of attaching multiple connections in a single outlet, or if the cord is defective (worn or frayed) or has been altered in some manner (grounding prong has been removed).

Extension cords will not be used in an area where there is standing water, will create a tripping hazard, or may be damaged by other equipment moving over them. Ground fault circuit interrupters (GFCIs) will be used with extension cords in situations where they would be exposed to water or moisture that could enter the cord connection(s).

Flexible cables and extension cords will not be used in place of fixed or permanent wiring, except for the following exceptions:

- Pendants.

- Wiring of fixtures.
- Connection of portable lamps or appliances.
- Wiring of cranes and/or hoists where flexibility is necessary for operation.
- Connection of stationary equipment which requires frequent interchange or moving.
- Prevention of the transmission of vibration, where vibration tends to fatigue fixed wiring.
- Appliances where the fastening means and mechanical connections are designed to facilitate removal for maintenance and/or repair, such as exhaust fans, water coolers, etc.
- Data processing cables that are approved as a part of a data processing system.
- Surge protection strips are designed to protect data processing equipment.

Electrical Safety-Related Work Practices

Even though electrical equipment may comply with the installation requirements, when employees are working with electrical equipment, they must use safe work practices. Prescribed distances must be maintained, avoiding the use of electrical equipment when the employee and/or equipment is wet, and performing lockout/tagout of equipment de-energized for maintenance.

Employees must always regard all wires as live and dangerous, even if de-energized if their source has not been locked or tagged out.

Overhead Line Work

If work is to be performed near overhead lines, the lines will be de-energized and grounded, or other protective measures will be provided before work is started. This activity would normally be performed by Utility Company workers. If protective measures are provided, such as guarding, isolating, or insulating, these precautions will prevent employees from bodily contacting such lines directly or indirectly.

Overhead Work for Unqualified Person

Overhead-powered and energized electrical lines have high voltages which can cause major burns and electrocution to workers. Workers must maintain a minimum distance of 10 feet from overhead power lines and nearby equipment. Conduct site surveys to ensure that nothing is stored under overhead power lines. Safety barriers and signs must be installed to warn nearby non-electrical workers of the hazards present in the area.

When an unqualified person is working on the ground in the vicinity of overhead lines or an elevated position near overhead lines, the location of the person and conductive object, vehicular and or mechanical equipment he/she may come into contact with (an unguarded, energized line) will not come closer than the following distances:

For voltages to ground 50kV or less	10 feet
For voltages to ground over 50kV	10 feet plus 4 inches for every 10kV over 50 kV)

Overhead work for Qualified Person

When a qualified person is working in the vicinity of overhead lines, whether in an elevated position or on the ground, the person will not approach or take any conductive object, vehicular and mechanical equipment without approved insulated safeguards closer to exposed energized parts than the following distances:

Less than or equal to 300 V	avoid contact
Greater than 300 V but less than 750 V	12 inches
Greater than 750 V but less than 2 kV	18 inches
Greater than 2 kV but less than 15 kV	2 feet

Greater than 15 kV but less than 37 kV	3 feet
Greater than 37 kV but less than 87.5 kV	3 feet 6 inches
Greater than 87.5 kV but less than 121 kV	4 feet
Greater than 121 kV but less than 140 kV	4 feet 6 inches

Bodily Contact with Conductive Materials

Any conductive materials or equipment that is in contact with any part of an employee's body will be handled in a manner that will prevent them from contacting exposed energized conductors or circuit parts. If long-dimensional conductive objects (pipes, rods, ducts) must be handled around exposed live parts, work practices including guarding, insulating, or safe material handling techniques will be used to minimize the hazard.

Portable Ladder Use

Any portable ladder used by an employee that could contact exposed energized parts will have non-conductive side-rails (wood, fiberglass).

Wearing Conductive Articles

Conductive articles of jewelry or clothing (watch bands, bracelets, rings, key chains, necklaces, metalized aprons, cloth with conductive thread, or metal headgear) may not be worn if they might contact exposed energized parts unless they are made non-conductive utilizing covering, wrapping, or insulation.

Housekeeping Duties

Employees may not perform housekeeping duties close to exposed energized parts unless adequate safeguards (insulating equipment or barriers) are provided. Electrically conductive cleaning materials (steel wool, metalized cloth, or silicon carbide) may not be used in proximity to energized parts unless procedures are followed which will prevent electrical contact.

Portable Electric Equipment Handling

Portable equipment will be handled in a manner, which will not cause damage, such as using the flexible cord to raise and lower the equipment. These flexible cords cannot be stapled or hung in a fashion that would damage the outer jacket or insulation.

Portable Electric Equipment Visual Inspection

Portable cord and plug-connected equipment and flexible cord sets (extension cords) will be visually inspected before use on any shift, for external defects and evidence of possible internal damage. If this equipment remains connected once it is put into place and is not exposed to damage, then inspection is deferred until relocation occurs.

Assured Grounding Conductor Program

The purpose of this program is to assure all employees of Cotton that all power tools, flexible cords, and/or cord sets used by them will have an effective, working grounding conductor for electrical safety and shock protection.

Inspection

Except for cord sets and receptacles which are fixed and not exposed to damage, all cord sets, attachment caps, plug and receptacle of cord sets and any other equipment connected by cord and plug will be visually inspected daily by the employee or supervisor before utilizing this equipment. Items for inspection are to include:

- External defects such as deformed, crushed, missing blades or pins.
- External insulation damage, cuts, separations, burns, run over, etc.
- Damaged, cracked - shorted - receptacles/cover plates, missing items.

Any item inspected that is damaged will be tagged out of service with a "DO NOT USE" tag and removed from service until repaired and tested. Attachment plugs and receptacles may not be connected or altered in a manner that would prevent proper continuity of the equipment grounding conductor at the point where the plugs are attached to receptacles.

Testing of Instruments, Tools, and Equipment

Only qualified persons may perform testing work on electric circuits or equipment. A visual inspection of their test instruments and equipment or tools is required before using. Items to be inspected include:

- test leads
- cables
- power cords
- probes
- connectors
- insulation on tools

Any defective or damaged item will be removed from service and no employee may use it until necessary repairs and tests to render this equipment safe have been performed.

Use of Personal Protective Equipment

Employees working in areas where there are potential electrical hazards will be provided with and used, with electrical protective equipment that is appropriate for the specific parts of the body to be protected and for the work to be performed. It will be maintained in a safe, reliable condition and periodically inspected or tested. These items can include:

- non-conductive head protection
- safety glasses
- face shields
- rubber insulating gloves (leather outer covering is allowed)
- rubber aprons
- non-conductive work shoes/boots

Alerting Techniques

To control potential employee exposures, which could cause injury due to electric shock, burns, or failure of electrical parts, appropriate, identified safety signs, symbols, or accident prevention tags will be used to warn employees about electrical hazards, which may endanger them. Non-conductive barricades may be used in conjunction with signs and tags to limit employee access to exposed work areas, or an attendant may be stationed to warn and protect employees.

Insulation and Grounding

Insulation may be damaged by hard usage on the job or simply by aging. If this damage causes the conductors to become exposed, the hazards of shocks, burns, and fire can exist. Double insulation will be used as additional protection on the live parts of a tool, but double insulation does not provide protection against defective cords and plugs or heavy moisture conditions.

The use of a ground-fault circuit interrupter (GFCI) is one method used to overcome grounding and insulation deficiencies. This fast-acting circuit breaker senses very small electrical imbalances or current leakage to the ground and shuts off the electricity. This equipment will be provided for employees required to perform work using portable electrically operated tools and equipment attached to flexible cord sets when in wet locations or conditions of potential moisture.

Electrocution/First Aid

A large majority of electrocutions are caused by voltages of less than 600 Volts, which are the most common found in this workplace. The following health effects are possible when exposed to certain currents:

Greater than 3 mA	a painful shock that can cause indirect accidents
Greater than 10 mA	muscle contraction, “no-let-go” danger
Greater than 30 mA	lung paralysis and is usually temporary.
Greater than 50 mA	possible ventricular fibrillation
100 mA to 4 A	certain ventricular fibrillation, fatal
Greater than 4 A	heart paralysis may be temporary, severe burn

Due to the potential for electrocution, employees who regularly perform work on or around energized electrical equipment will be instructed in CPR/First Aid methods.

Training

This program and discussion have been provided to help Cotton employees in protecting themselves against electrical hazards at this work location, through the use of safe work practices, hazard recognition, properly inspected tools and equipment, GFCIs, an assured equipment grounding conductor program, PPE, warning signs or tags, and establishing authorized personnel to perform electrical work.

Following these rules and regulations will help reduce the number of accidents and injuries from electrical hazards. Work disruptions to perform the necessary inspections should require little time compared to the loss that could potentially occur if personnel, equipment, or facilities are injured or destroyed.

Employees who perform work duties that may expose them to the risk of electric shock will receive training to familiarize them with safety-related work practices.

- Facility employees will receive awareness training annually on electrical safety.
- Licensed electricians will receive refresher training every 3 years.

This training will address safety-related work practices and will include the techniques required to distinguish exposed energized parts from other parts of electric equipment, the skills and techniques required to determine the nominal voltage of exposed energized parts, the clearance distances, and the corresponding voltages to which the qualified person will be exposed.

Definitions

Attachment Plug (Plug cap) (Cap) – A device that, by insertion in a receptacle, establishes a connection between the conductors of the attached flexible cord and the conductors connected permanently to the receptacle.

Cable Tray System – A unit or assembly of units or sections, and associated fittings, made of metal or other noncombustible materials forming a rigid structural system used to support cables. Cable tray systems include ladders, troughs, channels, solid bottom trays, and other similar structures.

Conductor: Bare – A conductor having no covering or electrical insulation whatsoever.

Covered – A conductor encased within a material of composition or thickness that is not recognized as electrical insulation.

Insulated – A conductor encased within a material of composition and thickness that is recognized as electrical insulation.

Controller – A device or group of devices that serves to govern, in some predetermined manner, the electric power delivered to the apparatus to which it is connected.

Device – A unit of an electrical system that is intended to carry but not utilize electric energy.

Disconnecting Means – A device, group of devices, or other means by which the conductors of a circuit can be disconnected from their source of supply.

Disconnecting (or Isolating) Switch (Over 600 volts, nominal) – A mechanical switching device used for isolating a circuit or equipment from a source of power.

Enclosure – The case or housing of apparatus; or the fence or walls surrounding an installation to prevent personnel from accidentally contacting energized parts, or to protect the equipment from physical damage.

Energized – Containing or having the potential to contain an electrical current.

Equipment – A general term including material, fittings, devices, appliances, fixtures, apparatus, and

the like, used as a part of, or in connection with, an electrical installation.

Flexible Extension Cords – Includes electrical extension cords, extension lights, flexible cables, and cords used on portable equipment.

Grounded – Connected to earth or to some conducting body that serves in place of the earth.

Grounding Conductor – A conductor used to connect equipment or the grounded circuit of a wiring system to a grounding electrode or electrodes.

Grounding Conductor, Equipment – The conductor used to connect the non-current-carrying metal parts of equipment, raceways, and other enclosures to the system grounded conductor and/or the grounding electrode conductor at the service equipment or the source of a separately derived system.

Grounding Electrode Conductor – The conductor used to connect the grounding electrode to the equipment grounding conductor and/or to the grounded conductor of the circuit at the service equipment or the source of a separately derived system.

Ground-Fault Circuit-Interrupter (GFCI) – A device whose function is to interrupt the electric circuit to the load when a fault current to the ground exceeds some predetermined value that is less than that required to operate the overcurrent protective device of the supply circuit. Labeled – Equipment is "labeled" if there is attached to it a label, symbol, or other identifying mark of a nationally recognized testing laboratory that: makes periodic inspections of the production of such equipment and whose labeling indicates compliance with nationally recognized standards or tests to determine safe use in a specified manner.

Listed – Equipment is "listed" if it is of a kind mentioned in a list that, (a) is published by a nationally recognized laboratory that makes periodic inspection of the production of such equipment, and (b) states such equipment meets nationally recognized standards or has been tested and found safe for use in a specified manner.

Overcurrent – Any current above the rated current of equipment or the ampacity of a conductor. It may result from overload (see definition), short circuits, or ground faults. A current above rating may be accommodated by certain equipment and conductors for a given set of conditions. Hence the rules for overcurrent protection are specific for particular situations.

Overload – Operation of equipment above normal, full load rating, or of a conductor above rated ampacity which, when it persists for a sufficient length of time, would cause damage or dangerous overheating. A fault, such as a short circuit or ground fault, is not an overload.

Qualified Person – A qualified person has completed an apprenticeship and received training covering the electrical hazards of working on or near exposed energized parts. In some areas, there are other specific requirements for qualified persons that are required by the local, regional, or country agencies. An individual who has received electrical training but has not received training covering the hazards of exposed, energized parts is not considered a qualified person. The level of knowledge of electrical systems and the associated hazards of the energized parts will determine qualification. Also, an individual may be qualified on specific equipment but not qualified on all equipment.

Raceway – A channel designed expressly for holding wires, cables, or busbars, with additional functions as permitted in this subpart. Raceways may be of metal or insulating material, and the term includes rigid metal conduit, rigid nonmetallic conduit, intermediate metal conduit, liquid-tight flexible metal conduit, flexible metallic tubing, flexible metal conduit, electrical metallic tubing, underfloor raceways, cellular concrete floor raceways, cellular metal floor raceways, surface raceways, wireways, and busways.

Receptacle – A contact device installed at the outlet for the connection of a single attachment plug. A single receptacle is a single contact device with no other contact device on the same yoke. Multiple receptacle is a single device containing two or more receptacles.

Unqualified Person – A person that has minimal or no training in electrical systems and/or in recognition of electrical hazards.

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

Voltage, nominal – A nominal value assigned to a circuit or system to conveniently designate its voltage class (as 120/240, 480Y/277, 600, etc.). The actual voltage at which a circuit operates can vary from the nominal within a range that permits satisfactory operation of equipment.

Voltage to the ground – For grounded circuits, the voltage between the given conductor and that point or conductor of the circuit that is grounded, for ungrounded circuits, the greatest voltage between the given conductor and any other conductor of the circuit.

Wireways – Sheet-metal troughs with hinged or removable covers for housing and protecting electric wires and cable, and in which conductors are laid in place after the wireway has been installed as a complete system.

First Aid and Medical Services Program

Introduction

Even though it is the intent of Cotton to provide and maintain a workplace free of safety and health hazards, establish policies for safe work practices and procedures, and expect its employees to perform their work safely, the potential for accidents and injuries to occur still exists.

OSHA requires employers to provide prompt medical services and first aid before the commencement of a project, and for injured or ill workers during their employment. With this directive in mind, the following guidelines are being established, and its procedures will be effectively implemented by trained employees. Training on annual bases will be provided to all full-time supervisors that may be required to render First Aid.

Regulations

29 CFR 1910.151

29 CFR 1926.23

29 CFR 1926.50

Responsibilities

Supervisor will:

- Ensure that at least one person on site is trained in First Aid/CPR.
- Inform the HSE Department of any injury or illness that takes place.
- Ensures that employees comply with the guidelines established by this program.
- Ensures that employees complete required training.
- Ensures First Aid Kits are supplied and onsite.

Employees will:

- Maintain a safe work environment and report any injury or illness to the HSE Department.
- Comply with this program.
- Completes required training

HSE Department will:

- Ensure the ready availability of medical personnel for advice and consultation on matters of occupational health.
- Ensures that a written program is in place.
- Audit this program and make any changes to it based on changes to regulations, audits and/or incident investigation, and corrective actions.

Requirements and Procedures

Trained Personnel

There will be at least one certified First Aid trained person on duty at all times, for Cotton First Aid/CPR training will be provided by contract training resources that meet nationally recognized medical organization criteria.

Emergency Contacts

Before work begins at this location, all employees will be made aware of all emergency phone numbers if needed for the transportation of injured personnel. These numbers are conspicuously posted at Cotton offices, job- sites, or as communicated by various job-site Foremen. In the event of a serious injury requiring medical attention other than minor First Aid, only qualified, certified personnel will manage the injured person until professional medical help has arrived.

Emergency Action

First aid measures are of extreme importance within the first few minutes for a worker that has incurred a serious or incapacitating injury. A primary assessment by an emergency responder will determine

the nature and extent of the injury experienced. If you are assigned this responsibility, and before you initiate any action, take note of the immediate surroundings to make sure you do not become a victim yourself!

- Stay calm, take a deep, relaxing breath (possible adrenaline rush)
- Look for mechanisms or forces that caused this incident
- Be aware of environmental limitations (cold, heat, moisture)
- Control outside interference (traffic, crowds, bystanders)
- Check unknown hazards (gas, chemical, electrical, fire, explosion, lack of oxygen, radiation, weapons, etc.)

Body Barriers and First Aid Kits

Your goal is to protect yourself and your patient, utilizing disposable barriers consisting of latex disposable gloves, mouth-to-mouth barrier, eye-shield, mouth-covering, and protective clothing if provided. This equipment for blood-borne pathogen protection is located with the First Aid Kits, which are located in the job box, box truck, or trailer at each job site.

The First Aid Kit consists of the following items and is to be checked weekly by the job-site Supervisor, for items to be replenished. These kits are maintained on a monthly inspection basis by the safety department or their representative. You should notify the job-site foreman for the requisition of any needed supplies. These approved First Aid kits will be easily accessible, maintained in a serviceable condition, and are to be used for no other type of storage, inside or on top of the cabinet. Individual packaging and sealing will be required only for those items, which must be kept sterile.

Items such as scissors, tweezers, and tubes of ointment with caps or rolls of adhesive tape need not be individually wrapped, sealed, or disposed of after a single-use application. Tear-open individual packages of ointments, antiseptics, and the like will be disposed of after one-time use and not stored.

Medical Assistance Guidelines

A seriously injured or incapacitated person should be treated as found, or moved as little as possible unless the following hazards are present:

- **Electrical** - if still in contact with energized sources, shut off the power supply, or move the victim away from a power source with a non-conducting device.
- **Asphyxiation** - if inadequate oxygen exists or toxic gas is present, remove victim to fresh air, or supply with oxygen where found.
- **Fire/explosion** - remove the victim from flames or combustible sources.
- **Corrosive liquid splashes** - remove victim to dry, uncontaminated area upwind of release, using appropriate PPE to control exposures.
- **Building/structural failure** - remove victim if building collapse is imminent or experienced.

If the emergency movement becomes necessary and no stretcher is available, you can utilize a blanket, tarpaulin, or sheet of heavy plastic. Pull in the direction of the body's axis, never sideways. Utilize help and extreme caution if spinal injuries are suspected.

SHOUT AND TAP at the victim if unconscious. If no response, activate the EMS. Calling for assistance should be performed by someone other than the responder, unless alone. If alone, stabilize and secure the victim before leaving to make the call. **(Dial 911)**

OPEN THE AIRWAY while protecting the spine with one hand that firmly secures the forehead of the victim, while the other lifts the lower bony portion of the chin. Check for signs of breathing by watching the chest rise and fall or feeling exhaled breath out of the mouth or nose. If breathing is absent, begin immediate resuscitation efforts by pinching off the nose, placing a mouth-to-mouth barrier in place, and administering 2 full slow breaths. Administer 1 slow, full breath every 5 seconds until breathing is restored.

CHECK THE CAROTID PULSE with two fingers placed on either side of the throat. Do not use your thumb so as not to prevent confusion with your pulse. If a pulse is absent, locate your hand position 2 finger widths above the landmark and begin a series of 30 chest compressions at a rate of 80 to 100 per minute, alternating with 2 slow full breaths of air administered between compression series.

Stop after 4 cycles of compression/breathing and check pulse for 3 to 5 seconds. Continue compressions and breaths until restored or professional medical assistance arrives.

CHECK FOR AND CONTROL SERIOUS, PROFUSE BLEEDING. Use firm, direct pressure, and a clean compress. Do not "peek" under a blood-soaked compress, as you will diminish any clotting that has

occurred. Just add more compression bandages. Never apply a tourniquet. Elevation of the affected area or applying pressure at a point directly above the affected area can also be effective in controlling blood loss.

CHECK FOR SIGNS OF SHOCK, such as:

- overall weakness, disorientation, confusion, unresponsive, faint
- dizziness or nausea with possible vomiting
- restlessness, fear, or combativeness
- thirst
- breathing rapid and willow
- skin cool and clammy, face pale and/or lips, tongue, earlobes blue
- eyes lackluster and pupils dilated
- pulse rapid and weak

All of these symptoms may present themselves at different times or in combinations, there is no set pattern. To combat these, have the patient lie down at rest, keep the airway open and control any external bleeding. Keep warm with coverings, but do not overheat. If the face is pale then elevate their legs 8-12 inches, if the face is red, then elevate the head and shoulders.

These are general guidelines to follow, unless fractures or spinal injuries are present, which will not allow for any elevation. Do not give the patient anything by mouth even if serious thirst is expressed. Monitor vital signs. You will most likely be unable to bring a patient out of shock, but you may be able to prevent shock or keep it from worsening by following the outlined procedures.

Fracture

A person with a fracture must be treated carefully to prevent the injury from becoming worse and increasing shock potential. A fracture may be suspected if any of the following items are observed:

- abnormal shape of a body part
- inability to move a body part or extreme pain during movement
- swelling with skin color change

Utilize available materials to fashion a splint and install this device on the limb in the position it was found. Do not attempt to realign anything.

Burns

First aid for burns, whether due to heat or cold the treatment is the same, by applying very cold water to the burned area. Do not attempt to remove materials stuck to the burned surface, and never apply oil, grease, butter, or similar substances to a burned area. Cover with a loose dressing.

Choking

If choking is observed, ask the person if they are choking, or observe them grasping for their throat, or skin color changing to blue. Approach the person from behind, wrapping your arms around the mid-section, just above the navel. Turn one hand with thumb knuckle into the stomach region and place the other hand over the first with the intent of thrusting together, up, and inward into the abdomen. Perform a series of 5 abdominal thrusts with the intent of dislodging the object unless the airway opens. If not, reassess the patient airway, reposition hands, and continues a series of thrusts until successful.

Corrosive Materials

Where the eyes or body of any employee may be exposed to injurious corrosive materials, suitable facilities will be provided within the work area. Flush eyes/body for a minimum of 15 minutes for corrosive exposures. When Cotton employees are servicing accounts at host-facility work sites, they will be made aware of the presence and operation of that facility's eyewash/safety shower equipment during site-specific orientation.

Personnel Illness

Illness assessment would be performed based on the medical problems described by someone. A sign is something you see, hear, or feel, and a symptom is something the patient states. Illness assessment involves talking to the patient and checking signs and symptoms.

- Check pulse (60 - 100 beats per min. in normal adult at rest)
- Check respiration (12 - 20 breaths per min.)
- Check body temperature (98.6 is normal)
- Check tissue color (look inside lips, under fingernails, lower eyelids)
- Ask the patient how they feel
- Check medical history
- Ask about any medications being used
- Check for medical alert tags

Conclusion

Employees with known medical conditions or problems should disclose this information to their Job-site Foreman so immediate appropriate medical attention can be provided for instances of allergies, seizures, diabetes, cardiovascular conditions, respiratory problems, asthma, etc.

In the absence of a trained medical responder, the above-mentioned guidelines can be implemented by a bystander as opposed to not participating and watching a person lose their life. States provide for a Good Samaritan Law that protects you from civil liability if you act in good faith to provide care to the level of your training and the best of your ability.

Actual consent must be stated or displayed by the victim before care can be initiated. Any refusal of care must be respected. A clear, informed victim's decision must be made before you may proceed. If unconscious, confused, or so severely injured that a clear decision cannot be made, then implied consent is assumed, and patient care initiated. Employee personnel files should list their family, address, phone number, next of kin, and personal physician name and phone number for any needed contact or support. Anticipatory orders from identified physicians should also be on file to cover emergency or routine care for special health problems.

First Aid Supplies

Each first aid kit is inspected and restocked and stored in a weatherproof container with individually sealed packages for each type of item. The first aid kit should have the basic equipment for administering first aid to injuries.

First Aid Kit Minimum Contents Checklist

First Aid	Infection Control
72 pg. AMA First-Aid guide	1- Pair of latex gloves
1- Pair of scissors	1- Apron
10- Alcohol cleaning pads	1- Eyeshield/face mask
10- Triple Antibiotic Ointment	1- Shoe cover
5- 2"x3" Non-stick pads with adhesive	1- Packet Red-Z absorbent
5- Knuckle bandages	1- 2 oz bottle Sanitize disinfectant/cleaner
5- Finger bandages	2- Red Biohazard bags with twist ties
16 - ¾"x 3" Adhesive plastic bandages	1- Scraper
1- Latex gloves	1- Scooper
1- 4"x5" Instant cold compress	2- Paper towel
1-36"x51" Triangular sling/bandage (2) safety pins	1- Exposure report form
1- Disposable CPR mask	

Training

All employees with a current, valid first aid CPR certification are considered approved for administering first aid. First aid and CPR training are provided to individuals who need it due to the nature of their work and responsibility. Training will be conducted per the American Red Cross or American Health Association guidelines or other nationally recognized programs.

Blood bourne pathogens training is designated for employees responsible for rendering first aid or medical assistance. They will be instructed in the sources, hazards, and avoidance of bloodborne

pathogens including universal precautions and the use of PPE.
Refresher training for first aid and CPR will be retrained at least annually.

Definitions

Automated External Defibrillator (AED) – A device that analyzes the heart rhythm and determines if an electrical shock is required to restore a normal heart rhythm

Cycle – Each cycle or set consists of 30 chest compressions and 2 rescue breaths

Compressions – Act of pushing on the chest

CPR – Cardiopulmonary resuscitation comprised of chest compressions and breaths given to people considered to be in cardiac arrest

Defibrillation – An electrical impulse that eliminates abnormal, rapid heartbeats

Good Samaritan Law – Provides legal protection to people who willingly provide emergency care to injured persons, without accepting anything in return. The law protects people who act the same way a “reasonable and prudent person” would if that person were in the same situation.

Blood Borne Pathogens Exposure Control

Introduction

This policy establishes an exposure control plan developed for all office and operational employees to protect against potential occupational exposure to blood or other infectious bodily fluids. Bloodborne pathogens are disease-causing micro-organisms that are present in human blood and other bodily fluids and can cause disease in humans. These pathogens include but are not limited to Hepatitis B and C viruses (HBV/HCV) and Human Immunodeficiency virus (HIV).

References

OSHA 29 CFR 1910.1020

OSHA 29 CFR 1910.1030

Responsibilities

Supervisor will:

- Ensure only trained and qualified personnel administer emergency and/or first aid medical care.
- Ensure that procedures to protect employees from bloodborne pathogens in the workplace are implemented and followed.
- Provide all appropriate PPE at no charge to the employee.
- Ensure that employees observe Universal Precautions at all times.

Employee will:

- Follow the requirements of this procedure when exposed to bloodborne pathogens.

HSE Department will:

- Provide information concerning bloodborne pathogens and techniques to control or eliminate employee exposure to blood and certain other potentially infectious bodily fluids in the workplace.
- Audit this program and make any changes to it based on changes to regulations, audits and/or incident investigation, and corrective actions.

Procedures and Requirements

General

Universal precautions will be observed to prevent contact with blood or other potentially infectious materials. Under circumstances in which differentiation between body fluid types is difficult or impossible, all body fluids will be considered potentially infectious materials.

Unprotected contact with blood and other potentially infectious material will be avoided.

All regulated waste will be disposed of in appropriate containers and removed by an approved medical waste disposal company.

Workplace Practices

Normal work practices do not offer potential contact with blood-borne pathogens or infectious bodily fluids. The exception is during first aid response. All employees will be trained on the universal precautions of this policy. Individuals responding to first aid incidents will adhere to these work practices.

Work Practice Controls include the following:

- Impervious vinyl or latex gloves will be worn when examining, cleaning, and/or treating wounds, and cleaning contaminated equipment
- Disposal gloves will be worn when it can be anticipated that the employee may have hand contact with blood or other potentially infectious materials, and when touching or handling contaminated items or surfaces
- Single-use, disposable gloves should be replaced as soon as practical when contaminated,

punctured, or when their ability to act as a barrier is compromised

- The disposable gloves, mask, apron, and glasses will be worn when cleaning up blood or other bodily fluids

At least one person per operational shift will hold a current certificate in first aid/CPR issued by the Medic First Aid, American Red Cross, or equivalent. This person will be the designated first aid responder. This is typically performed by the client or host facility but should be verified.

At each location, a first aid kit will be available containing the following protective equipment for adhering to the CDC universal precautions: disposable latex or nitrile gloves (5 mils), face shield, resuscitation mask with an oxygen inlet valve, gown, antiseptic towelettes, antiseptic hand cleaner, disinfectant, absorbent towelettes, biohazard bags with biohazard insignia.

First aid responders will use a pocket breathing barrier, resuscitation mask, or bag valve mask to resuscitate a victim to minimize the exposure that may occur during emergency mouth-to-mouth resuscitation. The CPR provider will also don nitrile or latex gloves.

Cotton will provide the personal protective equipment listed above in the appropriate sizes and at no cost to its employees. Resuscitation masks will be provided to all designated first aid responders. Supervisors will ensure that this equipment is utilized.

The job site Supervisor is responsible for the implementation of this policy including workplace practices, universal precautions, and engineering controls.

Exposure Determination

Employees who are designated as First Aid Responders must practice a universal precaution that assumes that all human blood and certain body fluids and residues are handled as if known to be infectious for HIV, HBV, and other blood-borne pathogens. Due to the difficulty in determining which bodily fluids are infectious, all bodily fluids will be considered infectious without regard to the use of PPE and universal precautions.

Personnel, whose duties require emergency response and/or rendering first aid, have the following potential for exposure:

- Blood from open wounds or contact with other body fluids contaminated with blood; and
- Mouth contact while performing Cardiopulmonary Resuscitation (CPR).

Personnel, whose duties require cleaning areas that are contaminated with blood or bodily fluids have the following exposure:

- Blood or contact with other body fluids contaminated with blood.

The exposure determination is made regardless of the use of PPE which can fail to protect the employee as intended.

Implementation

The following procedures will be implemented at the office and any job site where Cotton employees are present and where there is potential occupational exposure to blood, body fluids, and residues (blood or fluid contaminated first aid dressings and clothing, spills, absorbents, etc.).

The following universal precautions are taken from excerpts provided by NIOSH, CID, and CDC, and are to be used to prevent contact with blood or other potentially infectious materials. Without adherence to these universal precautions during first aid administration, exposure to infectious agents may likely occur.

Personal Protective Equipment

- Gloves will be worn when the employee has the potential for the hands to have direct skin contact with blood, other potentially infectious material, mucous membranes, non-intact skin, and when handling items or surfaces soiled with blood or other potentially infectious material.
- Gloves will be replaced as soon as possible when visibly soiled, torn, and punctured or when their ability to function as a barrier is compromised.
- Disposable gloves will not be reused.
- Masks and eye protection or chin-length face shields will be worn whenever there is potential for eye, nose, or mouth contamination due to splashing, spraying, spattering, etc.
- Use gowns, masks, goggles, or face shields for procedures that could involve more extensive

splashing of blood or body fluids.

- Caps or hoods will be worn where there is a potential of infectious material getting on the head.
- Use pocket breathing barrier, resuscitation masks, bag-valve resuscitation masks, or other ventilation resuscitation devices for minimizing exposure to fluids that may occur during emergency mouth-to-mouth resuscitation.
- Appropriate protective clothing will be worn if there is a potential for soiling of clothes with blood or other potentially infectious material.

Cotton will provide and maintain all PPE that is required to handle infectious materials at no cost to the employee.

Environmental Controls

If an area becomes contaminated with blood or infectious body fluids it will be disposed of in appropriate containers and removed by an approved medical waste disposal company. If the area cannot be immediately cleaned up, a biohazard sign must be affixed to the area until it is disinfected.

Engineering Controls

The designated first aid responder will utilize the following engineering controls and precautions whenever rendering first aid to another employee with the control of bleeding.

- Don latex or nitrile glove, 5 mils.
- Don gown and face shield before controlling bleeding with spurting blood.
- Wash hands thoroughly after removing gloves and immediately after contact with blood or body fluids. Hand washing facilities will include the lavatories in the restrooms. For sites where lavatories are not available, first aid kits will include an antiseptic hand cleanser in conjunction with a cloth or paper towels or antiseptic towelettes.
- The handling or use of needles and syringes is not permitted by first aid responders. Personnel who are diabetic or otherwise use syringes for medical purposes will be responsible for the personal control and proper off-site disposal of their syringes. All other employees will not handle syringes or needles found in the workplace but will report them to the Safety Specialist who will have an approved contract waste disposal company to collect and dispose of the instruments.
- Follow general guidelines for sterilization, disinfection, housekeeping, and waste disposal. Use appropriate protective equipment identified above. Place infected waste in biohazard bags (double-lined impervious bags labeled with the biohazard insignia below) and dispose bag via a licensed biohazardous waste disposal company. Any equipment, which may become contaminated, will be cleaned and disinfected. A disinfectant solution for cleaning equipment soiled with blood or body fluids can be prepared by mixing a solution of ¼ cup of household chlorine bleach with a gallon of water.
- Clean up all contaminated surfaces in contact with blood or blood spills using a disinfectant solution. A disinfectant solution can be prepared to mix ¼ cup of sodium hypochlorite (household chlorine bleach) diluted with a gallon of water. Flood the contaminated surface with the disinfectant and allow it to soak for at least 20 minutes. Use paper towels to absorb the solution and dispose of the towels in a biohazard bag or container.
- All bandages, materials, gloves, or other first aid materials contaminated with blood or other potential bodily fluids must be placed in a biohazard bag or container.
- If contaminated clothing is not discarded in the biohazard container, it must be laundered separately to prevent contamination.
- The biohazard container must be designed to prevent leaking, double bagged, and be designated with the precautionary biohazard label. The container or bag must be sent to a designated hazardous waste site.

All employees having administered first aid or having been exposed to OPIM will remove and properly dispose of all contaminated disposable personal protective equipment, such as latex gloves, in color-coded and labeled bags.

Cotton will ensure that the work site is maintained in a clean and sanitary condition where blood or OPIM is concerned.

All pails, mops, and other non-disposable items used in the decontamination process will be thoroughly decontaminated after each use. All disposable items used in the decontamination process will be placed in color-coded and labeled bags and disposed of by an authorized disposal company.

Facility personnel will wash their hands immediately or as soon as possible after the removal of the

gloves and after hand contact with potentially infectious materials.

Broken glassware will not be picked up by hand. Instead, it will be collected with tongs or swept up with a dustpan and brush.

All equipment, environment, and working surfaces will be properly cleaned and disinfected by an approved medical waste disposal company after contact with blood or other potentially infectious materials.

Eating, drinking, smoking, handling contact lenses, applying cosmetics or lip balm, etc. is prohibited in work areas where there is a reasonable probability that exposure to a hazardous substance can occur in the area.

All Engineering and work practice controls will be used to eliminate or minimize employee exposure. When exposure remains, personal protective equipment will be used. Engineering controls will be examined and maintained or replaced on a regular schedule to ensure their effectiveness.

HBV Vaccination Procedure

A Hepatitis B vaccination series (3 injections in 6 months) will be made available to all designated CPR/First Aid responders after they have been trained and within 10 working days of initial assignment to a position that could have occupational exposure, at no cost.

This offer is not mandatory and may be initially declined by the affected employee. If the employee later decides to accept the vaccination series, it will again be offered at no cost to the employee. (Any refusal will be documented by the employee signing the included employee declination statement and included in the employee's safety file.) A vaccination series will be offered within 24 hours of a reported bodily fluid exposure or even if exposure is suspected, to unvaccinated employees. This vaccination series for Hepatitis B is considered 90% effective if administered within 7 - 14 days of bodily fluid exposure. If a routine booster shot or shots are recommended by the

U.S. Public Health Service at a future date, the employee will be offered this service at the expense of Cotton

If an employee has already had a vaccination series or demonstrates immunity to HBV by testing procedures, they will not be required to participate in another repeat vaccination.

Post-Exposure Evaluation and Follow-up

When an employee is exposed, it should be reported to the Supervisor immediately. All employees who are exposed will be offered a post-exposure evaluation by a health care professional and a follow-up. Documentation of the route of exposure and the circumstances related to the incident.

Training

The following training must be provided to all employees at the time of hiring and annually thereafter.

- Contents of this policy
- Symptoms of blood-borne diseases
- Modes of transmission
- Employer exposure control plan, universal precautions, and special precautions.
- Tasks that may involve exposure.
- Controls to reduce exposure
- Types of personal protective equipment, the purpose of its use, and disposal methods
- Information on the Hepatitis B vaccine and the fact that it is provided by the company free of charge
- Emergency contacts
- Procedure to follow if an exposure incident occurs
- Information on a post-exposure occurrence
- Signs and labels
- Discussion

Retraining

Training will be updated immediately if any change occurs in the recommended procedures to protect the employee. Employees will be retrained annually.

Recordkeeping

Medical records which must be kept include the following:

- Name and social security number of each employee with occupational exposure.
- A copy of the employee's Hepatitis B vaccination documentation
- A copy of all results of examinations, medical testing, and follow-up procedures
- A copy of the doctor's written opinion of the employee evaluation
- A copy of the information given to the doctor

Confidentiality must be maintained, and the medical information will not be disclosed or reported without the employee's written consent. These records will be made available upon request by the employee or the Assistant Secretary of Labor (OSHA).

Training records must include the date and contents of the training session, the name and qualification of the person(s) conducting the training, the names and job titles of attendees, and their signatures.

Definitions

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

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

Exposure Incident – means a specific eye, mouth, other mucous membranes, non-intact skin, or parenteral (needlesticks, human bites, cuts, and abrasions) contact with blood or infectious body fluids or other potentially infectious materials that result from the performance of an employee's duties.

Occupational Exposure means reasonably anticipated skin, eye, mucous membrane, or parenteral contact with blood or other potentially infectious materials that may result from the performance of an employee's duties.

Other Potentially Infectious Materials means:

- Human Immunodeficiency Virus (HIV) or Hepatitis B Virus (HBV) containing cell or tissue cultures.
- Organ cultures, cultural media, or similar solutions.
- Unfixed tissues or organs-other than intact skin-from living or dead humans.
- Other body fluids, semen, vaginal fluid, cerebrospinal fluid, synovial fluid, amniotic fluid, saliva in dental procedures, and any other body fluids that become contaminated with blood.

Parenteral – When exposure occurs as a result of piercing the skin barrier.

Sharps – Any object that can penetrate the skin.

Universal Precautions – An approach to infection control. According to the concept of Universal Precautions, all human blood and certain human body fluids are treated as if known to be infectious for HIV, HBV, and other bloodborne pathogens.

Work Practice Controls – Controls that reduce the likelihood of exposure by altering how a task is performed, such as the use of latex gloves when controlling bleeding or prohibiting the recapping of needles by a two-handed technique.

Forklifts (Powered Industrial Trucks)

Purpose

Forklifts and powered industrial trucks are an important part of our business. The purpose of this program is to provide a safe environment for employees that ensures that our powered industrial trucks meet the requirements for safety and reliability. Every employee must be trained and evaluated before being allowed to drive these vehicles.

References

OSHA 29 CFR 1910.178

Responsibilities

Supervisors will:

- Ensure that no employees perform work on or near powered industrial trucks without receiving the required training.
- Provide communication between employees and management on safety issues.
- Make sure that employees have available and use all required PPE.

Employees will:

- Complete all required safety training before operating powered industrial trucks.
- Operate following this program.
- Wear all required PPE.
- Report any safety issues to a supervisor.

HSE Department will:

- Review this safety policy for effectiveness periodically and when program deficiencies are discovered act immediately to correct them.

Procedures and Requirements

Vehicle Requirements

All new powered industrial trucks acquired and used by the company must meet the design and construction requirements for powered industrial trucks, established in the "American National Standard for Powered Industrial Trucks, Part II, ANSI B56.1-1969." Powered industrial trucks must be labeled as being accepted by a nationally recognized testing laboratory and compliant with ANSI standards. All labels, nameplates, and markings must be maintained in a legible condition.

Cotton will obtain written approval from the manufacturer before making any modifications or additions that affect the capacity or safe operation of the vehicle. Capacity, operation, and maintenance instruction plates, tags, or decals will be changed accordingly.

If the truck is equipped with front-end attachments other than factory-installed attachments, the truck will be marked to identify the attachments and show the approximate weight of the truck attachment combination at maximum elevation with the load latterly centered.

When lighting is less than 2 lumen per square foot, auxiliary directional lighting will be provided on the truck. Forklift operators may not operate where lighting from the area or the vehicle is not sufficient.

General Guidelines

Name/data plates and markings will be in place and in legible condition. Any safety equipment provided by the manufacturer will be utilized. Only loads within the rated load capacity of the forklift will be carried. If the forklift is found to require repair, defective, or in any way unsafe, it will be tagged and taken out of service until it is restored to safe operating condition.

Operator Safety

The right of way will be given to vehicles and pedestrians and not be driven up to anyone standing in front of a bench or other fixed object. Unauthorized personnel will not be permitted to ride on powered industrial trucks. No person will be allowed to stand or pass under the elevated portion of any truck,

whether loaded or empty. Employees are prohibited from placing arms or legs between the uprights of the mast or outside the running lines of the truck. Keep hands, feet, and legs within the operating area of the forklift.

A safe distance will be maintained from the edge of ramps or platforms while on any elevated dock, platform, or freight car. Trucks will not be used for opening or closing freight doors.

There will be enough headroom under overhead installations, lights, pipes, sprinkler systems, etc.

An overhead guard will be used as protection against falling objects. Seatbelts will be utilized, and operators will look in the direction of, and keep a clear view of the path of travel.

Temporarily Dismounting

The operator will fully lower the forks, put controls in neutral, and set the brakes when dismounting the forklift. While dismounting, the operator will maintain three points of contact. When the operator of an industrial truck is dismounted and within 25 ft. of the truck still in his view, the load-engaging means will be fully lowered, controls neutralized, and the brakes set to prevent movement. If it is necessary to park on an incline, at least two wheels are to be chocked in addition to implementing proper parking procedures.

Parking or Unattended

A powered industrial truck is unattended when the operator is 25 ft. or more away from the vehicle which remains in his view or whenever the operator leaves the vehicle, and it is not in his view.

Shut off and the ignition key removed, and load-engaging means will be fully lowered, controls will be neutralized, power will be shut off, and brakes set. Wheels will be blocked if the truck is parked on an incline.

Operating on Grades

In general, all grades will be ascended or descended slowly. When ascending or descending grades above 10 percent, loaded trucks will be driven with the load upgrade. On all grades, the load and load-engaging means will be tilted back if applicable and raised only as far as necessary to clear the road surface.

Turning and Intersections

While negotiating turns, speed will be reduced to a safe level, and turning the hand steering wheel in a smooth, sweeping motion. Except when maneuvering at a very low speed, the hand steering wheel will be turned at a moderate, even rate.

Operators will stop and sound the horn at cross aisles and other locations where vision is obstructed. If the load being carried obstructs the forward view, the driver will be required to travel with the load trailing.

Docks and Loading Trucks

Dock board or bridge plates will be properly secured before they are driven over, and they will be driven over carefully and slowly, and their rated capacity never exceeded.

Dock boards, fixed jacks, and chocks are to be placed by the forklift operator only.

The flooring of trucks and trailers will be checked for breaks and weaknesses before they are driven onto. Brakes will be set, and wheel blocks will be in place to prevent the movement of trucks and trailers while loading or unloading. Fixed jacks, under the front of the trailer, must be used while unloading or loading when the tractor is disconnected.

Load Stability

Only stable or safely arranged loads will be handled and caution will be exercised when handling off-center loads which cannot be centered. Only loads within the rated capacity of the truck will be handled. The long or high (including multiple-tiered) loads which may affect capacity will be adjusted.

The forks are to be under the load as far as possible; the mast will be carefully tilted backward to stabilize the load.

Extreme care will be used when tilting the load forward or backward, particularly when high tiering. Tilting forward with load engaging means elevated will be prohibited except to pick up a load. An elevated load will not be tilted forward except when the load is in a deposit position over a rack or stack. When stacking or tiering, only enough backward tilt to stabilize the load will be used.

Forklift Maintenance and Inspection

If at any time a powered industrial truck needs repair, is defective, or in any way unsafe, the truck will be taken out of service until it has been restored to a safe operating condition. No truck will be operated with a leak in the fuel system until the leak has been corrected. Trucks in need of repairs to the electrical system will have the battery disconnected before such repairs. Industrial trucks will be examined before being placed in service and will not be placed in service if the examination shows any condition adversely affecting the safety of the vehicle. Such examination will be made at least daily. Where industrial trucks are used on a round-the-clock basis, they will be examined after each shift. Defects when found will be immediately reported and corrected.

The assigned operator must conduct forklift inspections before the beginning of each shift using the Daily Forklift Inspection or an equivalent form. Forklift inspection and service records will be completed and maintained. Forklift Inspection items include, but are not limited to:

- Brakes
- Tires
- Lights
- Lift systems
- Fluid levels
- Emergency brake
- Fuel
- Steering mechanism

Repairs are to be conducted only by qualified and authorized personnel as follows:

- Repairs will not be made in areas containing flammable gases or vapors.
- Any power-operated industrial truck not in safe operating condition will be removed from service. A written tag will be placed on the forklift. The tag will read “Unsafe Condition.”
- Battery charging and changing operations will be performed by trained personnel only.
- Forklifts will be kept in a clean condition and free from excess oil and grease. Only non-combustible agents will be used for cleaning forklifts.

Training

Only employees that have been trained and evaluated by an approved competent person will be allowed to drive powered industrial trucks. The Supervisor will coordinate with management to identify authorized trainers who have the knowledge, training, and experience to teach and evaluate industrial truck operators. All trainees will operate vehicles only under the direct supervision of their instructor. The powered industrial truck training program will consist of a combination of formal instruction, practical training, and evaluation of the operator's performance in the workplace.

The training content will include:

- Operating instructions, warnings, and precautions for the types of trucks, the operator will be authorized to operate.
- Differences between the truck and the automobile.
- Truck controls and instrumentation.
- Engine and motor operation.
- Steering and maneuvering.
- Visibility.
- Operation and limitation of fork and attachments.
- Vehicle capacity and stability.
- Inspection and maintenance requirements.
- Refueling and recharging.
- Operating limitations.
- Surface conditions where the vehicle will be operated.
- Compositions of loads and load stability.
- Load manipulation, stacking, and un-stacking.

- Pedestrian traffic in areas where the vehicle will be operated.
- Restricted places where the vehicle will be operated.
- Hazardous locations where the vehicle will be operated.
- Ramps and other sloped surfaces could affect the vehicle's stability.
- Closed environments where insufficient ventilation or poor vehicle maintenance could cause a buildup of carbon monoxide or diesel exhaust.
- Requirements of 29 CFR 1910.178.

Once an employee has completed the training program, they will be evaluated for adequate understanding and skill.

The evaluation will include:

- A demonstration of proper inspection procedures.
- A demonstration of understanding of the hazards of the workplace.
- Demonstrations of the ability to drive the vehicle, load the vehicle, and unload the vehicle in a manner that is safe and proper.
- A demonstration of understanding of the requirements of this program.

Each powered industrial truck operator must have their performance evaluated at least once every three years. Refresher training will be assigned when any of the following occurs:

- The operator has been observed to operate the vehicle in an unsafe manner.
- The operator has been involved in an accident or a near miss.
- The operator is assigned to drive a different type of vehicle.
- The operator has received an evaluation that reveals deficiencies.
- A condition in the workplace has changed in a manner that could affect safe operation.

Documentation

Forklift training will be documented.

The instructor must certify that the trainee has been evaluated as required, received enough training, and demonstrated competence in safe forklift operation. Employee training records will be maintained for a minimum of five years.

Per OSHA regulations, a forklift operator's certification is effective for three (3) years. After three years, forklift drivers are required to renew their certifications.

Refresher training may be required sooner than three years if an operator is seen operating a forklift in an unsafe manner, is in an accident involving a forklift or there are changes in the working environment or type of lift equipment.

Definitions

Capacity – a rating given to determine the amount of weight that can be lifted to a specific load height at a specific load center.

Carriage - refers to the forklift's support structure, in front of the mast, where the actual forks are mounted.

The Center of gravity is the point on an object at which all of the object's weight is concentrated. For symmetrical loads, the center of gravity is in the middle of the load.

A counterweight is a weight that is built into the truck's basic structure and is used to offset the load's weight and maximize the vehicle's resistance to tipping over.

Forklift – Industrial trucks powered by electric or internal combustion engines used to lift, carry, or stack material.

Fulcrum is the truck's axis of rotation when it tips over

The grade is the slope of a surface, which is usually measured as the number of feet of rise or fall over a hundred-foot horizontal distance (the slope is expressed as a percent).

Line of action is an imaginary vertical line through an object's center of gravity.

Lateral stability is a truck's resistance to overturning sideways

Load Backrest – attached to the forklift carriage and is responsible for restraining the load when the load is tilted rearward or upward. The forklift's backrest also aids in protecting the mast and the cylinder hoses.

Load center is the horizontal distance from the load's edge (or the fork's or other attachment's vertical face) to the line of action through the load's center of gravity.

Longitudinal stability is the truck's resistance to overturning forward or rearward.

Mast - a vertical structure of a forklift that provides a supportive pathway for the carriage rollers and allows the forklift to raise and lower the forks and material it is carrying.

Moment is the product of the object's weight times the distance from a fixed point (usually the fulcrum). In the case of a powered industrial truck, the distance is measured from the point at which the truck will tip over to the object's line of action. The distance is always measured perpendicular to the line of action.

Name / Data Plate – this plate provides information to the forklift driver so they know the maximum load the forklift can legally carry to prevent the load from becoming dangerous for the operators and others.

Overhead Guard - The Overhead Guard is the framework that is fitted to a truck which protects the forklift operator in case of falling objects.

Track is the distance between the wheels on the same axle of the truck.

Unattended - A forklift is considered unattended if the operator is 25 feet (7.5 meters) or more away from the vehicle that remains in his view, or whenever the operator leaves the vehicle, and it is not in his view.

Upgrade - With the forks pointing upward, and the load leaning back against the mast.

Heat Stress Prevention

Purpose

The purpose of this procedure is to provide an effective Heat Stress Prevention Program to reduce and control the hazards of heat stress in the workplace.

Regulations

Under the General Duty Clause, Section 5(a)(1) of the Occupational Safety and Health Act of 1970, employers are required to provide their employees with a place of employment that "is free from recognized hazards that are causing or likely to cause death or serious harm to employees."

Responsibilities

Supervisors will:

- Implement and maintain the Heat Illness Program in their work areas.
- Provide potable drinking water.
- Provide access to shade.
- Ensure personal factors that contribute to heat-related illness are taken into consideration before assigning a task where there is the possibility of a heat-related illness occurring.

Employees will:

- Report to work fit for duty, to perform their jobs without undue risk to themselves or others throughout the workday.
- Follow the guidance of the program.

HSE Department will:

- Audit this program and make any changes to it based on changes to regulations, audits and/or incident investigation, and corrective actions.

Procedures and Requirements

Identifying Hazards

If you know the symptoms of heat stress, you can keep those symptoms from getting out of hand. The symptoms that indicate heat stress symptoms can also be symptoms of other health problems. But if it is hot and you are working outside, heat stress is probably your prime hazard.

Each work location involved in working in hot environments will implement measures that must be in place to control the effect of environmental factors that can contribute to heat-related illnesses. The most common environmental factors are air temperature, humidity, radiant heat sources, and air circulation.

Physical factors that can contribute to heat-related illness will be taken into consideration before performing a task. The most common physical factors that can contribute to heat-related illness are the type of work, level of physical activity and duration, clothing color, weight, and breathability.

Supervisors must ensure personal factors that contribute to heat-related illness are taken into consideration before assigning a task where there is the possibility of a heat-related illness occurring. The most common personal factors that can contribute to heat-related illness are age, weight/fitness, drug/alcohol use, prior heat-related illness, etc.

Protection against Hazards

As with any hazards, the best way to deal with heat hazards is to try to prevent them. Dress for conditions wearing lightweight, light-colored loose clothing is the best. Wear a hat with a wide brim if you are out in the sun. Put sunscreen on exposed body parts.

Eat a regular, well-balanced diet, but try to stay away from hot or heavy food. Watch your salt consumption. Some people take salt tablets to replace the salt lost in perspiration when it is hot. But too much salt can be bad for you, so do not take salt tablets without a doctor's recommendation.

Drink plenty of fluids. Do not wait until you are thirsty, but by the time you are thirsty dehydration has

already started. Your body is sweating out a lot of fluid, and you have to keep replacing it. The best thing to drink is water. Avoid anything with caffeine or alcohol. Provision of Water.

Access to Potable Water

Employees will have access to potable drinking water. Where it is not plumbed or otherwise continuously supplied, it will be provided in enough quantity at the beginning of the work shift. Water will be provided in sufficient quantity at the beginning of the work shift to provide one quart per employee per hour for drinking the entire shift for a total of 2 gallons per employee per 8-hour shift.

Employees may begin the shift with smaller quantities of water if effective procedures for replenishment of water during the shift have been implemented to provide employees with one quart or more per hour.

Access to Shade.

Employees will be provided with access to shade. Shade areas can include trees, buildings, canopies, lean-tos, or other partial and/or temporary structures that are either ventilated or open to air movement.

The interior of cars or trucks is not considered shade unless the vehicles are air-conditioned or kept from heating up in the sun in some other way.

Employees suffering from heat illness or believing a preventative recovery period is needed will be provided access to an area with shade that is either open to the air or provided with ventilation or cooling.

Acclimatization

Acclimatization to heat through short exposures followed by longer periods of work in a hot environment can reduce heat stress. New employees and workers returning from an absence of two weeks or more should have five days of acclimatization. This period should begin with a less-than-normal workload and time exposure on the first day and gradually build up to normal workload and exposure on the fifth day.

Preventive Measures

Heat stress is the combination of environmental and physical work factors that constitute the total heat load imposed on the body. One of the best ways to reduce heat stress on workers is to minimize the amount of heat in the workplace. However, there are some work environments where heat production is difficult to control, such as high ambient temperature processes, humid work areas, or radiant heat from the sun or process equipment. However, most heat-related health problems can be prevented or the risk of developing them reduced.

When unacceptable levels of heat stress can potentially occur, there are generally five approaches to a solution.

- Modify the environment
- Modify the clothing or equipment
- Modify the work practices
- Modify the worker by heat acclimatization
- Modify production with a work/rest regiment

Engineering Controls

A variety of engineering controls, including ventilation and spot cooling at points of heat production, may be helpful. Shielding may be required as protection from radiant heat sources. Evaporative cooling and mechanical refrigeration are other ways to reduce heat by engineering controls. The use of extra air movers can be added to increase the turnover rate of interior air and remove heat inside enclosures. Cooling fans can increase air velocity and promote evaporation in hot conditions. Shutting down the hot process or feed lines is most effective, but equipment modifications, such as using mechanical equipment over manual labor also reduce the exposure.

Auxiliary cooling systems can range from simple ice vests, pre-frozen and worn under the clothing, to more complex systems; however, the cost of operation and maintenance vary considerably in all of these systems. Four auxiliary cooling systems presently available are:

- Water-cooled garments, such as water-cooled vest, undergarments, hoods, etc., requires a circulating pump, liquid container, and a battery.
- Air-cooled garments, such as suits and hoods, that require a vortex tube, connecting hose, and a constant source of compressed air.
- Ice pack vest, which although frozen before worn, does not provide continuous regulated cooling and require the use of backup frozen units every 2 to 3 hours; and
- Wetted over-garments, which can be as simple as wet Cotton terry cloth overalls worn overprotective clothing; the wetted over garment works best when there is air blowing across the wet garment to increase evaporation.

Jobsites

Supervisors will continuously check all employees and stay alert to the presence of heat-related symptoms. They will carry cell phones or other means of communication, to ensure that emergency services can be called and check that these are functional at the worksite before each shift. Every morning, workers will be reminded about the address and directions to the worksite to inform medical responders and emergency procedures.

Work practices can help reduce the risk of heat disorders. Making plenty of drinking water available at the workplace and urging workers to drink often will be standard practice in all situations of potential heat stress. In high heat stress environments, an employee can lose as much as one quart of liquid per hour. When possible and especially during acclimatization, products that have been formulated to replace electrolytes and match the weight of the body fluids lost by the sweating process should be used. This is necessary to enable the body to quickly absorb replacement minerals. Do not use salt tablets.

Training supervisors to recognize and be able to correctly treat heat stress disorders is essential. Prospective workers' physical conditions should also be considered when determining their fitness for working in a hot environment. Older workers, obese workers, and those workers taking some types of medication are usually at a greater risk.

Work/Rest Regimen

There are many times when engineering and other controls are not sufficient, and administrative controls must be instituted for worker protection. One effective administrative control is the work/rest regiment that limits the time worked in the hot environment according to the type of work, environmental conditions, and clothing requirements. Work/rest periods are generally conservative because they are:

- Based on calculated approximations of heat stress
- Designed to protect most workers. As a result, many acclimatized workers can work longer than the allotted period.

Alternating work and rest periods with longer rest periods in a cool area (77 f. or less) can help workers avoid heat stress. Keep in mind that poor physical condition will also impair the ability to work in a hot environment. Older, overweight individuals or those in poor health may not be able to follow average work/rest regimens. Supervisors will permit employees to take additional rest breaks, as needed in potential heat stress conditions. The Cotton Safety Department should be contacted for assistance in instituting work/rest schedules for the site.

Heat-Related Illnesses and First Aid

Illness	Symptoms	First Aid*
Heat stroke	Confusion Fainting Seizures Excessive sweating or red, hot, dry skin Very high body temperature	Call 911 While waiting for help: Place worker in a shady, cool area Loosen clothing, remove outer clothing Fan air on the worker; cold packs in armpits Wet worker with cool water; apply ice packs, cool compresses, or ice if available Provide fluids (preferably water) as soon as possible Stay with the worker until help arrives

Heat exhaustion	Cool, moist skin Heavy sweating Headache Nausea or vomiting Dizziness Lightheadedness Weakness Thirst Irritability Fast heartbeat	Have worker sit or lie down in a cool, shady area Give workers plenty of water or other cool beverages to drink Cool worker with cold compresses/ice packs Take to clinic or emergency room for medical evaluation or treatment if signs or symptoms worsen or do not improve within 60 minutes. Do not return to work that day
Heat cramps	Muscle spasms Pain Usually in the abdomen, arms, or legs	Have workers rest in a shady, cool area The worker should drink water or other cool beverages Wait a few hours before allowing the worker to return to strenuous work Have worker seek medical attention if cramps do not go away
Heat rash	Clusters of red bumps on the skin Often appears on the neck, upper chest, folds of skin	Try to work in a cooler, less humid environment when possible Keep the affected area dry
* Remember, if you are not a medical professional, use this information as a guide only to help workers in need.		

Training

Supervisors must receive training in the prevention of heat-related illnesses before supervising employees working in the heat. Supervisors will be trained in this procedure to prevent heat illness and procedures to follow when an employee exhibits symptoms consistent with possible heat illness, including emergency response procedures.

Communication for employees will be in a form readily understandable by all affected employees.

Employee Training

For both employees and supervisory personnel, heat stress training is the key to avoiding problems. Employees must understand the reasons for using appropriate workplaces for the program to succeed. Heat stress-training program for employees will cover the following:

- Heat stress, its components, and effects
- Signs and symptoms of heat disorder
- First-aid procedures for and potential health effects of heat stress
- Pre-disposing factors to heat stress; drug use, (including therapeutic) and alcohol in a hot work environment
- Protective clothing, equipment, and their impact in hot environments
- Environmental and medical surveillance programs
- Importance of maintaining body fluids at normal levels
- Various engineering controls to reduce the impact of hot environments
- Administrative measures such as work/rest regimens in use to prevent heat stress
- Acclimatization: how it is achieved and its limitations
- The components of the heat stress prevention program

Technical Assistance

In some situations, we will accept work in extremely hot environments that cannot be controlled or mitigated. When faced with this type of situation the Cotton Safety Department will be notified for assistance as soon as possible to ensure all appropriate means to prevent Heat Stress is taken.

Definitions

Acclimatization: Temporary adaptation of the body to work in the heat that occurs gradually when a person is exposed to it. Acclimatization peaks in most people within four to fourteen days of regular work for at least two hours per day in the heat.

Heat Rash – Heat rash, also known as prickly heat, may occur in hot, humid environments where sweat is not easily removed from the surface of the skin by evaporation. This is common when using protective equipment, especially impermeable clothing. Heat rash can become uncomfortable when extensive or complicated in infection.

Heat Cramps – Heat cramps, which are painful muscle spasms, are caused when workers fail to replace the body's salt loss that occurs during excessive perspiration (especially with non-acclimatized workers).

Heat Exhaustion – Heat exhaustion results from excessive loss of salt and/or water through sweating. The worker with heat exhaustion still sweats but experiences extreme fatigue, weakness, giddiness, nausea, or headache. The skin is clammy and moist, the complexion pale or flushed and the body temperature normal or slightly higher.

Heat Illness: A serious medical condition resulting from the body's inability to cope with a heat load, and includes heat cramps, heat exhaustion, heat syncope, and heat stroke.

Heat Stroke – Heat stroke, the most serious health problem for workers in hot environments, is caused by the failure of the body's internal mechanism to regulate its core temperature. Sweating stops and the body can no longer rid itself of excess heat. Signs include mental confusion, delirium, loss of consciousness, convulsions or coma, a body temperature of 105 degrees or higher, and hot dry skin which may be red and flushed. Victims of heat stroke may die unless treated promptly and correctly.

Preventative Recovery Period: A period to recover from the heat to prevent heat illness.

Shade: Blockage of direct sunlight. Canopies, umbrellas, and other temporary structures or devices may be used to provide shade. One indicator is that blockage is enough when objects do not cast a shadow in blocked sunlight. Shad is not adequate when the heat in shade defeats the purpose of shade, which is to allow the body to cool. For example, a car sitting in the sun does not provide acceptable shade to a person inside it, unless the car is running with air conditioning.

Asbestos Awareness

Introduction

It is the policy of Cotton that employees will not disturb asbestos-containing materials (ACM). This policy sets forth requirements for identifying ACM and informing all personnel at Cotton worksites of ACM. Through proper identification and communication, Cotton intends to prevent its employees from having casual exposure to airborne asbestos fibers.

Regulations

OSHA 29 CFR 1910.1001(j), Asbestos

EPA 40 CFR Part 763.

Responsibilities

Supervisors will:

- Assure that worksites are properly evaluated for asbestos fibers complying with EPA and OSHA asbestos inspection regulations.
- Communicate to site employees and other contractors the location of asbestos- containing materials (ACM).
- Inform the host facility of any material that may have not been properly evaluated for asbestos fibers,
- Inform of the location of asbestos-containing materials (ACM),
- Demarcate or mark ACM at the worksite.

Employees will:

- Follow the guidance of this program

HSE Department will:

- Revise this program when deficiencies are observed, changes occur in OSHA or EPA standards, or more effective controls are discovered.
- Monitor and changes made when unsafe practices are observed or when new and improved technologies emerge.

Asbestos Health Hazards

If fibers of asbestos are inhaled, they can cause disabling respiratory diseases (asbestosis) and various types of cancers (lung cancer, mesothelioma, and cancer of the stomach and colon). Symptoms of mesothelioma include shortness of breath, pain in the walls of the chest, and/or abdominal pain. Inhalation or ingestion of asbestos fibers from contaminated clothing can also cause these diseases. Asbestos-related diseases often have a latency period where illness symptoms do not appear for 20 or more years after initial exposure.

Asbestos Containing Materials (ACM)

An asbestos-containing material (ACM) is a material containing more than 1% asbestos. Materials in buildings constructed on or before 1980 must be considered as presumed asbestos-containing materials (PACM) unless proven otherwise by either 1) material safety data sheets or 2) an EPA-accredited asbestos inspection. This inspection can only be performed by an EPA-accredited inspector adhering to the asbestos inspection standard, 40 Code of Federal Regulations (CFR) Part 763.

All materials at Cotton worksites must be evaluated for containing asbestos fibers. Materials include but are not limited to building materials, process materials, process equipment materials and parts, and vehicle parts. Materials that are either identified as ACM or PACM will be labeled, and hazard communication (asbestos awareness training) will be immediately performed with all personnel working at the site.

Labeling of ACM and PACM

All ACM and PACM must be immediately labeled with yellow warning signs or labels stating, "Asbestos—Cancer and Lung Hazard—Do Not Disturb."

Contractors' Compliance with Asbestos Awareness Policy

Before Cotton employees are permitted to work at suspected or potential asbestos sites, the Client must inform contractor supervisors of the location of ACM and PACM. If they are unable to identify through asbestos surveys or other documented means, then an asbestos survey will be done.

Asbestos Awareness Training

Before working at a site containing ACM or PACM or immediately after the determination of ACM or PACM, personnel will be informed of the location of all ACM and PACM and control methods for preventing exposure to airborne asbestos fibers.

The asbestos awareness training program will consist of the following items:

- Health hazards of airborne asbestos fibers,
- Location of all asbestos-containing materials (ACM) or presumed asbestos-containing materials (PACM),
- Labeling of ACM and PACM,
- Disturbance of ACM and PACM is strictly prohibited. A disturbance activity is a physical or mechanical action that may cause the creation of airborne asbestos fibers. These activities may consist of but are not limited to cutting, grinding, pounding, pressing, striking, or scrubbing on the ACM or PACM. Compressed air may also be considered a disturbance activity.
- Response to a disturbance event; immediately leave the area and report the event to the site supervisor.
- Hazard communication to visitors and contractors.

Documentation of Asbestos Awareness Training

Documentation will include topics of discussion including the location of ACM and PACM, names and signatures of trainees, names, and signatures of instructor/site supervisor, and dates. Documentation will be maintained for 30 years.

Refresher Training

Refresher training will be performed when:

- Additional ACM or PACM has been identified,
- Changes occur to ACM or PACM, e.g., deterioration, removal, etc., or
- Personnel observed performing disturbance activities on ACM.

Definitions

Asbestos defines a group of naturally occurring minerals composed of hydrated silicates crystalline in structure, occurring as parallel bundles of fibers. Classifications of asbestos include chrysotile, amosite, crocidolite, anthophyllite, tremolite, and actinolite.

Asbestos-containing material (ACM) is a material containing more than 1% asbestos.

Presumed asbestos-containing materials (PACM) are materials in buildings constructed on or before 1980.

Housekeeping Policy

Purpose

The purpose of this procedure is to eliminate as is reasonable and practicable unsafe conditions in the workplace due to poor housekeeping.

Regulations

OSHA CFR 1926.25
OSHA CFR 1910.22

Responsibilities

Supervisor will:

- Ensure that all personnel are made aware of this standard and that strict observance of good housekeeping practices is required at all times.

Employees will:

- Be responsible for following good housekeeping practices at all times.

HSE Department will:

- Audit this program and make any changes to it based on changes to regulations, audits and/or incident investigation, and corrective actions.

General Housekeeping

During construction, alteration, or repairs, scrap lumber with protruding nails, and all other debris will be kept cleared and contained from work areas, passageways, and stairs in and around building job areas, or other structures. Including, but not limited to household trash, construction debris, empty boxes, and any material that may pose a hazard.

Combustible scrap and debris will be removed at regular intervals or as needed during construction. All lumber should be free of nails and screws to prevent injuries. A safe means will be provided to facilitate such removal. When handled by hand piles will not exceed 16 feet in height and when handled by mobile equipment will not be stacked higher than 20 feet.

Containers will be provided for the collection and separation of waste, trash, oily and used rags, scrap metals, as well as insulation. Containers used for garbage and other oily, flammable, or hazardous wastes, such as caustics, acids, harmful dust, etc. will be equipped with covers. Garbage and other waste will be disposed of at frequent and regular intervals.

Good Housekeeping is an integral part of our work. All places of employment, including passageways, storerooms, work areas, maintenance areas, offices, and warehouses must be kept clean and orderly. Vegetation control will be exercised when necessary.

Stacking Material

- Height limitations will be considered.
- Weight limits will be considered
- The material will be stable and secure with straps and/or other appropriate means.
- Materials should never be stacked in a position that compromises the stack's load and stability.
- Materials will not be stacked in a location that could fall to lower levels.

Bagged Material

- Bags must be stacked neatly as possible, and in a crosstie pattern with the mouth (end to be opened) toward the inside of the stack.
- Precaution must be taken to prevent the possibility of bags being torn by any objects or equipment so that a shift in the load does not occur.
- Consideration will be given as to the height and width of the stack.
- Employees must not put items in bags that can penetrate the bag and cause bodily harm.

Ergonomics

In all stacking and storing of materials for purpose of housekeeping, body positioning will be taken into consideration and appropriate precautions taken to ensure safe lifting and/or ergonomics are in practice.

Ladder Safety

Purpose

This program contains requirements for the safe and proper use of fixed ladders, including portable wooden, reinforced plastic, and/or fiberglass. This program covers the minimum requirements for the care, inspection, and usage of portable ladders to ensure safety under normal conditions of usage. The common types of portable ladders utilized by Cotton are fiberglass. It is not the purpose of this program to specify all the details of construction for all the portable ladders. The purpose is to provide reasonable safety for life, limb, and property. The safety of all employees is the foremost objective of the program as set forth by Cotton

Regulations

OSHA Standards 29 CFR 1910.25, .26, and .27.

Responsibilities

Supervisors will:

- Ensure that all employees, and/or contractors have been trained in the use and inspection of ladders according to the manufacturer's guidelines.
- Ensure that all employees and contractors are aware that if an inspection discovers a defect, the ladder will not be used and taken out of service.

Employees will:

- Inspect ladders prior, during, and after each use to ensure the condition of the ladder and the safety of its occupants.
- Follow this program and report any damage or repairs that may be needed to their supervisor.

HSE Department will:

- Review and revise this program as needed. Audit this program and make any changes to it based on changes to regulations, audits and/or incident investigation, and corrective actions.

Requirements and Procedures

Care and Maintenance

Ladders will be maintained in good condition at all times, the joint between the steps and side rails will be tight, all hardware and fittings securely attached, and the movable parts will operate freely without binding or undue play.

Metal bearings of locks, wheels, pulleys, etc., will be frequently lubricated, and frayed or badly worn rope will be replaced. Rungs should be kept free of grease and oil. Ladders will be stored in a well-ventilated area in a manner to prevent sagging and warping.

If a ladder is involved in any of the following, immediate inspection is necessary:

- If a ladder tips over, inspect the ladder for dents or bends on the side rails, and rungs. Check hardware connections for loose or sheared rivets.
- If ladders are exposed to oil and grease, equipment should be cleaned of oil, grease, or slippery materials. This can easily be done with a solvent or steam cleaning.
- Ladders having defects are to be marked (as indicated above) and taken out of service until repaired by either the maintenance department or the manufacturer.

Use of ladder

An extension ladder must be secured to use it safely. Have someone hold the bottom of a ladder while it is being secured or unsecured to ensure that it does not move unexpectedly. A simple rule for setting up a ladder at the proper angle is to place the base one foot away for every four feet of height of the ladder. So, if your ladder is 20 feet tall it should be 5 feet away from the wall.

The following safety precautions will be done when using ladders:

- Ladders will not be used in a horizontal position as platforms, runways, or scaffolds.

- Ladders designed for one (1) person will not be used by more than one man at a time.
- Portable ladders feet or cleats will be placed on a stable and secure footing.
- Ladders will not be placed in front of doors opening toward the ladder unless the door is blocked open, locked, and/or guarded. Ladders will not be placed on boxes, barrels, or other unstable bases to obtain more height.

Climbing Ladders

When ascending or descending the ladder, the user will face the ladder and keep a firm hold on the ladder. It is preferable to grasp the rungs with an overhand grip as opposed to grabbing the rails. Grip strength is improved while grasping the rungs. Three points of contact with the ladder should be kept at all times. Recommend climbing pattern is hand, hand- foot, foot. The belt buckle area of the body should remain centered on the ladder and never extend beyond the side rails.

Electrical Hazards

Users are cautioned to take proper safety measures when ladders are used in areas having electrical circuits. This precaution should prevent any contact or possible contact with an energized, uninsulated circuit or conductor to avoid electrical shock. Metal ladders and wood ladders with side-rails metal reinforcement wires will not be used where they would encounter exposed energized electric wires. All ladders should be kept away from electric powerlines. It is imperative to also take precautions, by avoiding contact with electrical circuits with tools that are in use while on the ladder.

Access to Roof or Platform

When a single section or extension ladders are used to gain access to a roof or platform, the top of the ladder should extend at least 3' above the point of support at the eaves, gutters, platform, or roofline. The ladder will be secured, and the user will take care when ascending from the ladder to the roof/or platform or descending the roof/or platform to the ladder to avoid tipping the ladder over sideways or causing the ladder base to slide.

Set-up and Adjustment of Ladders

Extension Ladders - Adjustment of extension ladders will only be made by the user when standing at the base of the ladder so the user may see when the locks are properly engaged. The user will check that the rope is tracking correctly in the pulley. Adjustment of extension ladders from the top of the ladder or any level over the locking devices) is a dangerous practice and will not be tried. Adjustments will not be made while anyone is standing on the ladder. The user will ensure that both upper and lower ladder support points are contacting firm support surfaces. Combination ladders used in a no-self-supporting configuration require that the same procedures be seen.

Stepladders - the user will ensure that the stepladder is fully opened, with spreaders locked, and all feet in contact with a firm and level support surface. The length of a stepladder is measured by the length of the front rail. To be classified as a standard-length ladder, the measured length will be within plus or minus one-half (½) inch of the specified length.

- Stepladders will not exceed 20 feet in length.
- The bottoms of the four (4) rails are to be supplied with insulating non-slip material for the safety of the user.
- A metal spreader or locking device of sufficient size and strength to securely hold the front and back sections in the open position will be a component of each stepladder. The spreader will have all sharp points or edges covered or removed to protect the user.

Inspection

Ladders will be inspected before and after each use for obvious damage. A ladder inspection form can be obtained from your Supervisor and always follow the manufactures recommendation for inspection and use.

Item	Area of Concern
General	Rust, Corrosion, Loose, or Missing
Footpads	Worn, Missing, Damaged
Shoes	Worn, Broken, or Missing
Steps / Rungs	Loose, Cracked, Bent, or Missing
Rivets	Rust, Corrosion, Loose or Missing
Fasteners	Rust, Corrosion, Loose or Missing
Bracing	Front/Rear Loose, Bent, Broken or Missing
Rails	Cracked, Bent, Split, or Frayed
Rail Shield	Missing or Loose
Locks	Loose, Bent, or Missing
Hardware	Missing, Loose, or Broken
Labels	Missing or Not Readable
Spreader	Loose, Bent, or Broken
Hinges	Loose, Bent, or Missing
Platform	Loose, Bent, Broken, or Missing
Shoulder Bolt	Rust, Corrosion, or Loose
Rope / Pulley	Missing, Broken, or Frayed
Top	Cracked, Loose, or Missing

Training

Training will be provided to each employee using ladders and stairways, as necessary. The training will enable each employee to recognize hazards related to ladders and stairways and will train each employee in the procedures to be followed to minimize these hazards.

Each employee has been trained by a competent person in the following areas, as applicable:

- The nature of fall hazards in the work area.
- The proper construction, use, placement, and care in the handling of all stairways and ladders.
- The maximum intended load-carrying capacities of ladders.

Retraining will be provided for each employee as necessary so that the employee maintains the understanding and knowledge acquired through compliance with this program.

Definitions

The angle of inclination - The preferred pitch of portable non-self-supporting ladders.

Back leg (rear rail) - The support members of a self-supporting portable ladder-back section. The back legs are joined by rungs, bars, rear braces, or other bracing to form the back section.

Cage - An enclosure that is fastened to the side rails of the fixed ladder or to the structure to encircle the climbing space of the ladder for the safety of the person who must climb the ladder. Also referred to as a cage or basket guard.

Cleats - Cleats are ladder crosspieces of a rectangular cross-section placed on an edge on which a person may step in while ascending or descending.

Duty rating - The combination of factors, including but not limited to, ladder type and design features which imply service capability.

Extension ladder - A non-self-supporting portable ladder adjustable in length. It consists of two (2) or more sections traveling in guides or brackets so arranged as to permit length adjustment. Its size

is designated by the sum of the lengths of the sections measured along the side rails.

Fastenings - A device to attach a ladder to a structure, building, or equipment.

Fixed ladder - A ladder permanently attached to a structure, building, or equipment.

Grab bars - Individual handholds placed adjacent to or as an extension above ladders to provide access beyond the limits of the ladder.

Individual-rung ladder - A fixed ladder, each rung of which is individually attached to a structure, building, or equipment.

Inside clear width - The distance between the inside flanges of the side rails of a ladder.

Ladder - A ladder is an appliance usually consisting of two (2) side rails joined at regular intervals by crosspieces called steps, rungs, or cleats, on which a person may step while ascending or descending.

Ladder foot, shoe, or skid-resistant bearing surface - That component of ladder support that is in contact with the lower supporting surface.

Ladder safety device - Any device, other than a cage or well, designed to eliminate or reduce the possibility of accidental falls, and which may incorporate such features as life belts, friction brakes, and sliding attachments.

Marking - Any sign, label, stencil, or plate of a primary hazard or informational character or both, affixed, painted, burned, stamped, or embossed on the ladder surface.

Maximum extended length or maximum working length - The total length of the extension ladder when the middle or intermediate and top or fly sections are fully extended (maintaining the required overlap).

Permanent deformation (set) - That deformation remains in any part of a ladder after all loads have been removed.

Pitch - The included angle between the horizontal and the ladder, measured on the opposite side of the ladder from the climbing side.

Railings - Anyone or a combination of those railings constructed per OSHA 29 CFR 1910.23. A standard railing is a vertical barrier erected along exposed edges of floor openings, wall openings, ramps, platforms, and runways to prevent falls of persons.

Rail ladder - A fixed ladder consisting of side rails joined at regular intervals by rungs or cleats and fastened in full length or sections to a building, structure, or equipment.

Reinforced plastic ladder - A device whose side rails are constructed of reinforced plastics. The crosspieces, called steps, rungs, or cleats, may be constructed of metal, reinforced plastics, or other suitable materials. This term does not denote the absence of all metallic elements because even in ladders with side rails and crosspieces manufactured of reinforced plastics, the hardware and fasteners may be metallic.

Rungs - Rungs are ladder crosspieces of circular or oval cross-section on which a person may step while ascending or descending.

Side-step ladder - A ladder from which a person getting off at the top must step sideways from the ladder to reach the landing.

Stepladder - A stepladder is a self-supporting portable ladder, nonadjustable in length, having flat steps and a hinged back. Its size is designated by the overall length of the ladder measured along the front edge of the side rails.

Single ladder - A single ladder is a non-self-supporting portable ladder, nonadjustable in length, consisting of but one (1) section. Its size is designated by the overall length of the side rail.

Steps - Steps are the flat crosspieces of a ladder on which a person may step while ascending or descending.

Step stool (ladder type) - A self-supporting, foldable, portable ladder, nonadjustable in length, 32 inches or less in overall size, with flat steps and without a pail shelf, designed so that the ladder top cap, as well as all steps, can be climbed on. The side rails may continue above the top cap.

Through ladder - A ladder from which a person getting off at the top must step through the ladder to reach the landing.

Visual damage - Damage evident by visual inspection.

Visual inspection - Inspection by the eye without recourse to any optical devices except prescription

eyeglasses.

Working load - The maximum applied load, including the weight of the user, materials, and tools, which the ladder is to support for the intended use.

Short Service Employee

Purpose

The purpose of the Short Service Employee (SSE) Management program is to prevent work-related injuries and illnesses in new hires and temporary workers. The Supervisors and co-workers must be able to readily identify Short Service Employee participants. Cotton should assign experienced employees to oversee the daily activities of those assigned to the SSE program.

Responsibility

Supervisor will:

- Inform each newly hired employee, a transferred employee of Cotton's commitment to HSE, as applicable.
- Instruct them on HSE responsibilities while at the facility or while conducting work for Cotton.
- Monitor SSE performance and remove employees from SSE status when they have met the requirements to do so.

Employees will:

- Follow the guidance in this program

HSE Department will:

- Establish guidelines for short-service employee orientation.
- Conduct internal audits to verify that new employee orientations are conducted and confirm that all employees meet training requirements to ensure compliance with the HSEMS training requirements.
- Audit this program and make any changes to it based on changes to regulations, audits and/or incident investigation, and corrective actions.

Procedures and Requirements

General

A Short Service Employee may not work alone. There shall be one Cotton Supervisor for every 10 SSE Employees.

Supervisors will assure that all new, transferred, and temporary employees have been through Cotton Safety Orientation and have complete knowledge of the expectations for their job function.

Mentoring Oversight and Monitoring

A Short Service Employee is mentored by an experienced/knowledgeable employee. A mentoring system should be implemented to provide guidance to Short Service Employees and assist with their development. A mentor may only be assigned to one crew that includes Short Service Employees, and they must remain on-site with them.

Supervisors will identify all employees and temporary personnel with less than 180 days of service, or those employees they desire to return to a mentoring status for improvement in job and/or safety performance. Any Short Service Employee experiencing an OSHA Recordable injury during the initial 180 days will repeat the mentoring program or will be dismissed for poor performance.

Managers and the Safety Department will randomly audit for process compliance. This will involve interviewing employees in the Short Service Employee program (documentation is not required).

Short Service Employees are monitored for compliance with HSE policies and procedures. Short Service Employees will be monitored for compliance with health, safety, and environmental policies and procedures. Once the Short Service Employee has demonstrated competency and compliance with HSE policies and procedures, the hi-visibility identifier may be removed.

Short Service Employee Identification

Short Service Employees must wear uniquely colored identifiers. Short Service Employees will be

visibly identified through the use of a different colored identification. The method used to identify SSEs should be communicated to the client.

Notification and Communication Processes

Check with the host facility to see if they must be notified when a Short Service Employee will be working at their site. Mentors will converse daily with those persons assigned to them, preferably at the start of the day. This will be in addition to other tailgate or daily safety meetings held in the work area.

Definitions

Short Service Employee – An employee is generally considered a "Short Service Employee" if he/she has less than 6 months of experience with his/her present employer or in their present role.

Mentor – An experienced employee, who has been assigned to help and work with a new Short Service Employee by his/her supervisor.

Hot Work Procedures

Purpose

The purpose of this permit procedure is to protect personnel and equipment from fires and/or explosions that could result from hot work performed in a hazardous area. This section outlines minimum precautions for safety when performing hot work in any location not designated as a routine hot work area. In all such areas, a “Hot Work Permit” is required for all hot work

Regulations

Under the General Duty Clause, Section 5(a)(1) of the Occupational Safety and Health Act of 1970, employers are required to provide their employees with a place of employment that "is free from recognized hazards that are causing or likely to cause death or serious harm to employees."

Responsibilities

Supervisors will:

- Establish safe areas for welding and cutting operations.
- Provide training for all employees whose task includes heat, spark, or flame-producing operations such as welding, brazing, or grinding.
- Develop and monitor effective hot work procedures.
- Provide safe equipment for hot work.
- Provide proper and effective PPE for all hot work.
- Monitor all hot work operations.
- Ensure all hot work equipment and PPE are in safe working order.
- Allow only trained and authorized employees to conduct hot work and conduct inspections of the hot work area before operations begin.
- Ensure permits are used for all hot work outside authorized areas.

Employees will:

- Follow all hot work procedures.
- Properly use appropriate hot work PPE.
- Inspect all hot work equipment before use.
- Report any equipment problems or unsafe conditions.

HSE Department will:

- Audit this program and make any changes to it based on changes to regulations, audits and/or incident investigation, and corrective actions.

Procedure and Requirements

A hot work permit is completed before performing hot work. Before cutting or welding is permitted, the area will be inspected by the individual responsible for authorizing cutting and welding operations. The Supervisor will designate precautions to be followed in granting authorization to proceed, preferably in the form of a written permit.

Combustible materials are moved out of the area where hot work is performed. If the object to be welded or cut cannot readily be moved, all movable fire hazards in the vicinity will be taken to a safe place.

Where practicable all combustibles will be relocated at least 35 feet from the work site. Guards/shields are used if hot work activities cannot be separated from combustible materials. If the object to be welded or cut cannot be moved and if all the fire hazards cannot be removed, then guards will be used to confine the heat, sparks, and slag and to protect the immovable fire hazards.

Ducts, conveyor systems, and augers that might carry sparks to distant combustibles will be protected or shut down.

Where cutting or welding is done near walls, partitions, ceilings, or openings in the floor (grating, manholes, etc.), fire-resistant shields or guards will be provided to prevent ignition.

If welding is to be done on a metal wall, partition, ceiling, or solid decking/flooring, precautions will be taken to prevent the ignition of combustibles on the other side, due to conduction or radiation of heat. Where combustibles cannot be relocated on the opposite side of the work, a fire watch person will be provided on the opposite side of the work.

Welding will not be attempted on a metal partition, wall, ceiling, or decking/flooring constructed of combustible sandwich panels.

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

Cutting or welding will not be permitted in the following situations:

- In areas not authorized by management.
- In sprinkled buildings, such protection is impaired.
- In the presence of potentially explosive atmospheres, e.g., flammables.
- In areas near the storage of large quantities of exposed, readily ignitable materials.
- In areas where there is dust accumulation of greater than 1/16 inch within 35 feet of the area where welding/hot work will be conducted.
- All dust accumulation will be cleaned up before welding or hot work is permitted.

Whenever welding or cutting is performed in locations where a fire might develop a fire watch will be provided.

- A fire extinguisher must be readily available while hot work is performed.
- Fire watchers will have fire extinguishers readily available.
- A fire watch will be maintained for at least 30 minutes after hot work activities are completed. A fire watch will be maintained at least half an hour after the welding or cutting operation was completed.
- A hot-work permit will be issued on all welding or cutting outside of the designated welding area.

Fire Prevention Measures

A designated welding area will be established to meet the following requirements:

- Floors swept and cleaned of combustibles within 35 feet of the work area.
- Flammable and combustible liquids and the material will be kept 35 feet from the work area.
- Adequate ventilation provides 20 air changes per hour.
- At least one 10-pound dry chemical fire extinguisher will be within access of 35 feet of the work area.
- Protective dividers such as welding curtains or noncombustible walls will be provided to contain sparks and slag in the combustible-free area.

Requirements for welding conducted outside the designated welding area:

- Portable welding curtains or shields must be used to protect other workers in the welding area.
- A hot-work permit must be completed and complied with before initiating welding operations.
- Respiratory protection is mandatory unless an adequate monitored airflow away from the welder and others present can be established and maintained.
- Plastic materials must be covered with welding tarps during welding procedures.
- Fire Watch must be provided for all hot-work operations.

After welding operations are completed, the welder will mark the hot metal or provide some other means of warning other workers.

Confined Space

Ventilation is a prerequisite to performing hot work in confined spaces. When welding or cutting is being performed in any confined spaces, the gas cylinders, and welding machines will be left on the outside. Before operations are started, heavy portable equipment mounted on wheels will be securely blocked to prevent accidental movement.

When a welder must enter a confined space through a manhole or other small opening, means will be provided for quickly removing him in case of an emergency. When safety belts and lifelines are used for this purpose, they will be so attached to the welder's body that they cannot be jammed in a small

exit opening. An attendant with a preplanned rescue procedure will be stationed outside to observe the welder at all times and be capable of putting rescue operations into effect.

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

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

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

A fixed enclosure will have a top and not less than two sides that surround the welding or cutting operations, and a rate of airflow sufficient to maintain a velocity away from the welder of not less than 100 linear feet (30 m) per minute.

All welding and cutting operations carried on in confined spaces will be adequately ventilated to prevent the accumulation of toxic materials or possible oxygen deficiency. This applies not only to the welder but also to helpers and other personnel in the immediate vicinity. All air withdrawn will be replaced with air that is clean.

In circumstances for which it is impossible to provide such ventilation, airline respirators or hose masks approved for this purpose by the National Institute for Occupational Safety and Health (NIOSH) will be provided. In areas immediately hazardous to life, a full-facepiece, positive pressure, self-contained breathing apparatus, or a combination full-facepiece, positive pressure supplied-air respirator with an auxiliary, self-contained air supply approved by NIOSH must be used.

Where welding operations are carried on in confined spaces and where welders and helpers are provided with hose masks, hose masks with blowers, or self-contained breathing equipment, a worker will be stationed on the outside of such confined spaces to ensure the safety of those working within.

Fumes, Gases, and Dust

Ventilation and/or respiratory equipment is used when hazardous fumes, gases, or dust may be present. Local exhaust or general ventilating systems will be provided and arranged to keep the number of toxic fumes, gases, or dust below the maximum allowable concentration.

Any welding, cutting, or burning of lead base metals, zinc, cadmium, mercury, fluorides, beryllium or exotic metals or paints not listed here that could produce dangerous fumes will have proper ventilation or respiratory protection. This includes inert-gas metal-arc welding or oxygen cutting of stainless steel.

All welding and cutting operations will be adequately ventilated to prevent the accumulation of toxic materials. This applies not only to the welder but also to helpers and other personnel in the immediate vicinity.

PPE

Welding hoods and hand shields will be made of a material, which is an insulator for heat and electricity. Welding hoods, shields, and goggles will not be readily flammable and will be capable of withstanding sterilization. They will be arranged to protect the face, neck, and ears from direct radiant energy from the arc. Welding hoods will be provided with filter plates and cover plates designed for easy removal.

All glass for lenses will be tempered, and substantially free from scratches, air bubbles, waves, and other flaws. Except when a lens is ground to provide proper optical vision correction, the front and rear surfaces of lenses and windows will be smooth and parallel. Lenses will bear some permanent distinctive marking that may readily identify the source and shade.

In gas welding or oxygen cutting where the torch produces a high yellow light, it is desirable to use a

filter or lens that absorbs the yellow or sodium line in the visible light of the operation. All filter lenses and plates will meet the test for transmission of radiant energy prescribed in ANSI Z87.1-1968 - American National Standard Practice for Occupational and Educational Eye and Face Protection. Where the work permits the welder to be enclosed in an individual booth painted with a finish of low reflectivities such as zinc oxide (an important factor for absorbing ultraviolet radiation) and lamp black or will be enclosed with noncombustible screens similarly painted. Booths and screens will permit the circulation of air at floor level. Workers or other persons adjacent to the welding areas will be protected from the rays by noncombustible or flameproof screens or shields or will be required to wear appropriate goggles.

Adequate hand protection and clothing must be used to protect the body from welding hazards.

Cleaning Compounds

In the use of cleaning materials, because of their possible toxicity or flammability, appropriate precautions such as manufacturer instructions will be followed. Degreasing and other cleaning operations involving chlorinated hydrocarbons will be so located that no vapors from these operations will reach or be drawn into the atmosphere surrounding any welding operation. In addition, trichloroethylene and perchloroethylene will be kept out of atmospheres penetrated by the ultraviolet radiation of gas-shielded welding operations.

Oxygen cutting, using a chemical flux, iron powder, or gas shielded arc cutting for stainless steel will be performed using mechanical ventilation adequate to remove the fumes generated.

Cylinders

Compressed gas cylinders will be DOT-approved and legibly marked near the shoulder of the cylinder to identify the gas content with either the chemical or trade name of the gas. All compressed gas cylinder connections must comply with ANSI B57. 1-1965 Standards. Compressed gas cylinders will be secured in an upright position at all times except, if necessary, for short periods while cylinders are being hoisted or carried.

All cylinders will be kept away from sources of heat and from radiators and piping systems that may be used for grounding purposes. Cylinders and cylinder valves including couplings and regulators will be kept free from oily or greasy substances and must not be handled with gloves or rags in the same condition.

Stored oxygen cylinders will be kept at least 20 feet from the fuel gas cylinders or combustible materials, especially oil or grease, or separated by a non-combustible barrier at least 5 feet high with a fire rating of at least one-half hour. All empty cylinders will have closed valves. Valve protection caps will always be in place and hand-tight except when cylinders are in use or connected for use. Cylinders will not be kept in unventilated enclosures such as lockers and cupboards.

Fuel gas cylinders stored inside buildings will be limited to a total capacity of 2000 cubic feet (300 pounds) of liquefied petroleum gas, except for those in actual use or attached ready for use. All acetylene cylinders will be stored valve-end up.

Assigned storage spaces will be located where cylinders cannot be knocked over or damaged by falling objects or subject to tampering by unauthorized persons.

- Backflow protection will be provided by an approved device that will prevent oxygen from flowing into the fuel-gas system or fuel from flowing into the oxygen system.
- An approved device that will prevent the flame from passing into the fuel-gas system will provide flashback protection.
- An approved pressure-relief device set at the appropriate pressure will provide backpressure protection.

Special care must be taken when transporting gas cylinders:

- Cylinders must be secured with a valve cap installed.
- Cylinders will not be lifted by the valve protection caps, the regulators must be removed, and cylinders will not be dropped or permitted to strike each other.
- Removed regulators must be carried in the cab of the vehicle.
- Cylinders will not be tampered with, nor should any attempt be made to repair them.
- They will be handled carefully - rough handling, knocks, or falls are liable to damage the

cylinder, valve, or safety device and cause leakage.

Safety devices will not be tampered with.

Arc Welding and Cutting

All personnel operating, installing, and maintaining welding equipment will be qualified or trained to operate and maintain such equipment. All workmen assigned to operate or maintain equipment will be familiar with and electrical welding equipment will be chosen for safe operation and comply with applicable Requirements for Electric Arc Welding Standards to include: 29 CFR 1910.254, 29 CFR 1910.252 (a)(b) (c) and if gas shielded arc welding is done, they must be familiar with the American Welding Society Standard A6-1-1966.

- Arc welding equipment must be designed to meet conditions such as exposure to corrosive fumes, excessive humidity, excessive oil vapor, flammable gasses, abnormal vibration or shock, excessive dust, and seacoast or shipboard conditions.
- It will be operated at the recommended voltage following the manufacturer's recommendations.
- All leads will be periodically inspected and replaced if insulation is broken, or splices are unprotected.
- Leads will not be repaired with electrical tape.

All ground connections will be checked to determine that they are mechanically strong and electrically adequate for the required current.

A disconnecting switch or controller will be provided at or near each welding machine along with overcurrent protection. All direct current machines will be connected with the same polarity and all alternating current machines connected to the same phase of the supply circuit and with the same polarity.

- To prevent electrical contact with personnel, all electrode holders will be placed where they do not make contact with persons, conducting objects, or the fuel of compressed gas tanks.
- All cables with splices within 10 feet of the holder will not be used.

If the object to be welded or cut cannot readily be moved, all moveable fire hazards should be removed.

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

Oxygen Fuel Gas Welding and Cutting

Only approved apparatuses such as torches, regulators, or pressure-reducing valves, setting generators, and manifolds will be used:

- Mixtures of fuel gases and air or oxygen may be explosive and must be guarded against.
- All hoses and hose connections will comply with the Compressed Gas Association and Rubber Manufacturers' Associations' applicable standards.
- Workers in charge of the oxygen or fuel-gas supply equipment, including generators, will be instructed, and judged competent by Cotton before being left in charge.

If the object to be welded or cut cannot readily be moved, all moveable fire hazards should be removed.

When a Fire Watch is Required

Fire watchers will be required whenever welding or cutting is performed in the following situations:

- The appreciable combustible material is closer than 35 feet (10.7 m) to the point of operation.
- Appreciable combustibles are more than 35 feet (10.7 m) away but are easily ignited by sparks.
- Wall or floor openings within a 35-foot (10.7 m) radius expose combustible material in adjacent areas including concealed spaces in walls or floors.
- Combustible materials are adjacent to the opposite side of metal partitions, walls, ceilings, or roofs and are likely to be ignited by conduction or radiation.

A fire extinguisher must be readily available while hot work is performed. Fire watchers will have fire extinguishers readily available. A fire watch will be maintained for at least 30 minutes after hot work activities are completed. A fire watch will be maintained at least half an hour after the welding or cutting operation was completed.

Fire Watch Responsibilities

- Be familiar with the “Hot Work Permit” and the requirements stated on the permit
- Maintain constant visual contact with personnel performing the welding or burning operation.
- Be observant and alert to potential hazards.
- Never leave the post for any reason without being relieved by another properly trained person.
- In the event of an emergency, signal or alarm the personnel in the immediate area.
- Have a fully charged fire extinguisher, and a horn or whistle in the immediate area
- Extinguish fires within the capabilities of a portable fire extinguisher.
- Sounding an alarm or call for proper emergency personnel.
- Inform employees if spark containment is compromised.
- Remain at his/her post for at least a half hour after completion of welding or cutting operations to detect and extinguish smoldering fires.
- Inform the Cotton Site Supervisor of any incidents or emergencies.

First Aid Equipment

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

Fire Extinguishers

- A fully charged fire extinguisher of a type and size designated as suitable will be provided where hot work is to be done.
- All fire extinguishers will be operated by trained employees who have had initial and yearly updated training in the use of portable fire extinguishers of the type used for each hot work task.
- Fire extinguishers will have been inspected by a third-party inspections service and the tag must comply within one year of the inspection date. All records of these inspections will be stored at the third party's business location with the yearly tag evidence of inspection will be left on the fire extinguisher.
- Fire extinguishers must be checked for the monthly inspection tag and that it complies, with proper pressure, seal, and pin.

Training

Employees who are associated with Hot Work are provided training.

Cutters, welders, and their supervisors must be suitably trained in the safe operation of Hot Work equipment and safe use of the process.

Fire Watch Training

Assigned fire watchers must be trained in the use of fire extinguishing equipment and familiar with the facilities for sounding an alarm in the event of a fire.

The primary duty and responsibility are to stay abreast of all conditions in the area of a welding or burning operation and to warn personnel in the area of conditions that could affect their safety.

- Employees will complete initial training in the use and limitations of portable fire extinguishers.
- They will be trained in firefighting techniques and methods of extinguishing small fires.
- Must know when and how to communicate an emergency to the proper personnel
- How to shut off all ignition sources in the event of an emergency.
- They will renew this training on an annual basis.

Definitions

Welding/Hot Work - any activity which results in sparks, fire, molten slag, or hot material which has the potential to cause fires or explosions.

Examples of Hot Work - Cutting, Brazing, Soldering, Thawing Pipes, Grinding, using an electric tool in a hazardous area, and Welding.

Special Hazard Occupancies - any area containing Flammable Liquids, Dust Accumulation, Gases, Plastics, Rubber, and Paper Products.

Hazards - include but are not limited to the following: fires and explosions, skin burns, welding "blindness", and respiratory hazards from fumes and smoke.

Benzene Awareness Program

Introduction

This program establishes the safety and health policy of Cotton for protecting its employees from potential exposure to Benzene. It aims to minimize employees' exposure to Benzene through engineering controls, monitoring, training, PPE, and respiratory protection. Provisions are made for employees to participate in a medical surveillance program when employee exposure levels exceed the Benzene action level.

Regulations

29 CFR 1910.1028, Benzene.

Responsibilities and Procedures

Supervisor will:

- Ensure personnel are aware of work that has the potential of exposure to benzene.
- Ensure individuals responsible for monitoring areas of exposure are properly trained.
- Ensure personnel receives documented medical surveillance exams.
- Ensure that emergency exams are performed if an overexposure or suspected overexposure occurs.
- Ensure employees have the appropriate personal protective equipment (PPE) and are properly trained in its use and care.
- Ensure employees comply with the benzene control program.
- Ensure fire extinguishers will always be readily available where benzene is used/stored. Benzene liquid is highly flammable, and vapors may form explosive mixtures in the air. Fire extinguishers must be readily available in areas where benzene is used or stored.

Employees will:

- Comply with the benzene control program.
- Know where benzene is used at client facilities and follow any additional plant safety rules required by the client.
- Comply with the medical surveillance program and attend examinations as required.
- Maintain respiratory protection equipment in good working order and notify the supervisor or Safety Representative of any problems before starting work
- Review safety data sheets or consult with the supervisor to identify any container with benzene-containing material.
- Sources of ignition must be kept away from benzene. Benzene liquid is highly flammable. It should be stored in tightly closed containers in a cool, well-ventilated area. Benzene vapor may form explosive mixtures in the air. All sources of ignition must be controlled. Smoking is prohibited in areas where benzene is used or stored.
- Report exposures resulting in any symptoms immediately.

HSE Department will:

- Develop and implement project/task-specific benzene control procedures before the start of activities that may include exposure to benzene.
- Coordinate monitoring activities, ensuring monitoring equipment is in proper working order and, as necessary, modifying the benzene control procedures to reflect exposure monitoring data.
- Maintain the benzene control program, notify management of any regulatory changes, and ensure compliance with regulatory, client, and corporate requirements.
- Audit this program and make any changes to it based on changes to regulations, audits and/or incident investigation, and corrective actions.
- Coordinate the medical surveillance program, including maintenance of medical records and administration of exams.

Procedure

Permissible Exposure Limits

The time-weighted average limit (TWA) for benzene is:

- 8-hour TWA 1 ppm
- 12-hour TWA 0.67 ppm

The short-term exposure limit (STEL) for benzene is 5 ppm.

Regulated Areas

Cotton will establish regulated areas wherever airborne concentration of benzene exceeds or can reasonably be expected to exceed the PEL or STEL. They will control access to regulated areas and limit access to authorized personnel.

Safety precautions such as the prohibition of smoking in areas where benzene is used/stored will be taken. Smoking is prohibited in areas where benzene is used or stored. The following signage will be posted in all regulated areas when the potential exists for benzene vapors to be more than the PEL:

DANGER – BENZENE REGULATED AREA CANCER-CAUSING AGENT FLAMMABLE – NO SMOKING AUTHORIZED PERSONNEL ONLY RESPIRATOR REQUIRED

Methods of Compliance

The benzene control program will be written and implemented to comply with OSHA regulation 29 CFR 1910.1028 (Benzene). Cotton will establish and implement a written program to reduce employee exposure to or below the PEL primarily utilizing engineering and work practice controls to ensure compliance with the benzene control program and federal and state requirements.

Exposure Monitoring

Exposure monitoring will be performed for the 8-hour and 12-hour TWAs or the 15-minute STEL exposure when:

- Regulated areas are established
- An emergency occurs that could require a regulated area
- A change in the production, process, control equipment, personnel, or work practices may result in new or additional exposure to benzene
- Cleanup of a spill, leak repair, or rupture occurs
- If the monitoring required reveals employee exposure at or above the action level but at or below the TWA, Cotton will repeat the monitoring for each employee at least every year.
- If the initial monitoring reveals employee exposure to be below the action level COMPANY may discontinue the monitoring.
- If the monitoring reveals that employee exposures, as indicated by at least two consecutive measurements taken at least 7 days apart, are below the action level Cotton may discontinue monitoring.
- Direct reading detection instruments (Drager CMS is recommended) will be used where benzene vapors may be present in work areas not previously monitored.
- Personal monitoring will be performed by use of vapor monitoring badges following manufacturer requirements. All samples will be analyzed at an AIHA (American Industrial Hygiene Association) certified laboratory.

Medical Surveillance

Baseline and annual medical exams will be provided to employees that may work or are anticipated to participate in operations more than 10 times per year or may work in areas where benzene exposures may exceed the PEL over 30 days per year. Cotton will make available a medical surveillance program for employees who are or may be exposed to benzene at or above the action level 30 or more days per year; for employees who are or may be exposed to benzene at or above the PELs 10 or more days per year; for employees who have been exposed to more than 10 ppm of benzene for 30 or more days in a year before the effective date of the standard when employed by their current employer.

Notification of monitoring results will be provided to employees in writing within 15 working days of receipt of results.

What PPE Used to Protect Employees from Benzene

- Respirators are required for those operations in which engineering controls or work practice controls are not feasible to reduce exposure to the permissible level.
- Protective Clothing. You must wear appropriate protective clothing (such as boots, gloves, sleeves, aprons, etc.) over any parts of your body that could be exposed to liquid benzene.
- You must wear splash-proof safety goggles if benzene may get into your eyes. In addition, you must wear a face shield if your face could be splashed with benzene liquid.
- PPE will be selected based on its ability to prevent absorption, inhalation, and ingestion.
- PPE will reflect the needs of the employee based on work conditions, amount and duration of exposure, and other known environmental factors but will contain as a minimum; boots, proper eye protection, gloves, sleeves, aprons, and others as determined.
- PPE will be provided and worn when appropriate to prevent eye contact and limit dermal exposure to liquid benzene. PPE must meet the requirements of 29 CFR 1910.133 and provide at no cost to the employees.
- PPE will be provided at no cost to the employees.

Respiratory Protection

A respiratory protection program will be established per 29 CFR 1910.134. Respiratory protection is required:

- During the period necessary to implement engineering controls or work practices.
- When engineering and work practices are not feasible.
- In emergencies.

Approved respirators will be selected according to airborne concentrations of benzene or condition of use.

Airborne Concentration of Benzene	NIOSH-Approved Respirator Type
Less than or equal to 5 ppm	Half-mask air-purifying respirator fitted with organic vapor cartridges. Cartridge change-out schedules must be calculated.
Less than or equal to 50 ppm	Full-face piece mask air-purifying respirator fitted with organic vapor cartridges. Cartridge change-out schedules must be calculated.
Greater than 50 ppm or unknown concentration.	Supplied-air respirator with full facepiece mask in positive pressure mode.
Firefighting	Cotton personnel must evacuate the area immediately. Employees are not trained or equipped to fight fires. Firefighting will be conducted only by professional firefighters.

Recordkeeping

- Medical surveillance records will be maintained for 30 years after termination of employment
- Exposure monitoring records will be maintained for 30 years after the completion of the project
- Exposure and medical monitoring records will be made available to affected employees or their representatives and OSHA upon request

Communication of Benzene Hazards

- Signs and labels will be posted at entrances of regulated areas
- The benzene control program will be updated by the HSE Department.
- Project site-specific contingency and emergency procedures will be updated by the Safety

Department and made available to project staff before beginning work at the specific site.

Physical and Toxicological Properties of Benzene

Benzene is an aromatic hydrocarbon that is clear, colorless to light yellow, volatile, flammable liquid with an aromatic (pleasant, sweet) odor that is not water-soluble. It is a component of products derived from coal and petroleum and is found in gasoline and other fuels. Benzene is also a major raw material used extensively in the manufacture of plastics, detergents, pesticides, pharmaceuticals, and other chemicals. Benzene can be found in refineries and various locations: valves, pipes, tank vessels, and drums to name a few. The vast use of Benzene has ranked the chemical in the top 20 highest volume chemicals produced in the United States for the past several years. Benzene is also found in emissions from burning coal and oil, motor vehicle emissions, evaporation of gasoline or other organic chemicals, and tobacco smoke.

Benzene is a known human carcinogen based on sufficient evidence of carcinogenicity in humans. Research has shown Benzene to be a carcinogen. Epidemiological studies have shown statistically significant associations between leukemia (cancer of the bone marrow affecting blood cell production) and long-term (chronic) exposure to Benzene. Short-term (acute) over-exposure to Benzene can cause drowsiness, dizziness, giddiness, headaches, nauseated, and/or intoxication. Irritations may develop in the eyes, nose, and respiratory tract. Severe exposures may lead to convulsions and unconsciousness.

Benzene exposure routes are inhalation and skin absorption (dermal). The current OSHA permissible exposure level (PEL) is 1 part per million (ppm) in the air for an 8-hour time-weighted average (TWA). OSHA also enforces a short-term exposure limit (STEL) of 5 ppm for 15 minutes of exposure. Protection must also be provided against dermal exposure to liquid Benzene and Benzene-containing materials.

Engineering Controls and Safe-work Practices

It is the intent of this policy to minimize employee exposure to Benzene using feasible engineering controls and effective work practices. Therefore, when Benzene-containing materials are present, operations will be assessed for implementing the following controls listed in the order of preference:

1. Close containment of Benzene materials to minimize evaporation, splashing, and spilling of Benzene.
2. Where full containment is not possible, hoods and canopies are equipped with an exhaust ventilation system to remove Benzene vapors from the breathing zones of operators.
3. Where feasible engineering controls are not possible, respirators and personal protective equipment such as gloves, goggles/face shields, splash suites, fire extinguishers, etc. will be used.

Employee Training and Information.

For employees having expected Benzene exposures exceeding the Benzene action level, Cotton will train its employees before their initial assignment or within 60 days of determining action level exposure. The training will be repeated at least annually or whenever deficiencies are observed in adhering to this policy.

Operator training will include the following topics

- Location of Benzene-containing materials,
- Physical properties and health hazards of Benzene,
- Expected Benzene exposure levels per job task or workstation,
- Engineering and work practice controls in place for minimizing exposure, e.g., containment and/or exhaust ventilation,
- PPE and respiratory protection are required per job task,

Definitions

Action Level – means an airborne concentration of benzene of 0.5 ppm calculated as an 8-hour time-weighted average.

What Benzene Looks and Smells Like – Benzene is a clear, colorless liquid with a pleasant, sweet

odor. The odor of benzene does not provide adequate warning of its hazard.

Employee Exposure – exposure to airborne benzene that would occur if the employee were not using respiratory protective equipment.

Health Effects of Benzene Exposure – Benzene can affect your health if you inhale it, or if it comes in contact with your skin or eyes. Benzene is also harmful if you happen to swallow it. If you have short-term (acute) exposure to high concentrations of benzene, well above the levels where its odor is first recognizable, you may feel breathless, irritable, euphoric, or giddy; you may experience irritation in the eyes, nose, and respiratory tract. You may develop a headache, feel dizzy, nauseated, or intoxicated. Severe exposures may lead to convulsions and loss of consciousness. Long-term (chronic) exposure. Repeated or prolonged exposure to benzene, even at relatively low concentrations, may result in various blood disorders, ranging from anemia to leukemia, an irreversible, fatal disease. Many blood disorders associated with benzene exposure may occur without symptoms.

Ergonomics Program

Purpose

To provide information to the employees through training and education about the different types of injuries, symptoms, and how to reduce the risk.

Regulations

Under the General Duty Clause, Section 5(a)(1) of the Occupational Safety and Health Act of 1970, employers are required to provide their employees with a place of employment that "is free from recognized hazards that are causing or likely to cause death or serious harm to employees."

Responsibilities

Supervisor will:

- Assure that all of their employees who are assigned to perform work in the field are informed about this program.
- Ensure compliance with this program in the field.

Employees will:

- Report all incidents immediately.
- Report personal health conditions to supervision.
- Follow the Ergonomics program rules.

HSE Department will:

- Anticipation, identification, application, coordination, and execution of this procedure.
- Conduct inspections to identify deficiencies in the Ergonomics program.
- Provide appropriate supplies on all sites.
- Audit this program and make any changes to it based on changes to regulations, audits and/or incident investigation, and corrective actions.

Procedures and Requirements

Analyzing the Work Activities

Analyzing the workplace involves looking at each work activity and the workstation in which it takes place to determine if the work activity, workstation, or both can be modified to better fit the human body. The main objective of a workplace analysis is to identify:

- Working conditions that may produce Cumulative Trauma Disorders (CTDs).
- Operations that create ergonomic hazards.
- Areas where such hazards may develop.

When analyzing the workstation or tasks, several factors should be considered including the following:

- The posture of the person performing the task.
- The force required by the employee to complete the action(s).
- Repetition of work activity.
- Vibration in a work area.
- Various upper extremity factors.
- Work positions that put employees at risk of developing CTDs.
- The risk factors involved in performing the task.
- Travel distances.

When analyzing the Workplace and Workstations, locations should utilize the requirements of a Job Hazard Analysis (JHA), to identify existing and potential ergonomic hazards and should develop measures to eliminate or control the risks. When identifying the development of CTDs and the patterns of trauma or strains the following factors should be considered:

- Factors for Identifying Development of CTDs
- Look at injury/illness records

- Question employees about ergonomic problems
- Identify jobs that appear to have repetitive motion problems

Hazard Identification

- Routine safety audits, inspections, and observations.
- Review of Supervisors Incident Reports.
- Employee reports of hazards or concerns.
- Ergonomic Assessments.

Job Hazard Analysis

The purpose of Job Hazard Analysis is to identify WMSD hazard elements to facilitate the evaluation of effective control measures. When WMSD hazards are identified, a full JHA will be conducted, and control measures implemented to eliminate or control the hazards to the extent feasible.

Control Measure Process

Where solutions are obvious and the hazards may be eliminated quickly, implementation of controls is permitted without following all of the steps of the Control Measure Process. Interim control measures may be implemented, if practical until permanent controls are in place. The Control Measure process involves:

- Identification, evaluation, implementation, and follow-up of feasible control measures (interim and permanent) to control WMSD hazards. This includes prioritizing the control of WMSD hazards, where necessary.
- Tracking progress in controlling the WMSD hazards, particularly if prioritizing is necessary.
- Communication of results of the job hazard analysis to other areas of the workplace or company whose assistance may be needed to successfully control the WMSD hazard.
- Identification of hazards when equipment is changed, redesigned, or purchased and when change occurs in processes or facilities.

Control Methods

The following steps in the hierarchy of controls are to be considered in the following sequence:

1. Elimination of the hazard.
2. Substitution
3. Engineering Controls
4. Work Practice Controls
5. Administrative Controls
6. PPE

Engineering Controls are generally the best technique and preferred over other methods. Common engineering controls include:

- Designing workstations to accommodate the person(s) who work on a job, not the "average" worker
- Designing workstations to be easily adjustable for specific tasks
- Designing workstations to be comfortable for the workers who use them
- Designing workstations to be large enough to allow for the full range of required movements

Workstation design should address the content of tasks performed by the workers and analyze the production system to design or modify tasks to eliminate stressors. Workstations should be designed to reduce postures that are static extreme, or awkward, and have repetitive motion or excessive force.

Administrative controls involve scheduling, work activity duration, etc. to reduce the total number of repetitions per employee. Common controls include:

- Decreasing production rates
- Limiting overtime work
- Providing rest pauses to relieve fatigued muscle-tendon groups
- Increasing the number of employees assigned to a task to alleviate severe conditions,

especially in lifting heavy objects
- Providing enough relief personnel to compensate for conditions on the line (e.g., worker absences)
- Job rotation

Tool selection requires tool sizes that achieve a proper fit and reduce the ergonomic risk for the individual doing the work. Tools, equipment, and handles should be selected to eliminate or minimize chronic muscle contraction, steady force, extreme or awkward positions of the fingers, hands, or arms, repetitive forceful motions, tool vibrations, and excessive gripping, pinching, and pressing with the hand and fingers.

When selecting PPE, care should be taken to ensure proper fit and a wide variety of sizes to accommodate the worker and the job's physical requirements. Other factors to consider when selecting personal protective equipment include:

- Avoidance of extreme postures.
- Excessive forces.
- Protection against extreme cold or heat to minimize stress on joints.
- No increase in ergonomic stressors.

Program Evaluation

Evaluation of the ergonomics program and any controls implemented will be conducted periodically to assure effective program administration, management, and compliance.

Training

Training will be provided to new employees at orientation and to all employees in crafts or tasks which have been identified as having potential WMSD hazards.

Supervisors and persons involved in setting up and administering the Ergonomics program.

Any employee observed not following ergonomics rules or whose job performance indicates they have not comprehended the program requirement will be retrained.

Records

- Records of employees' reports of hazards and concerns.
- Corrective Action Registers.
- Job Hazard Analysis.
- Medical Management records.
- Supervisor Incident Reports.

Reports of WMSDs

- When reports of WMSDs are made, employees will be provided with prompt access to PHLCP for effective medical evaluations, treatment, and follow-up, if necessary.
- Information will be provided to PHLCP to help assure effective medical management.
- A written medical opinion will be obtained from the PHLCP, and the employee will be provided a copy.

Information to be provided to PHLCP

- Descriptions of the employee’s job and hazards identified in the job hazard analysis.
- Descriptions of available changes to jobs or temporary alternative duties to fit the employee’s capabilities during the recovery period.
- A copy of this program and OSHA standard with medical management requirements.
- Opportunities to conduct workplace observations.

PHLCP Written Opinion

- The work-related medical condition related to the WMSD.
- Recommended work restrictions, if any, and follow-up visits are required.

- A statement that the PHLCP has informed the employee about the results of the evaluation and any medical condition resulting from exposure to WMSD hazards that requires further evaluation or treatment.
- A statement that the PHLCP has informed the employee about other physical activities that could aggravate the WMSD during the recovery period.

To the extent permitted and required by law, employee privacy and confidentiality will be maintained regarding medical conditions identified during the medical management process. PHLCPs will be instructed to not reveal in the written opinion, or any other communication, specific findings or diagnoses not related to the WMSD.

Definitions

Administrative Controls – are procedures and methods that significantly reduce daily exposure by altering how work is performed.

Engineering Controls – these are physical changes to jobs that control exposures at the source by changing, modifying, or redesigning.

Ergonomics – the science of fitting the job to the worker.

Job Factors – are workplace conditions and physical work activities that must be considered when conducting a job hazard analysis.

Manual Handling Operations – include:

- Lifting/lowering, pushing/pulling, or carrying, and
- Exertion of considerable force because the particular load is heavy or the cumulative totals of the loads during the workday is heavy; and
- Manual handling work activities are a significant portion of the employee's regular job duties.

Musculoskeletal Disorders (MSD) – injuries and disorders of the muscles, nerves, tendons, ligaments, joints, cartilage, and spinal disks.

Physicians or other Licensed Health Care Professionals (PHLCP) – are persons educated and trained in the delivery of health care services who are operating within the scope of their license, registration, certification, or legally authorized practice

Signs (of WMSDs) – are objective, observable physical findings of MSDs

Symptoms (of WMSDs) – are physical reports (not observable) of physical pain or discomfort.

Work Related Musculoskeletal Disorder (WMSD) –injuries or illnesses to the muscles, joints, tendons, or nerves (Soft Tissues).

H2S Awareness Program

Purpose

This procedure establishes the minimum requirements for Cotton personnel who work in an atmosphere that may contain a hazardous concentration of hydrogen sulfide (H2S). The purpose of this procedure is to provide safety for Cotton employees that work around hazardous chemicals.

This program is hazard recognition and education-focused and does not imply that any training associated with this program certifies or qualifies any employee to analyze worksites for H2S hazards, measure contaminants, or determine safe exposure levels.

Regulations

29 CFR 1910.1200

29 CFR 1910.119.

Responsibilities

Supervisor will:

- Ensure that procedures to protect Cotton employees from H2S in the workplace are implemented and followed.
- Make sure all employees who are to be assigned to work at locations where hydrogen sulfide is known to be present, or suspected to be present in any concentration, have been trained in hydrogen sulfide safety.
- Ensure employees have been medically approved to wear respirators and trained on the safe use of respirators, including a respirator fit test.
- Verify employees have been trained and familiar with personal H2S monitors and gas detection instruments.
- Necessary respiratory equipment to perform the work safely is available.

Employees will:

- Follow procedures designed to protect them against exposure to H2S.
- Be competent in the specific emergency equipment, methods, and procedures regarding hydrogen sulfide safety at each area/location.

HSE Department will:

- Provide information concerning H2S, and techniques to control or eliminate employee exposure to H2S in the workplace.
- Audit this program and make any changes to it based on changes to regulations, audits and/or incident investigation, and corrective actions.

General Requirements

Background

Hydrogen sulfide is a very common air contaminant, found in oil and gas fields and refineries i.e., Drilling Operations, recycled drilling mud, water from sour crude wells, bow outs, tank gauging, field maintenance, tank batteries and wells, processes, and process streams, etc. Hydrogen sulfide is a neurotoxin, which means it is poisonous to nerve and brain cells.

Common Exposure

Inhalation is the common route by which hydrogen sulfide enters the body. Able to pass easily from the lungs to the bloodstream, H_2S can quickly kill. Exposure to as little as 600 ppm H2S in the air for 30 minutes has been fatal; higher exposures can cause immediate death.

Characteristics of Hydrogen Sulfide (H2S)

Hydrogen sulfide is colorless and has the odor of rotten eggs. H2S is toxic, flammable, corrosive, soluble in water, and creates toxic by-products when burned.:

- **Toxicity** –Hydrogen sulfide is a very dangerous and deadly gas - it is colorless and heavier than air. It can accumulate in low places and small concentrations. Exposure to certain concentrations of H2S can cause serious injury or death.
- **Color** - H2S is colorless – you cannot see it.
- **Odor** – it has a strong, pungent, somewhat distasteful odor similar to rotten eggs. In higher concentrations, it can deaden the sense of smell (olfactory nerve). Do Not Rely on Smell to Detect H2s – Rely Strictly on Instruments Designed to Measure Concentrations of H2S.
- **Solubility** – H2S mixes with water.
- **Flammability** – H2S is an explosive gas.
- **Toxic By-Products** – H2S presence can create sulfur dioxide which can ignite without warning

Toxic Effects of Hydrogen Sulfide

CONCENTRATION	PHYSICAL EFFECT
.01 PPM	You can smell an odor.
10 PPM	Obvious and unpleasant odor. Beginning eye irritation. ANSI permissible exposure level for 8 hours (enforced by OSHA).
100 PPM	Immediately Dangerous to Life or Health (IDLH) Kills smell in 3-15 minutes; may sting eyes and throat. It may cause coughing and drowsiness. Possible delayed death within 48 hours.
200 PPM	Kills smell shortly, stings eyes and throat. Respiratory irritation. Death after 1-2 hours of exposure.
500 PPM	Dizziness; breathing ceases in a few minutes. Need prompt rescue breathing (CPR). Self-rescue is impossible because of a loss of muscle control.
700 PPM	Become unconscious quickly; death will result if not rescued promptly. 1000 PPM Unconscious at once, followed by death within minutes.

Health Effect of Exposure to Hydrogen Sulfide

The health effects of hydrogen sulfide include irritation of the eyes, nose, throat, and respiratory system. Hydrogen sulfide is both an irritant and a chemical asphyxiant with effects on both oxygen utilization and the central nervous system. Its health effects can vary depending on the level and duration of exposure.

Although even in low concentrations hydrogen sulfide has the distinct and disagreeable odor of rotten eggs, poisoning can occur with virtually no warning at all. This is because hydrogen sulfide in concentrations high enough to kill also quickly numbs the sense of smell.

If H2S is absorbed faster or in greater quantities than the body can rid itself of it, it will build up in the blood and poison the centers in the brain, which control breathing. The lungs stop working and death due to asphyxiation results. A person can be overcome by hydrogen sulfide and lose consciousness in seconds.

Much more rarely, death results not from the poisonous properties of hydrogen sulfide but it is irritant properties. If conditions are just right (low exposure levels for long periods). The upper respiratory tract and lungs fill with fluid in response to the irritation, in effect drowning the victim, even though poisoning of the nervous has not yet occurred. This is called pulmonary edema.

Symptoms

In small doses, H2S causes a wide range of chronic effects. With low levels (e.g., 10 - 100 ppm) or repeated exposures, headache, dizziness, nausea, and vomiting may develop, along with irritation of the eyes and respiratory tract. Respiratory symptoms include cough, pain in the nose and throat, and painful breathing. Other symptoms of chronic poisoning include slowed pulse, fatigue, insomnia, digestive disturbances, cold sweats, eye infections, and weight loss.

General Requirements

Each person entering an H2S designated location, regardless of the concentration, will wear a personal H2S monitor that is set to alarm at 10 PPM and will carry a 5-minute escape pack with them at all times. When the alarms sound the employees must either evacuate the area or don the SCBA's or airline respirators. Employees must evacuate the area, and don SCBA's or airline respirators upon sounding the H2S alarm.

When work requires opening any equipment on a location that has the potential of releasing concentrations of H2S at 100 PPM or higher, two or more H2S trained persons will be present and follow these procedures before and during the opening of the equipment:

- Each person entering the H2S location will don a personal H2S monitor before entry.
- A tailgate meeting will be held with everyone on location to discuss the work plan, the responsibilities of each person, and the site-specific contingency plan.
- Each person will have either a self-contained breathing apparatus (SCBA) or a supplied airline respirator equipped with a 5-minute escape pack which will be worn when opening the equipment to the surrounding atmosphere.
- At least one person (per two workers), equipped with an SCBA will act as a stand-by person and may not participate in the work being performed until the atmosphere has been tested and found to have no H2S present in quantities over 10 PPM. The stand-by person will be stationed upwind, within 100 feet, and in clear view of the workers.
- After the equipment has been locked and tagged out, opened and the H2S concentration has been cleared to less than 10 PPM, the stand-by person will no longer be required. Work may then be performed without respiratory equipment, except for the required 5-minute escape pack.

Safe Work Procedures

- Maintain compliance with permit requirements of Cotton and any requirements by the client.
- Verify that proper safety equipment is available, functioning properly, and utilized.
- Check and remain aware of wind conditions and direction.
- Perform a thorough check of the downwind area before the start of any potentially hazardous work activity.
- Check for other personnel and ignition sources.
- Ventilate work areas by venting and purging lines and vessels before beginning any work activities. Keep all non-essential personnel away from work areas.
- Immediately vacate the area when any H2S monitor sounds and do not re-enter without proper respiratory protection.

Methods of Reducing Exposure

Where feasible, hydrogen sulfide exposures should be controlled through engineering controls and work practices. Respirators should be used to control exposures that are intermittent or caused by emergency conditions while awaiting engineering controls to be implemented.

Monitoring

Methods of detecting H2S by the use of fixed or portable monitors will alarm at the appropriate permissible exposure limits of 20 PPM for OSHA General Industry 1910 or 10 PPM for OSHA Construction 1926.

A portable H2S gas testing instrument, either electronic or manual pump operated, is capable of testing the suspected concentrations of H2S in the system. Each testing instrument must be capable of testing the suspected concentrations of H2S by using the manufacturer’s recommended calibrated tube or other means of measuring the concentration of gas. Testing instruments will be calibrated periodically according to the manufacturer’s recommendation, and at least annually.

Calibration kits with regulator and gas cylinder for calibrating the personal monitor.

Before entering the area project Site, Safety Personnel will survey the area with air monitoring equipment. Continuous air monitoring will be conducted while employees are working in areas that have the potential to exceed established exposure levels. Employees will wear monitors that are equipped with a pre-set audible alarm that activates when levels exceed 10 PPM. Employees will evacuate the area in the event a monitor alarm sounds. Employees are not permitted to return to the

area until the area has been deemed safe by Safety Personnel.

Respiratory Protection

Respirator wearers requiring corrective eyewear will be fitted with spectacle kits according to the respirator manufacturer, at no expense to the employee.

Respirators and their components, including all fittings of hoses, will not be interchanged, which if done, would violate the approval rating of said respirator or related equipment.

Respiratory Protection will be worn as outlined below:

H2S Concentration	Respirator*	Cartridge
Unknown (i.e., no air sampling information and/or emergency response for a release)	Full Face Supplied Air with escape SCBA	Not applicable
Less than 10.0 PPM	None required	Not applicable
Greater than or equal to 10.0 PPM	Full Face supplied Air with escape SCBA	Not applicable

When self-contained breathing apparatus is used in operations where known or potential concentrations of hydrogen sulfide levels reach or exceed levels that are immediately dangerous to life or health (IDLH), two or more standby persons must be present and equipped with the appropriate Personal Protective and rescue equipment.

Approved self-contained breathing apparatus or airline respirator with escape SCBA should be used with H2S with a 5-minute escape pack and will be worn when opening the equipment to the surrounding atmosphere.

At least one person (per two workers), equipped with an SCBA will act as a stand-by person and may not participate in the work being performed until the atmosphere has been tested and found to have no H2S present in quantities over 10 PPM. The stand-by person will be stationed upwind, within 100 feet, and in clear view of the workers.

Additional Personal Protective Equipment (PPE)

When liquids or vapors containing hydrogen sulfide are present, additional PPE i.e., chemical suits, gloves, boots, etc. will be used.

Confined Spaces

Employees will not be permitted to enter confined spaces that contain Hydrogen Sulfide levels above 10 PPM. A detailed Safety Action Plan will be developed and approved by the client's HSE department and Cotton Sr. HSE Manager for any confined space entry where Hydrogen Sulfide levels have the potential to exceed the action level. The plan will include respiratory and personal protective equipment, requirements, an emergency contingency plan, roles and responsibilities, and the number of employees involved. Upon approval, all employees and supervisors involved will attend a Safety Kick-off Meeting. The plan, roles, responsibilities assigned, and all requirements will be reviewed before work.

Employee Training

All employees working in areas with potential hydrogen sulfide exposures must be properly trained.

Training will be conducted upon initial employment and repeated annually. Employees must receive additional training if there is a change in or addition of a process or operation that creates the potential for exposure. The Human Resources Department is responsible for tracking and maintaining employee-training records.

The training will include:

- Physical and chemical properties of H2S
- Sources of H2S
- Human physiology

- Signs and symptoms of H2S exposure, acute and chronic toxicity
- Symptomatology of H2S exposure
- Medical evaluation
- Work procedures
- Personal protective equipment is required to work around H2S
- Use of contingency plans and emergency response
- Burning, flaring, and venting of H2S
- State and federal regulatory requirements H2S release dispersion models
- Rescue techniques, first aid, and post-exposure evaluation
- Use, care, and calibration of personal monitors and gas detection instruments
- SCBA inspections and record keeping

Additionally, the employees will be informed of the site's H2S emergency plan and evacuation procedures.

Definitions

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

Exposure Limits for hydrogen sulfide (H2S) - Personal or area monitors that alarm when PEL exceeds the preset level of 20 ppm for the General Industry (1910) or 10 ppm for the Construction Industry (1926) must be used.

Gas Detector Instrument - An instrument/detector to measure levels of H2S. Instruments may be electronically or manually operated.

Locations Where Hydrogen Sulfide (H2S) May Be Found – Hydrogen sulfide may be encountered during drilling operations. The gas may be associated with recycled drilling mud, water from sour crude wells, blowouts, tank gauging, and field maintenance. Hydrogen sulfide may also be present in refineries and is associated with decaying material in natural settings.

Parts Per Million (PPM) - parts of vapor or gas per million parts of contaminated air by volume.

Personal H2S Monitor - An electronic instrument worn on the person that is set to alarm at 10 PPM of H2S.

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

Manual Lifting Techniques

Purpose

Back safety awareness and safe lifting guidelines are necessary due to the prevalence and severity of back injuries throughout all industries. Backs can be injured by improper lifting, falling, stretching, overextending, and other workplace mishaps. Of these, using improper lifting techniques (as in hand-loading and unloading activities) is the largest single cause of back pain, strain, and injury.

Cotton requires these procedures to be followed to provide a safe working environment and to protect the health of all our employees. Cotton has implemented these procedures on safe lifting practices to ensure that all employees are trained to protect themselves from the hazards of improper lifting practices.

Regulations

The Occupational Safety and Health Administration (OSHA) does not have a specific regulation for manual lifting techniques, but training employees to lift safely is implied by the General Duty Clause of the Occupational Safety and Health Act of 1970. The law requires employers to provide employees with a workplace that is free of recognized hazards.

Responsibilities

Supervisors will:

- Ensure that all worksite departments implement and maintain the provisions of the Lifting and Handling Loads Program.
- Provide manual lifting equipment such as dollies, hand trucks, lift-assist devices, jacks, carts, and hoists for employee use as needed.
- Ensure that the manual lifting provided equipment is used to prevent Musculoskeletal disorders (MSD).

Employees will:

- Comply with safe work procedures.
- Correctly use the equipment provided and follow manufacturers' recommendations.
- Report to the supervisor any unsafe acts, unsafe tasks, unsafe conditions, or equipment problems that create Musculoskeletal disorders (MSD) hazards.
- Report any Musculoskeletal disorders (MSD) incidents to the supervisor and cooperate in the investigation process.

HSE Department will:

- Monitor corrective actions are taken as identified on incident reports.
- Assist in the investigation of Musculoskeletal disorders (MSD) incidents to address injury hazards.
- Provide input into the development of safe work procedures to reduce Musculoskeletal disorders (MSD) hazards.
- Audit this program and make any changes to it based on changes to regulations, audits and/or incident investigation, and corrective actions.

Requirements and Procedures

The effectiveness of the back safety procedure depends on the active support and involvement of all employees. The following points outline safe and proper lifting techniques that will be taught to all employees to minimize their risk of back injury and pain. Lifting remains an important function despite the level of mechanization found in the workplace today, so attention must be directed toward safe lifting

Worksite Evaluation

A worksite evaluation for each job should be conducted which considers criteria such as, how much

weight must be lifted and how often must it be lifted. This evaluation includes the number of times during the shift the employee must bend over or bend down, the amount of physical fatigue in the job, as well as the number of actual lifts.

The awkwardness of the work should be evaluated for situations such as whether the work is overhead, extended reach, repeated twisting, prolonged working on concrete or steel surfaces, prolonged standing or sitting, or otherwise working in one fixed position.

Before manual lifting is performed, a hazard assessment should be completed. The assessment must consider the size, bulk, and weight of the objects if mechanical lifting equipment is required if a two-man lift is required, whether the vision is obscured while carrying and the walking surface and path where the object is to be carried. The assessment should also include:

Physical Demands

- Neck Back Shoulder Wrist
- Hand
- Knee Ankle/
- Feet

Force Required and Working Distance

- Do employees push, pull, lift, lower, or carry objects that are too heavy or require too much force; away from the center of the body or in a jerky or twisting manner?

Work Postures

- Is the back curved too much or in a stooped position?
- Is the back twisted during movements?
- Is the neck bent or twisted?
- Are the arms away from the body?
- Are the wrists flexed, extended, or pinched positions?

Repetitive Use of Similar Muscles

- Do employees perform movements over and over in the same way?

Static Muscle Use and Duration

- Do employees hold any of the above work postures for > 20 sec.?
- Stand for long periods with their knees locked?
- Stand in one position without moving or stretching?

Contact Stress

- Do employees put localized pressure on any part of their body?

Workspace Layout and Conditions

- Are there working heights, reaches in the workspace, equipment, tool design, storage conditions, etc., that cause or contribute to employees experiencing any of the physical demands risk factors?
- Also consider seating, floor surfaces, the characteristics of objects handled, including size and shape, load condition and weight distribution, and container as well as tool and equipment handles.

Organization of Work

- Are there work processes, monotonous job tasks, work recovery cycles, task variability, work rate, machine-paced tasks, or peak activity demands that cause or contribute to rushing, frustration, fatigue, or other visible signs of stress?

Environmental Conditions

- Are employees exposed to poor lighting, vibration, cold or hot air/wind/water?

Reducing the Opportunities for Back Injuries

The availability of hoists, dollies, and other lifting or material handling equipment should be considered where practical. Workstation redesign, such as providing tables or benches to place tools and work equipment at waist level reduces the number of stoops and bends required to pick up these materials from the floor during a work procedure

Tool racks are very helpful for storing tools, chains, ropes, and other commonly used items at a comfortable retrieval level rather than having to stoop over to pick them up from the floor. The simple adjustment of height for work machinery or workstations may also be very helpful in relieving stress on the back which can be caused by an uncomfortable work elevation.

Rules for Proper Lifting

All employees of Cotton will be trained in and expected to adhere to, the following lifting techniques when they are required to perform any lifting activity as part of their job duties. When required to perform lifting activities, Company employees are expected to:

Size up the load before lifting

Test by lifting or pushing a corner of the object. If it is heavy or feels too clumsy, get a mechanical aid, or help from a coworker. When in doubt, Company employees are expected to obtain help and to never attempt lifting alone.

Bend the knees

Bending of the knees is the single most important aspect of any lifting activity. When performing a lift, employees will:

- Place feet close to the object and center their body over the object.
- Get a good, firm handhold.
- Lift straight up, smoothly, and let your legs do most of the work.
- Avoid overreaching or stretching to pick up or set down an object.
- Avoid twisting or turning the body once the lift has been made.
- Make sure beforehand that a clear path is available to carry the object.
- Set the object down properly, keeping the back straight at all times.
- Always push, not pull, objects when possible.
- Change the lifting situation, if possible, to minimize a lifting hazard.

Additional lifting (loading and unloading) expectations include:

- If the object is too long or awkward, Company employees are required to get help.
- Splitting the load into several smaller tasks to achieve manageable lifting weight.

Avoiding lifts from below the knees or above the shoulders by using mechanical aids

- The employee should evaluate the load to be lifted.
    - Determine if the weight is reasonable and
    - Whether the positioning of the item to be lifted is awkward.
    - A determination should be made regarding the employee's limitations, including whether the employee is tired and whether the back is currently healthy enough to safely lift and carry the load.
- Evaluate the floor surface for oil, grease, or trip hazards and the location where the load will be moved. This will help to assure safe footwork and eliminate twisting or unusual movements of the body.
- The employee should stand close to the object to be lifted with feet spread comfortably apart and one foot placed slightly forward.
- The employee should squat down and straddle the load somewhat. The back should be kept straight, and the knees should be bent.
- The object should be grasped firmly while a breath is drawn which inflates the lungs and helps to support parts of the back.
- Lift with the legs. It is important to lift the object naturally and comfortably while keeping the bottom out and the small of the back slightly arched inward. Hold the object close to the body during the lift. Lift the object straight up to a comfortable standing position before walking or turning.
- Particular care must be taken to avoid injury when participating in lifting or carrying loads with groups of employees. One member of the group should give signals so that everyone will work in unison.

Lifting Overhead

The maximum load you can lift is less because you cannot use your legs. Spread your feet with one slightly in front of the other. Use a sturdy ladder, when possible, to remove the overhead activity.

Lifting Heavy Objects

A good rule of thumb for lifting heavy objects is if an object weighs more than 50lbs. or if the item is too bulky or awkward you should get others to help.

Training

A worker who may be exposed to the possibility of musculoskeletal injury is trained in specific measures to eliminate or reduce that possibility. Our training will include:

- General principles of ergonomics,
- Recognition of hazards and injuries,
- Procedures for reporting hazardous conditions, and
- Methods and procedures for early reporting of injuries.

Definitions

MSD – means Musculoskeletal disorders (MSD)

Compressed Gas Cylinders

Purpose

This program establishes the requirements that will minimize the hazards of using or handling compressed gas cylinders, including cylinders containing gases used for burning, welding, breathing air, fire protection, etc.

Regulations

Under the General Duty Clause, Section 5(a)(1) of the Occupational Safety and Health Act of 1970, employers are required to provide their employees with a place of employment that "is free from recognized hazards that are causing or likely to cause death or serious harm to employees."

Responsibilities

Supervisor will:

- Ensure that all employees are aware of the proper handling, storage, and use requirements for compressed gas cylinders.

Employees will:

- Follow all requirements regarding the safe handling, storage, and use of compressed gas cylinders.

HSE Department will:

- Audit this program and make any changes to it based on changes to regulations, audits and/or incident investigation, and corrective actions.

Procedures and Requirements

General

Cylinders will not be accepted, stored, or used if evidence of denting, bulging, pitting, cuts, or neck or valve damage is observed. If damage is observed:

- The cylinder must be taken out of service.
- The cylinder's owner will be notified to remove the cylinder from the premises.

Cylinder Identification

Gas identification will be stenciled or stamped on the cylinder, or a label used. No compressed gas cylinder will be accepted for use that does not legibly identify its content by name.

Handling

Valve caps must be secured onto each cylinder before moving or storage. Cylinders will not be dropped, struck, or permitted to strike each other violently.

Secure the cylinder in a blanket when being lifted by mechanical means. The preferred means to move compressed gas cylinders is with a cart, carrier, or with helper. Compressed gas cylinders can only be transported on vehicles specifically designed to keep cylinders secure and in an upright position. Slings, ropes, or electromagnets are prohibited to be used for lifting compressed gas cylinders

When a cylinder cap cannot be removed by hand the cylinder will be tagged "Do Not Use" and returned to the designated storage area for vendor return.

Storing

All cylinders must be secured upright in a safe, dry, well-ventilated area that limits corrosion and deterioration. Cylinders must be secured by means that will prevent the cylinder from falling.

Empty and non-empty cylinders will be stored separately. Valve protection caps, where a cylinder is

designed to accept a cap, will always be in place except when in use or connected for use. Valves on cylinders must always be closed except when in use; this includes empty cylinders.

Oxygen cylinders must be stored a minimum of 20 feet from combustible gas cylinders or areas where there may be open flame or arcing. Do not allow pure oxygen to come in contact with hydrocarbons in any form. Cylinders may also be stored where the oxygen is separated from combustible gas cylinders by a 5-foot or higher wall with a fire-resistance rating of 30 minutes.

Storage areas for full and empty cylinders must be designated and labeled. Cylinders should be stored in assigned places away from elevators, stairs, or gangways.

Use of Fuel Gas

Before a regulator to a cylinder valve is connected, the valve will be opened slightly and closed immediately. This action is generally termed “cracking” and is intended to clear the valve of dust or dirt that might otherwise enter the regulator. The person cracking the valve will stand on one side of the outlet, not in front of it. The valve of a fuel gas cylinder will not be cracked where the gas would reach welding works, sparks, flame, or other possible sources of ignition.

The cylinder valve will always be opened slowly to prevent damage to the regulator. For quick closing, valves on fuel gas cylinders will not be opened more than 1 1/2 turns. When a special wrench is required, it will be left in position on the stem of the valve while the cylinder is in use so that the fuel gas- -flow can be shut off quickly in case of an emergency. When using manifold or coupled cylinders, at least one such wrench will always be available for immediate use. Nothing will be placed on top of a fuel gas cylinder, when in use, which may damage the safety device or interfere with the quick closing of the valve.

Fuel gas will not be used from cylinders through torches or other devices which are equipped with shutoff valves without reducing the pressure through a suitable regulator attached to the cylinder valve or manifold.

Before a regulator is removed from a cylinder valve, the cylinder valve will always be closed, and the gas released from the regulator.

Leaking Cylinder

If, when the valve on a fuel gas cylinder is opened, there is found to be a leak around the valve stem, the valve will be closed, and the gland nut tightened. If this action does not stop the leak, the use of the cylinder will be discontinued, and it will be properly tagged and removed from the work area. If fuel gas should leak from the cylinder valve, rather than from the valve stem and the gas cannot be shut off, the cylinder will be properly tagged and removed from the work area.

If a leak should develop at a fuse plug or other safety device, the cylinder will be removed from the work area.

Hoses

Fuel gas hose and oxygen hose will be easily distinguishable from each other. The contrast may be made by different colors or by surface characteristics readily distinguishable by the sense of touch. Oxygen and fuel gas hoses will not be interchangeable. A single hose having more than one gas passage will not be used.

When parallel sections of oxygen and fuel gas hoses are taped together, not more than 4 inches out of 12 inches will be covered by tape.

All hoses will be visually inspected before and after each use for damage to the hose and connectors.

The hose which has been subject to flashback, or which shows evidence of severe wear or damage, will be pressure tested before being put back into service. Defective hoses or hoses in doubtful condition will not be removed from service.

Hose couplings will be of the type that cannot be unlocked or disconnected using a straight pull without rotary motion.

Hoses, cables, and other equipment will be kept clear of passageways, ladders, and stairs.

Cutting Torch

Clogged torch tip openings will be cleaned with suitable cleaning wires, drills, or other devices designed for such purposes.

Torches in use will be inspected at the beginning of each working shift for leaking shutoff valves, hose couplings, and tip connections. Defective torches will not be used.

Torches will be lighted by friction lighters or other approved devices, and not by matches or from hot work.

All cutting torches must be equipped with flash arresters.

Regulators and Gauges

Oxygen and fuel gas pressure regulators, including their related gauges, will be in proper working order while in use. All regulators will be equipped with flashback protection.

Oil and Grease

Pure oxygen when mixed with hydrocarbons is very flammable. Oxygen cylinders and fittings will be kept away from oil or grease. Cylinders, cylinder caps and valves, couplings, regulators, hoses, and apparatus will be kept free from oil or greasy substances and will not be handled with oily hands or gloves. Oxygen will not be directed at oily surfaces, greasy clothes, or within a fuel or other storage tank or vessel.

Rigging Equipment

Purpose

To establish procedures for the safe use and handling of rigging equipment for material handling that is used during daily operations. The types of slings covered are those made from alloy steel chains, wire ropes, and synthetic web (nylon, polyester, and polypropylene).

Regulations

29 CFR 1926.251

Responsibilities

Supervisor will:

- Assist the managers in the tasks described above. The supervisor will verify that each of their employees has the proper training before being involved in rigging operations.
- Verify that only qualified and trained personnel can attach or detach lifting equipment to loads or lifting loads.

Employees will:

- Abide by the requirements of this procedure.
- Stay clear of suspended loads

HSE Department will:

- Audit this program and make any changes to it based on changes to regulations, audits and/or incident investigation, and corrective actions.

Procedures and Requirements

Inspections

Rigging equipment is inspected before use. Rigging equipment for material handling will be inspected before use on each shift and as necessary during its use to ensure that it is safe.

Each day before being used, the sling and all fastenings and attachments will be inspected for damage or defects by a Cotton job supervisor. Additional inspections will be performed during sling use, where service conditions warrant. Damaged or defective slings will be immediately removed from service.

General

Only “qualified riggers” are allowed to attach any loads to a lifting hook and only “qualified operators” are allowed to operate a crane while engaged in lifting operations.

All employees will be kept clear of loads about to be lifted and of suspended loads.

The Cotton job supervisor must ensure that the rigging equipment:

- Has permanently affixed and legible identification markings as prescribed by the manufacturer that indicates the recommended size and safe working load
- Not be loaded over its recommended safe working load as prescribed on the identification marking by the manufacturer.
- Not be used without affixed, legible identification markings. Rigging equipment, when not in use, will be removed from the immediate work area so as not to present a hazard to employees.

Special custom design grabs, hooks, clamps, or other lifting accessories will be marked to indicate the safe working loads and will be proof tested before use to 125 percent of their rated load.

Material Handling

The rated capacity of rigging equipment will not be exceeded. Rigging equipment must have permanently affixed and legible identification markings as prescribed by the manufacturer that indicates the recommended safe working load. Rigging must not be loaded more than its

recommended safe working load as prescribed on the identification markings by the manufacturer; and must not be used without affixed, legible identification markings.

Rigging equipment, when not in use, will be removed from the immediate work area. Rigging equipment not in use will be removed from the immediate work area so as not to present a hazard to employees.

Tag lines will be used unless their use creates an unsafe condition.

Ensure that hooks have safety latches. Hooks used in the connection between the hoist line and the personnel platform (including hooks on overhaul ball assemblies, lower load blocks, bridle legs, or other attachment assemblies or components) must be of a type that can be closed and locked, eliminating the throat opening and closed and locked when attached.

Alloy Steel Chains

In addition to the daily inspection required, a thorough periodic inspection of alloy steel chains will be made on an annual basis to determine the frequency of use, the severity of conditions, the nature of lifts being made, and experience gained on the service life of slings used in similar circumstances. When using alloy steel chains to make a lift never exceed the rated capacity indicated on the sling. Chains should only be used in the manner in which they came from the manufacturer and will never be altered for use. Do not use alloy steel chains that have been heated above 1,000°F. Remove from service. Alloy chain slings exposed to temperatures above 400°F have reduced load ratings. Reductions in rated load for Grade 80 and Grade 100 chain slings used at and after exposure to elevated temperatures are given in Table 1. A light coating of oil should be placed on chains before storage. Store chains where they will not be damaged or corroded. Alloy steel chain slings will be immediately removed from service if any of the following conditions are present:

- Missing or illegible sling identification.
- Cracks or breaks.
- Excessive wear, nicks, or gouges.
- Stretched chain links or components.
- Bent, twisted, or deformed chain links or components.
- Excessive pitting or corrosion.
- Lack of ability of chain or components to hinge (articulate) freely.
- Weld splatter.
- Other conditions, including visible damage, cause doubt as to the continued use of the sling.

Synthetic Web

The supervisor will ensure that each synthetic web sling is marked to show the name or trademark of the manufacturer, the rated capacities for the types of the hitch (vertical, choker, or basket), and the type of material. The webbing will be of uniform thickness and width and selvage edges will not be split from the webbing's width. The webbing will be free of all sharp edges that could in any way damage the webbing. Synthetic web slings of polyester and nylon will not be used at temperatures over 180°F. Polypropylene web slings will not be used at temperatures over 200°F. Synthetic webbing will not be left in environmental conditions where fumes, vapors, sprays, mists, or liquids of acids, phenolics, or caustics are present. When securing the load with synthetic webbing, avoid choking or hooking directly on the identification tag, splices, or stitching. Synthetic fiber web slings will be immediately removed from service if any of the following conditions are present:

- Missing or illegible sling identification.
- Acid or caustic burns.
- Holes, tears, cuts, snags, or punctures.
- Excessive abrasive wear.
- Melting or charring of any part of the sling.
- Knots in any part of the sling.
- Broken or worn stitching.
- Fittings that are pitted, corroded, cracked, bent, twisted, gouged, or broken.
- Other conditions, including visible damage, cause doubt as to the continued use of the sling.

Wire Rope

Wire rope slings will have permanently affixed, legible identification markings stating size, rated capacity for the type(s) of hitches used and the angle upon which it is based, and the number of legs if more than one. The weak points in the rope or the points where the greatest stress occurs should be inspected with great care. In general, examine the rope for worn spots and broken wires. Worn spots will show up as shiny flattened spots on the wires. Measure some of these shiny spots. If it appears that the outer wires have been reduced in diameter by one-fourth, the worn spot is unsafe. Do not use it if any of the wires are broken in the rope. Fiber core wire rope slings of all grades will be permanently removed from service if they are exposed to temperatures over 200°F. When non-fiber core wire rope slings of any grade are used at temperatures above 400°F recommendations of the sling manufacturer will be followed. Wire rope slings should be stored in a well-ventilated, dry building or shed. To avoid corrosion and rust, never store wire rope slings on the ground or allow them to be continuously exposed to the elements. And, if it is necessary to store wire rope slings outside, make sure that they are set off the ground and protected. Wire rope slings will be immediately removed from service if any of the following conditions are present:

- Missing or illegible sling identification.
- Broken wires
- For cable-laid slings, twenty broken wires per lay.
- For less than eight-part braided slings, twenty broken wires per braid.
- For eight-part or more than eight braided slings, forty broken wires per braid.
- Severe localized abrasion or scraping.
- Kinking, crushing, bird caging, or any other damage resulting in damage to the rope structure.
- Evidence of heat damage.
- End attachments that are cracked, deformed, or worn to the extent that the strength of the sling is substantially affected
- Severe corrosion of the rope, end attachments, or fittings.
- Other conditions, including visible damage, cause doubt as to the continued use of the sling.

Shackles and Hooks

Employees will not use shackles with loads over the rated capacities indicated on the shackle by permanently affixed and legible identification markings prescribed by the manufacturer. The manufacturer's recommendations will be followed in determining the safe working loads of the various sizes and types of specific and identifiable hooks. All hooks for which no applicable manufacturer's recommendations are available will be tested to twice the intended safe working load before they are initially put into use. The safety manager must be present during the time of the test, and he will maintain a record of the dates and results of the test.

Training and Education

Employees who are designated competent riggers will display their competency in the following topics:

- The selection of proper hardware (eye bolts, shackles, hooks, wire rope products, synthetic slings, chain slings, etc.) for the correct application (weight, hitches, angles, temperatures, the center of gravity, etc.).
- The inspection of the selected hardware before, during, and after the lift.
- The proper methods of securing the load, attaching the load to the hook, lifting the load, handling the load during the movement of the load, and lowering and placement of the load.
- The proper storage of the rigging equipment.

All employees will re-certify their training on a four (4) year basis.

Definitions

Rigging - the art or process of safely attaching a load to a hook using adequately rated and properly applied slings and related hardware.

Qualified Rigger - any person who attaches or detaches lifting equipment that has completed training.

Access to Medical Records

Purpose

To allow employees, or their designated representative, complete access to their medical and exposure records generated while working at Cotton. Furthermore, we recognize the employees' right to all information available on hazardous substances to which they have been exposed.

References

OSHA 29 CFR 1910.1020

OSHA 29 CFR 1926.33

OSHA 29 CFR 1910.10

Responsibility

Human Resources will maintain:

- All pre-employment medical records.
- All medical exams, exposure records, wipe tests, etc.
- All employee exposure records.

Employees will:

- Be familiar with this procedure and have access to their records.

HSE Department will:

- Develop, implement, and monitor the Medical and Exposure Records Access Program.
- Provide access to environmental monitoring records by the employee or designated representative
- Responsible for the review, implementation, and maintenance of the local worksite medical records procedure.

Procedures/Requirements

Employee Exposure Records Contents

A record of the employee's exposure to toxic substances or harmful physical agents will contain the following kinds of information:

- Environmental (workplace) monitoring or measuring, including personal, area, grab, wipe, or another form of sampling, as well as related collection and studies and other background data relevant to the interpretation of the results obtained.
- Biological monitoring results directly assess the absorption of a toxic substance or harmful physical agent by body systems (levels of a chemical in the blood, urine, breath, hair, fingernails, etc.) but do not include results that assess the biological effect of a substance or agent, or which assess an employee's use of alcohol or drugs.
- Material safety data sheet (MSDS) indicating that the material may pose a hazard to human health or a chemical inventory or any other record, which reveals the identity of a toxic substance or harmful agent and where and when the toxic substance or harmful physical agent was used.

Note: Employers must preserve employees' medical records for 30 years.

Employee Medical Record

A record concerning the health status of an employee that is made or maintained by a physician, nurse, or other health care profession or technician will include the following:

- Medical and employment questionnaires or histories (including job description and occupational exposures).
- Results of medical examinations (pre-employment, pre-assignment, periodic, or episodic) and laboratory tests (including chest and other X-ray results taken to establish a baseline or detect occupational illness, and all biological monitoring not defined as an "employee exposure record").

- Medical opinions, diagnoses, progress notes, and recommendations.
- First Aid Records.
- Descriptions of treatments and prescriptions and employee medical complaints.
- A written authorization containing the name and signature of the employee authorizing the release of medical information, the date the authorization was signed, the date the written authorization will expire (if less than one year), name of the representative that is authorized to receive the released information, the name of the individual authorized to release the information and a general description of the purpose for release of the medical information.

Employee medical record does not include medical information in the form of:

- Physical specimens (e.g., blood or urine samples) are routinely discarded as a part of normal medical practice.
- Records concerning health insurance claims if maintained separately from the employer's medical program and its records and are not accessible to the employer by employee name or another direct personal identifier (e.g., social security number, payroll number, etc.).
- Records created solely in preparation for litigation are privileged from discovery under the applicable rules of procedure or evidence.
- Records concerning voluntary employee assistance programs (alcohol, drug abuse, or personal counseling programs) if maintained separately from the employer's medical program and its records.

Employee Notification

Upon an employee's first entering into employment, and at least annually thereafter, each employer will inform current employees covered by this section of the following:

- Cotton will notify all new employees of their rights under this regulation; the existence, location, and availability of any record that may be covered by the regulation; and who maintains the records.
- Employees are entitled to a copy of the regulation upon request.
- Employee access to medical records must be provided in a reasonable time, place, and manner.
- All medical records are provided at no cost to employees.
- Personal identifiers (name, address, social security, payroll number, etc.) are removed from records before access is granted.

Recordkeeping/Preservation of Records

Employees will be informed of the provision of recordkeeping upon initial assignment and annually thereafter.

Because many occupational diseases can have long latency periods before the disease becomes apparent or diagnosed, the timeframe for preservation is very lengthy, requiring the preservation of the records for:

- The length of the employee's employment, plus thirty (30) years.
- Cotton is required to transfer all records to any successor employer. If the employer goes out of business, it can make provisions to preserve the records or transfer the records to the director of the National Institute for Occupational Safety and Health if a regulation requires it or give three months' notice to the director before disposing of the records. While this is infrequent, such records have been transferred to NIOSH when an employer has undergone bankruptcy.

Records Access

All Cotton Employees wanting access to their workplace exposure records must submit a request in writing to Human Resources and records must be provided in a reasonable manner and place.

If access is not provided within 15 days after the employee's request, the Human Resources Department should state the reason for the delay and the earliest date when the records will be made available.

Cotton should provide employees:

- Copies of the requested records and use of copy machines.
- Exposure records should be provided to requesting employees or their designated representatives. These records must reasonably indicate the identity, amount, and nature of the toxic substances or harmful physical agents to which the requesting employee has been exposed.
- The initial request for records should be provided without cost to the employee or designated representative.

Representatives of the Federal or State Occupational Safety and Health Administration (OSHA) or the Director of the National Institute for Occupational Safety Health (NIOSH) should have immediate access to all medical and exposure records upon request.

- Authorized Government representatives should have access to analyses that were developed as a result of using information derived from exposure or medical records about the employee's working conditions or workplaces.
- Personal identities and identifiable must be removed from the data analyses before access, such as social security numbers, addresses, payroll identifiers, or any other means by which the employee may be identified.

Definitions

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

Access - The right to examine and copy medical and exposure records.

Analyses - For analyses using exposure or medical records, recognized or certified collective bargaining agents may access the records without the individual employee's written consent. As with employee access, however, the employer must remove or prevent access to any information in these analyses that could reasonably be used to identify the individual employees whose records are the subject of the analyses.

Designated Representative -Any individual or organization to whom an employee gives written authorization to exercise a right of access. For access to employee exposure records and analyses using exposure or medical records, a recognized or certified collective bargaining agent should be treated automatically as a designated representative without regard to written employee authorization.

Employee means a current employee, a former employee, or an employee being assigned or transferred to work where there will be exposed to toxic substances or harmful physical agents. In the case of a deceased or legally incapacitated employee, the employee's legal representative may directly exercise all the employee's rights.

Employer means a current employer, a former employer, or a successor employer.

Exposure or exposed means that an employee is subjected to a toxic substance or harmful physical agent in the course of employment through any route of entry (inhalation, ingestion, skin contact or absorption, etc.), and includes past exposure and potential (e.g., accidental or possible) exposure, but does not include situations where the employer can demonstrate that the toxic substance or harmful physical agent is not used, handled, stored, generated, or present in the workplace in any manner different from typical non-occupational situations.

Health Professional means a physician, occupational health nurse, industrial hygienist, toxicologist, or epidemiologist, who provides medical or other occupational health services to exposed employees.

Record means any item, collection, or grouping of information regardless of the form or process by which it is maintained (e.g., paper document, microfiche, microfilm, X-ray film, or automated data processing).

Specific chemical identity means the chemical name, Chemical Abstracts Service (CAS) Registry Number, or any other information that reveals the precise chemical designation of the substance.

Specific written consent means a written authorization containing the following:

- The name and signature of the employee authorizing the release of medical information.
- The date of the written authorization.
- The name of the individual or organization that is authorized to release the medical information.
- The name of the designated representative (individual or organization) that is authorized to

receive the released information.

- A general description of the medical information that is authorized to be released.
- A general description of the purpose for the release of the medical information.
- A date or condition upon which the written authorization will expire (if less than one year).

Trade secret means any confidential formula, pattern, process, device, or information or compilation of information that is used in an employer's business and that allows the employer to obtain an advantage over competitors who do not know or use it.

Business Continuity

Purpose

This business continuity plan has been established to ensure that critical business functions will be available to customers in the event of a natural or human-induced disaster.

Objectives and/or Goals of the Business Continuity Plan

The business continuity objectives will be measurable, monitored, communicated, and updated as appropriate. Objectives and targets can be measured qualitatively and/or quantitatively. Written documentation should be maintained of these objectives. When planning business continuity objectives, Cotton will determine what will be done, what resources will be required, who will be responsible, when it will be completed, and how the results will be evaluated. Goals and objectives can include:

- Risk Prevention, Reduction, and Mitigation
- Organizational Resilience Enhancement
- Financial, Operational, and business continuity requirements
- Compliance with legal requirements
- Continual Improvement

Responsibilities

The business continuity/resilience plan for Cotton should clearly state the roles and/or responsibilities of those who are responsible for implementing continuity strategies. The Cotton VP is responsible for ensuring communications to receive directions on when to return based on local governmental and federal disaster guidelines. A list of all personnel and phone contacts and document that all on-duty personnel is notified and accounted for. Human resources, IT, purchasing, and operations roles and responsibilities are described below.

Business Continuity Risk Assessment

A business continuity risk assessment and/or impact analysis is completed. An analysis of the potential risks and impacts that could occur from disruptions to normal business operations will be performed. These analyses identify the potential areas where the company will be most severely disrupted, legal obligations of the company, key activities that help it provide goods and services, the persons, and other entities dependent on the company, and the impact of the company being unable to deliver on its obligations, and anything else that may be affected in significant disruption.

Organizational Resilience Enhancements

Preparation

The very nature of crisis means, that it cannot be predicted when a crisis might happen, we plan for the most inconvenient times – weekends, early morning, or late evening. Given this, it is recommended that copies of this plan are kept by each member of the management team both at the workplace and at home.

Disaster Occurs

We need to be able to service clients based on a priority ranking. Some major impact considerations will include:

- Supply shortages as hoarding begin.
- Revenue falls as customers delay work.
- Staffing difficulties as employees choose not to travel.

Pandemic Crisis

In this situation, it is the mission of the government bodies to minimize serious illness and overall deaths and second to minimize societal disruptions among the public. Some major impact considerations will include:

- Government acts to reduce unnecessary travel and the potential for person-to-person contact,

leading to revenue losses.
- Public transport systems reduced/closed down.
- Fuel supplies were rationed to only essential workers.
- Food supplies were rationed to only essential businesses and the public.
- Governments will close all non-essential services.

Business Continuity Core Planning

If the home office facility is closed or not able to be used:

- Management staff members based out of the home office that have a functioning laptop will meet at a designated area where initial plans will be discussed, and internet access and telephone/fax lines must be available. Flip charts and other office supplies and shelf-stable food and water for a minimum of three days will be purchased and stored for use as needed.
- Management will notify office employees as soon as possible what the initial contingency plan is and where staff members can meet for further information.
- Management will watch closely the legal announcements of governmental bodies. This is to ensure compliance with local and federal announced requirements.
- If travel to a facility is not possible then the emergency essential employees, contact list will be used to allow work for essential employees from their homes if necessary.

Emergency Essential Employees Contact List:

- Key Management Personnel - a contact list including home and mobile phone numbers in triple version.
- Successor Planning - “Alternates” for key positions if unavailable for an undetermined time.
- Travel Planning - No more than 2 senior management members should travel together in the same means of transportation, i.e., plane or car.
- Request clients to provide an emergency contact number in case the clients' facility is closed.
- Management will have employees’ home phone numbers (triple version) to inform them about the eventual closing of the unit.
- Client contacts – a list of clients and their emergency contact data is to be maintained.

Financial, Operational, and Business Continuity Requirements

Human Resources:

- Implement a report-to-work policy - if in doubt, in a crisis, all workers must report by phone to their supervisor for information.
- Emergency leave processing.
- Accommodations for workers where required.
- Calling staff to find out who is coming and how many hours they can make or find alternative staffing.
- Assist with records of hours worked and finding a way to get people paid.
- When public transport is down and also gas shortages at gas stations become obvious, staff transportation needs to be coordinated.

Purchasing:

- Contingency planning must identify the current stock of equipment and alternate sources.
- Minimum tank filling: all key personnel and company-owned vehicles and trucks should keep the tank at least half filled to ensure in a gas shortage crisis a minimum of travel is possible.

Money:

- Since banks are most likely closed, determine how will employees, suppliers, and contractors be paid.

IT & Computer:

- IT backup of data is required and to be maintained.
- IT system backup should be on a different power grid system or have a separate power

backup.

Sample Evacuation Planning If Required

The below areas are identified for severe weather and evacuation planning:

- Equipment that needs to be Moved/Stored/Secured from Weather within 24 Notice of Severe Weather
- Equipment Transport – What and Who
- Evacuation Plan Location & Communications
- How Will Left Behind Equipment be Secured?
    - Office doors will be locked with all reasonable and capable of being safely lifted equipment on top of desks.
- Vehicles will be locked with parking brakes on.
- Demobilization of Environmentally Sensitive Equipment (i.e., fuels, etc.)
    - Remove as many assigned vehicles as possible.
- Electronic and Written documentation
    - All electronic information is backed up.
    - Critical documents will be in the possession of the senior manager for each site.

Remobilization

The Cotton, HSE VP is the designated point of contact and will determine (in conjunction with state and federal officials) when roads, field conditions, site safety, etc. determine it is safe to return to the work site.

Internal Communication System

An internal communication system is in place. Determine the types of communications relevant to the business continuity management system, taking into consideration what will be communicated, when to communicate, with whom to communicate, how to communicate, and who will be responsible for communication. This communication system should be designed to keep internal employees informed on issues related to business continuity.

- Confirm all affected staff has evacuated.
- Once enough time has elapsed confirm all staff is at the designated Assembly Area.
- Evacuated employees are not to leave the Assembly Area or Secondary Area to maintain continual awareness of all staff.

External Clients/Customers Will Be Notified

External clients or customers will be notified in the event of a business disruption. Determine the types of communications relevant to the business continuity management system, taking into consideration what will be communicated, when to communicate, with whom to communicate, how to communicate, and who at the company will be responsible for communication. This communication system should be designed to keep internal employees informed on issues related to business continuity.

Continual Improvement

Business Continuity Plan Review

The business continuity plan is reviewed for effectiveness after a disruption occurs. A procedure for evaluating the effectiveness of its response to incidents after an exercise or incident occurs. This procedure must identify any opportunities for improvement to the business continuity management system overall or its components and the roles of the various stakeholders in ensuring the business continuity management system is in its best form possible ahead of a disruptive incident occurring.

The continuity plan is periodically reviewed to ensure continued suitability, adequacy, and effectiveness. The business continuity plan should be reviewed regularly (for example, annually) to ensure that the procedures put in place to maintain business operations are appropriate and effective.

Aerial Work Platforms

Purpose

This program has been developed to reduce the risk of physical injury or property damage in areas where Aerial Work platforms (AWP) are in operation. To ensure the safety of every employee and worker operating and/or working near operating AWPs (i.e., boom lifts, scissor lifts, bucket trucks, telescope single person-lift, and crane suspended work platforms).

Regulations

OSHA 29CFR1910.67

OSHA 29CFR1926.453

Responsibilities

Supervisors will:

- Provide an AWP program to affected employees and workers. And to ensure that all employees understand and adhere to the procedures of this plan and follow manufacturer instructions.

Employees will:

- Receive training before engaging in any lifts and follow manufacturer guidelines.

HSE Department will:

- Audit this program and make any changes to it based on changes to regulations, audits and/or incident investigation, and corrective actions.

Procedures and Requirements

General Requirements

Load limits will not be exceeded. Boom and basket load limits specified by the manufacturer will not be exceeded.

Lift controls are tested before use. Lift controls will be tested each day before use to determine that such controls are in safe working condition

Aerial lifts may only be operated by trained personnel. Only trained persons will operate an aerial lift. Training must conform to all OSHA requirements and must be applied for each type of aerial lift personnel operating. Training will occur before operating any aerial lift.

Employees will always stand firmly on the floor of the basket and will not sit or climb on the edge of the basket or use planks, ladders, or other devices for a work position. When riding on a platform both feet must be firmly positioned on the floor.

A fall arrest (or travel restraint) system must be used while working from an aerial lift, except when operating a scissor lift that has guard rails and a closing gate. A personal fall arrest or travel restraint system will be worn and attached to the boom or basket when working from an aerial lift.

Avoid operating lifts over ground personnel, and warn them not to work, walk or stand under a raised platform. Position barricades if necessary.

Do not position a ladder, or any other object, on lifts to provide additional reach.

Do not exceed rated platform weight capacity.

Do not rest the platform on piping, conduit, cable tray, or similar structures.

A minimum two-inch (2'-0") clearance must be kept between the edge of the AWP and any floor opening and/or edge of a slab drop-off.

Hazard Analysis for Aerial Lifts

Before starting any work from AWP, a JHA must be implemented. Correct equipment must be selected for the anticipated work. When selecting equipment consider the following:

- Working height (this will determine the platform height of the equipment).
- Working reaches (up and over an obstacle).
- Load limitations.
- Terrain.
- Clearance restrictions.
- Method of propulsion (gas, diesel, electric, LPG).
- Ventilation of exhaust fumes.

Precautions to avoid all known hazards in the work area will be taken by the lift operator and the supervisor.

Use of Spotters

Use of a spotter and/or backup alarm for any aerial lifts having an obstructed view will not be moved backward unless the vehicle has a reverse signal alarm audible above the surrounding noise level, and/or an observer signals it is safe to do so. Equipment must have working backup alarms, if the back alarm is not operable, a spotter must be utilized.

Working Near Electricity

Aerial lifts must remain a minimum of 10 feet away from overhead power lines. For lines rated 50 kV or below, minimum clearance between the lines and any part of the equipment or load will be at least 10 feet. An additional one (1) foot clearance is required for each additional 30,000 volts. If the aerial lift is insulated for the voltage involved, and if the work is performed by a qualified person, the clearance distance (between the uninsulated portion of the aerial lift and the power line).

Maintain a ten (10) foot clearance from any part of an electrical line or apparatus up to 50,000 volts.

Transferring from Aerial Lifts

If used for transferring to or from a structure, use extreme caution when exiting or entering the lift above the ground. (This practice should be discouraged whenever possible). The following precautions should be used:

- It is recommended to use the liftgate.
- Position the platform within one (1) foot of the structure.
- Allow for vertical movement as weight is being transferred.
- An approved dual lanyard and body harness system must be used.
- The lanyard anchor point must have a 5,000-pound minimum break strength.
- Before exiting the lift, the lanyard must be attached to an anchor point on the structure.

Aerial Lift Inspections

Perform a lift inspection, before each use, to ensure systems are functioning properly. Follow the manufactures inspection criteria. Some of the common items to inspect are, but are not limited to:

- Operating and emergency controls.
- Safety devices.
- Personal protective devices.
- Air, hydraulic, electrical, and fuel systems.
- Loose or missing parts.
- Tires, wheels, and/or tracks.
- Placards, warnings, control markings, and operating manual.
- Outriggers, stabilizers.
- Guardrail system.
- Lifts will have a "dead-man" type control that will stop all functions when released.
- All safety devices (gate latches, gate chains) must be in place before operating the lift.
- Any defects or malfunctions that affect the safety of operations will be identified and then repaired before using the lift.
- Guardrail systems are installed and access gates or opened or closed per manufacturer instructions.

Outriggers

Ensure you have adequate clearance, and all personnel is clear before deploying the outriggers and the outriggers have solid footing and level the unit. Ensure ground conditions are adequate to support the lift and mudsills may be required in soft or unstable ground.

Driving an Aerial Lift

Keep non-operating personnel at least six (6) feet away from the lift during driving operation and check clearance above, on both sides, and below the platform before moving the lift in any direction. Lower the work platform to the lowest possible level before moving the lift. The lift does not need to be lowered when moving straight forward and/or straight backward on level concrete.

Specific Requirements

Boom Lifts

- All persons occupying the work platform will wear a full body harness and lanyard.
- Inspect the lift before use.
- Do not operate lifts in a raised position when wind conditions exceed 30 MPH.
- The operator will always face the direction the platform is moving.
- Always position the boom over the rear (drive) axle in line with the direction of travel. If the boom is over the front axle the steering controls will be reversed.
- Outriggers (if equipped) must be set fully extended before raising the platform.
- Ensure there is adequate clearance for the swing of the counterweight. Confirm when turning the boom, that the counterweight section does not injure anyone or damage the surrounding structure.

Scissors lifts and telescoping single-person lifts:

- Inspect the lift before use.
- Operate on a surface within the limits specified by the manufacturer.
- All outriggers, stabilizers, or other stability-enhancing means must be used as required by the manufacturer.
- When parking, the lift ensures the platform is in its lowest position.
- Always walk a lift through a doorway. Never ride a lift when transferring it from one room to another through a doorway.
- Keep all employees, tools, and materials within the confines of the lift's toe boards. Stock lengths of conduit can overhang the end of a lift if it does not create additional hazards.

Bucket Trucks

- All persons working from the basket will wear a full body harness and lanyard.
- Inspect the unit before use.
- Ensure there is adequate clearance for the swing of the upper boom elbow.
- Confirm when turning the boom, that the upper boom elbow does not injure anyone or damage the surrounding structure.
- Operate on a surface within the limits specified by the manufacturer.
- Do not operate the bucket in a raised position when wind conditions exceed 30 MPH.
- Have an equipment inspection and dielectric test completed on the boom truck once a year or every 1,000 working hours.
- Outriggers (if equipped) must be set fully extended before raising the bucket.
- The truck will not be moved unless the boom is lowered, and the bucket is cradled.
- Riding in the bucket with the truck moving is prohibited.
- When the boom is maneuvered over a street or highway, precautions must be taken to avoid accidents with pedestrians and traffic.
- The operator will always look in the direction the bucket is moving.
- When employees are working on the same pole, in no case will they work simultaneously on energized equipment of different polarities.

Crane Suspended Work Platforms

Suspended work platforms will only be used the even conventional means of access are not feasible or present a greater hazard to the employee. The use of this type of AWP will require the following:

- Complete a Job Hazard Analysis.
- Obtain written authorization from the Cotton HSE Director.
- When the platform is in a stationary position, all brakes and locking devices will be set.
- The combined load of the platform and rigging will not exceed 50 percent of the rated capacity of the crane.
- The load line hoist drum will have a system other than a hoist brake, to regulate the hoist mechanism lowering the rate to prevent freefall.
- A boom angle and extension indicators must be visible to the operator.
- The crane must be equipped with a minimum of one anti-two-blocking device, to prevent the load block from contacting the boom tip.
- Platforms and rigging must be designed by a qualified engineer with a minimum safety factor of five.
- The platform suspension system will be designed to minimize tipping.
- Standard guardrails, mid-rails, and toe-boards will be provided.
- The platform will be equipped with an inside grab-rail.

The following should be performed before use:

- Unoccupied platform loaded to anticipate the lift weight.
- All controls and systems are functioning properly.
- There are no interferences.
- A trial lift must be made before any employee can be lifted.
- Hold a pre-lift meeting to review the lift procedures and the following safe work practices.

During use, the following should be maintained:

- If the crane is moved a new trial lift must be performed.
- Limit the number of employees on the platform to job requirements.
- Use tag lines unless they create an unsafe condition.
- Keep all body parts inside the platform.
- Secure the platform to the structure where the work is to be performed.
- Wear body harnesses and lanyards. Stay in direct communication with the operator.
- Stop all operations in any dangerous weather.

Training

Operators must be trained on the same type of equipment they will operate.

Training will consist of instruction and equipment proficiency demonstration.

Records of trained operators will be maintained by the HR Department.

To become a trained operator, one must be trained by an instructor who is competent to train on each specific piece of equipment being used.

All certificates acknowledging the completion of certified training will be kept in the HR Department.

Definitions

Aerial Device: Any vehicle-mounted device, telescoping or articulating, or both, which is used to position personnel.

Aerial Ladders: A mechanically operated long extension ladder.

Boom Lifts (Telescopic Boom Lifts): AWPs with sections that extend telescopically.

Bucket Truck: A truck equipped with an extendable, hydraulic boom carrying a large bucket for raising workers to elevated, inaccessible areas.

Guardrail System: A vertical barrier, consisting of, but not limited to, top-rails, mid-rails, and posts, erected to prevent employees from falling off a scaffold platform or walkway to lower levels.

Mudsills: The lowest sill of a structure, usually placed in or on the ground.

Outrigger: The structural member of a supported scaffold is used to increase the base width of a scaffold to provide support for and increased the stability of the scaffold.

Scissors Lifts: A motorized vehicle with a platform with guardrails that can be raised straight up.

Behavior-Based Safety

Purpose

The Cotton, Behavior Based Safety (BBS) initiative is an education and observation process used to improve safety and reduce risk in the workplace. This process uses a proactive approach and is intended to communicate to employees the elements and the procedures of Behavior Based Safety that will assist in reducing at-risk behaviors which in turn reduces injuries in our workplaces.

This procedure describes minimum requirements for providing training and qualification guidelines for the safe operation of the Behavioral Based Safety (BBS) Program. The program describes the minimum requirements for providing training and qualifications guidelines for the safe operation of the Behavioral Based Safety (BBS) Program.

Regulations

Under the General Duty Clause, Section 5(a)(1) of the Occupational Safety and Health Act of 1970, employers are required to provide their employees with a place of employment that "is free from recognized hazards that are causing or likely to cause death or serious harm to employees."

Responsibilities

Supervisor will:

- Provide the necessary training to affected employees and ensure that all employees understand and adhere to the procedures of this plan and follow the instructions of the Cotton HSE Management System.

Employee will:

- Be fully qualified and competent in the operation of the Behavioral Based Safety (BBS) Program.

HSE Department will:

- Collect data and perform trend analysis based on the information.
- Audit this program and make any changes to it based on changes to regulations, audits and/or incident investigation, and corrective actions.

Procedures and Requirements

Behavior-based safety (BBS) is a process that helps you and your coworkers identify and choose a safe behavior over an unsafe one. For BBS to work, all levels of company workers and management must work together.

BBS looks at how three things interact to improve safety person, work environment, and behavior. Three elements of the safety triad:

- **Person** - Knowledge, skills, abilities, intelligence, motives, personality, attitudes, and values.
- **Environment** - Equipment, tools, machines, housekeeping, heat/cold, engineering, materials, safety rules, and standards.
- **Behavior** - Complying, coaching, recognizing, communicating, actively caring.

Safety Awareness Principles

The safety awareness principles are the foundation of the Behavior Based Safety process. The key concepts teach employees to recognize when they may be in one of the following states:

- Rushing
- Frustration
- Fatigue
- Complacency (which can cause or contribute to these critical errors)
- Eyes not on task
- Mind not on task
- Line of fire

- Loss of balance/traction/grip (which in turn increases the risk of injury.)

Pre-task Analysis is a process to evaluate the work environment by performing a Job Hazard Analysis (HSA) for each job. The purpose of this is to eliminate or control all hazards that may be encountered to complete the job. This process is included in the Behavior Based Safety process to establish the correct habits and work procedures to reduce at-risk behaviors.

The observation process is designed to raise safety awareness and provide a feedback mechanism for management to make changes in design, process, or procedure to reduce at-risk behaviors. The key to this process is raising awareness of behavior through observation and feedback.

Conducting Observations of Employee's Work Behavior

Observations provide direct, measurable information on employee work practices identifying both safe and unsafe behaviors. The process starts with the observation of workers - fellow employees, and contractor employees as they perform their tasks. Observers collect information about worker performance and provide feedback via the observation card. The emphasis is not on who was observed but rather on what behavior was observed.

During the observation, the observer records their findings on the BBS Observation Form. Items to be observed include but are not limited to:

- Personal Protective Equipment
- Procedures / Methods
- People
- Work Environment
- Equipment

Upon completion of observation, the observer is expected to discuss with the observed to get feedback. The observer will:

- Review the observation with the observed employee.
- Start with a positive comment.
- Reinforce safe behaviors observed first.
- Describe and discuss unsafe behaviors observed.
- Solicit from observed employees an explanation of their unsafe behavior with open-ended questions.
- Re-emphasize no consequence to the observed employee.

Documenting feedback allows workers to assess what should be repeated and what should change to reduce risks in the workplace.

Collection of Data and Performing Trend Analysis

Individual departments, as well as the company as a whole, will compare these measurements and track these results by an acceptable method so that numerical and statistical comparisons can be made over time. The HSE Department will collect data and perform trend analysis based on the information.

Elements of an Action Plan After the Trend Analysis is Completed

Once trend analysis is complete, appropriate action plans should be developed to address unsafe behaviors. Action planning may include:

- Evaluate unsafe behaviors from trend analysis and prioritize
- Develop an action plan for unsafe behaviors
- Designate responsible parties and timeframes within the action plan
- Define who is responsible for action planning

Specific Roles in BBS

Each employee plays a specific role in the Behavioral Based Safety process. These roles include the person being observed, observer, supervisor, manager, and safety manager.

Person being observed

- Be willing to be observed.
- Be open and cooperative.
- Avoid being defensive.
- Participate in problem-solving meetings.
- Be familiar with the Behavior Based Safety process.

The person performing the observation

- Learn the Behavior Based Safety process and the benefits of reducing at-risk behaviors.
- Promote the Behavior Based Safety process.
- Make observing proactive.
- Be open to coaching.
- Be courteous and helpful.
- Assist workers by offering suggestions to safely perform a task or help them with a task if necessary.
- Communicate with the workers being observed.
- Give constructive feedback after observations.
- Stress the safe behaviors before the at-risk behaviors.
- Offer and work towards solutions to problems found.

Manager

- Actively promote and participate in the behavioral safety process by supporting the goals and objectives of the Behavior Based Safety process.
- Ensure that all employees are aware of what is expected of them regarding the BBS process.
- Encourage employees to participate in observations so that incidents/injuries are reduced in the workplace.
- Provide necessary resources to keep the process productive.
- Offer feedback on areas of improvement.

Supervisor

- Actively promoting and participating in the Behavior Based Safety process by reviewing BBS Observation Forms turned in at least weekly and giving feedback, completing corrective actions needed, etc.
- Refraining from using data from the Behavior Based Safety process in a punitive manner.
- Assisting in problem-solving and completing corrective actions promptly.
- Understanding the behavioral safety process and the benefits of reducing at-risk behaviors.

HSE Department

- Support the goals and objectives of the Behavior Based Safety process.
- Encourage, promote, provide technical support, and assist in acquiring the resources needed for the Behavior Based Safety process.
- Address the concerns and suggestions of field personnel.

Training

Training on the observation process will include how to conduct the observation, how to complete the observation form, what the behaviors mean, feedback training, and role play (mentoring and coaching) and employees should be aware they may be observed at any time.

Training will include:

- Program objectives.
- How to conduct the observation.
- How to complete the observation form.
- What do the behaviors mean.
- Feedback training and role play (mentoring and coaching).

- Employees should be aware they may be observed at any time.

Butadiene Awareness

Purpose:

The purpose of this program is to establish requirements for the use and handling of materials that expose employees to butadiene. This program has been developed in request to a client's requirements.

Requirements

Under the General Duty Clause, Section 5(a)(1) of the Occupational Safety and Health Act of 1970, employers are required to provide their employees with a place of employment that "is free from recognized hazards that are causing or likely to cause death or serious harm to employees."

Responsibilities

Supervisors will:

- Ensure that all employees are aware of the proper work procedures for butadiene
- Ensure that initial training is conducted for all new employees and that retraining is conducted when employee behaviors suggest that retraining is warranted.
- As part of the JSA and other hazard evaluation processes, identifies and evaluates butadiene hazards and potential exposures during the planning and the conduct of work.
- Review and approve the JHA.
- As necessary, quantitatively determines the presence of butadiene in materials, substrates, and other media. This may involve the collection of samples for analysis by a qualified laboratory or field testing using acceptable test methods.
- Provide results of any butadiene survey to management/supervision, along with information regarding hazard potential and control measures. As appropriate, makes recommendations to management/supervision to maintain, modify, upgrade, or downgrade controls accordingly.
- Take prompt corrective measures (or supports any Competent Person in this role) to eliminate hazards, such as recommending to management/supervision to implement or modify engineering, administrative, work practice, and personal protection (including respiratory protection) controls.
- Conduct periodic exposure assessments.
- As appropriate, assists management/supervision in ensuring that workers have the necessary training and medical surveillance based upon the activity and hazard.
- Evaluate butadiene hazards and specify controls for a job, (a) utilizes reliable historical exposure monitoring data generated for other similar operations or activities, (b) utilizes objective data, and/or (c) plan and conducts initial monitoring to determine exposures and assess the effectiveness of hazard controls.
- Conduct initial and periodic exposure monitoring following National Institute for Occupational Safety and Health (NIOSH)/OSHA methods if lacking historical or objective data.
- Maintain effective records of jobs monitored, so that a historical database can be used to specify controls and eliminate unnecessary and redundant monitoring for future activities.
- Support project management/supervision in responding to exposures above the PEL when workers were not adequately protected.
- As appropriate, participate in pre-job and daily worker briefings regarding task-specific butadiene hazards and controls, work practices/plans (such as JHAs), and other applicable information, including any changes that are made to controls or the work practices or plans.

Employees will:

- Follow all requirements regarding the safe work procedures for butadiene.

Procedure and Requirements

Butadiene may be present at refineries and petrochemical plants. Butadiene is used in the production of styrene-butadiene rubber and polybutadiene rubber for the tire industry. Other uses include copolymer latexes for carpet backing and paper coating, as well as resins and polymers for pipes and automobile and appliance parts. It is also used as an intermediate in the production of such chemicals

as fungicides.

Characteristics of Butadiene

Butadiene is a flammable, colorless gas with a mild, aromatic odor at room temperature and pressure. Butadiene may also exist as a cryogenic liquid. Butadiene is insoluble in water, stable, and reacts with oxidizers.

Physical Hazards

- Flammable gas
- Explosive peroxides
- Fire hazard when exposed to heat, flame, or strong oxidizers
- Release of toxic gases such as carbon monoxide during a fire

Health Hazards of Butadiene

Breathing very high levels of butadiene for a short time can cause central nervous system effects, blurred vision, nausea, fatigue, headache, decreased blood pressure and pulse rate, and unconsciousness. There are no recorded cases of accidental exposures at high levels that have caused death in humans, but this could occur. Breathing lower levels of butadiene may irritate the eyes, nose, and throat. Skin contact with liquefied butadiene can cause irritation and frostbite. Butadiene is a carcinogen.

Acute (short-term health hazards include:

- Central nervous system effects
- Blurred vision
- Nausea
- Fatigue
- Headache
- Decreased blood pressure
- Decreased pulse rate
- Unconsciousness

Chronic (long-term health hazards include:

- Cancers of the lymphohematopoietic system (carcinogen)
- Lymphoma
- Leukemia
- Potential reproductive toxicity

Exposure Monitoring

Monitoring or measuring of employee exposure will be conducted when exposure to butadiene is at or above the action level on 30 or more days a year or when exposure is at or above the PELs for 10 days or more a year or following an emergency.

Regulated Areas

Regulated areas will be established when exposure to an employee is or is expected to be over the PEL. Regulated areas will be marked with warning signs to alert employees and access is restricted to authorized persons only.

Contingency Planning

Employees are made aware of host facility evacuation, contingency, or emergency plans. Cotton should be aware of the client's contingency plan provisions. Employees must be informed where butadiene is used in the host facility and aware of additional plant safety rules.

Proper PPE for Use with Butadiene

Eye and skin protection should be worn where exposures to liquid butadiene may occur. Respirators may be required where exposures are above the permissible exposure limit and emergency respirators may be required where releases could occur. Contact lenses should not be worn when working with

this chemical.

Fire Protection

Fire extinguishers will be readily available. Fire extinguishers should be readily available in areas where butadiene is present or where butadiene may be released. Smoking will be prohibited in areas where butadiene is present or where butadiene may be released.

Training

Training should be provided on the health hazards and any use/handling requirements for butadiene at the time of initial assignment to a facility that has exposure to butadiene and annually. This training will include:

- Hazard communication training for potentially exposed employees.
- Training specified by the applicable butadiene standard.
- Respirator training if respirators are to be used.
- Provide information to workers regarding task-specific butadiene hazards and control methods, the JSA, work practices, medical surveillance, and other applicable information, including any changes that are made to these controls.
- Provide training annually, as appropriate, to workers who continue to have exposure to butadiene at or above the action level on any one day.
- All training will be recorded and include the identity of the employee trained the signature of the person who conducted the training and the date of the training.

Fit For Duty

Purpose

Cotton's full and part-time staff are expected to report for work fit for duty, which means being able to perform their job duties in a safe, appropriate, and effective manner free from the adverse effects of physical, mental, emotional, and personal problems.

Fitness for Duty Process

It is our goal to provide a safe workplace for all employees. To accomplish this goal, we have adopted the following fitness-for-duty policy guidance. Supervisors will work with the human resources department when they have a concern about an employee's fitness for duty.

Pre-Employment Testing (Physical/Medical Suitability)

Employees are physically capable of performing their job functions. Pre-employment physicals (medical exams) and physical evaluations should be part of the hiring (post-hire/pre-placement) process, and also when changing into certain job functions, transfers, and different environments or in a post-injury returning to work situation (based on the severity of the injury).

Training and Safe Work Requirements (Skills and Knowledge)

Employees must have the required skills to perform their assigned tasks. This should be done by any or all of the following for evaluation of the employee's required skills:

- Prior employment reference checks
- Certifications, licenses, or other documentation verification
- Task testing
- On-the-job monitoring
- Performance evaluations
- Training and training retention

Employees are properly trained for their assigned tasks. Employees should receive training specific to their assigned tasks. Examples might be welding, instrumentation, scaffold building, equipment operator qualifications, respirator fit test, etc. based on a training matrix that reflects the job description and/or tasks being performed. All training is to be documented.

Safe work practices and procedures must be followed. Safe work procedures should be in place before work begins. Employees will follow our and our client's safety requirements. Examples may include, hot work permits, confined space, lockout tagout, process safety management, electrical safety, operator safety, and other standard work practices, safety rules, or procedures.

Personal Medical Reporting Requirements

Employees will report all medications to their supervisor they are taking that could impair their ability to work safely. Over-the-counter medications such as allergy or cold and flu medications could also impair one's ability to perform safely and will also be reported to their supervisor. The reporting must occur before the employee arrives for work or arranges for transportation to a remote site.

Client Drug and Alcohol Testing Requirements

Drug and alcohol testing for pre-employment, post-accident, or random as prescribed by the host facility will be implemented. Procedures must include and be implemented for drug and alcohol testing as prescribed by DOT or the host client facilities.

Employee Activity and Behavior

We will monitor employee activities and behaviors to determine if employees should be removed from the work site based on our drug and alcohol program requirements. Employees' activities and behaviors will be monitored to determine if an employee should be removed from the work site if their ability to perform their duties safely is questioned.

Confidentiality

Medical Records and other related records are protected by state and federal confidentiality laws and Cotton policy. The medical record of fitness for duty examination will be maintained in the Human Resources office. Employee medical records will not be released to unauthorized personnel without the employee's written consent or subpoena following state and federal laws.

Self-Referrals

Employees are responsible for notifying their supervisor if they are fatigued to the point of not being able to perform their duties safely. Employees must be responsible for ensuring they are physically and mentally fit to perform their job functions safely. Employees must take responsibility for their safety as well as not reporting to work in a condition as to endanger the safety of their fellow workers.

Disciplinary action may occur for an employee reporting to work in a condition that could endanger their safety or the safety of any other person.

Management Referral

Management personnel is responsible for monitoring the attendance, performance, and behavior of their employees. When an employee's performance and/or behavior (including the odor of alcohol or possible use of any illegal substance) appears to be unsafe, ineffective, and/or inappropriate, it is every manager's responsibility to challenge the employee's behavior and the ability to function, remove the employee from the job, refer the employee for a Fitness for Duty exam immediately and conduct appropriate follow up.

Due to the safety issues involved, supervisors have a special responsibility to implement this policy consistently and fairly.

Procedure

When any manager or their designee observes an employee who is not performing their job safely, appropriately, and effectively, or an odor of alcohol is present, or whose behavior is inappropriate, that manager is to remove the employee from their duty immediately and call Human Resources to continue the Fitness for Duty procedure. The employee will be referred to a medical provider for a fitness for duty exam.

The Fitness for duty evaluation may include testing for chemical (e.g., alcohol and drug) levels, referral for psychiatric evaluation or any other evaluation or follow-up deemed necessary.

The manager or designee will document the reasons for the fitness for duty request by recording the employee's behavior and noting the names of any witnesses who observed that behavior. Documentation must be submitted to Human Resources by the next business day.

The employee is required to cooperate fully with the manager and medical personnel. The employee must sign consent forms for both the fitness examination and communication of its results in confidence to Human Resources. Refusal to cooperate will be considered insubordination and will be grounds for disciplinary action. The employee should be suspended pending investigation, which could result in termination.

Medical personnel will advise Human Resources if the employee is fit or not fit for duty. The medical results of the fitness for duty exam will be communicated to Human Resources.

If medical personnel determine that the employee is fit for duty, the employee must contact Human Resources on the next general business day and the manager in consultation with Human Resources will determine discipline in situations where misconduct may have occurred.

If medical personnel determine that the employee is not fit for duty:

- The manager makes every effort to arrange for safe transportation home for the employee.
- The employee must contact Human Resources, on the next general business day.
- The manager, in consultation with Human Resources, will determine discipline in situations where misconduct has occurred.

Subsequent Fitness for Duty Exams

Dependent upon the reason for the fitness exam, employees who violate this policy a second time

may be subject to progressive discipline, up to and including termination of employment.

Traffic Control

Purpose

The purpose of the program is to prescribe rules and establish minimum requirements for traffic control. When work is performed on a non-owned or operated site, the operator's program will take precedence, however, this document covers Cotton employees and contractors and will be used on owned premises or when an operator's program does not exist or is less stringent.

Responsibilities

Supervisors will:

- Ensure that all employees, and/or contractors have been trained in the procedures, equipment, and PPE associated with traffic control.

Employees will:

- Follow this program.

Procedure

Cotton will develop, in writing, and implement a traffic control plan for its workers at a worksite if any of them may be exposed to a hazard from vehicular traffic that may endanger the safety of any worker or the public. It should include the following control measures:

Pedestrians have the right-of-way. In all instances on the work site, pedestrian traffic has the right-of-way.

Always ensure the use of signs, barricades, and other control measures to protect workers from traffic hazards. Employees struck by vehicles or mobile equipment account for many work zone injuries or fatalities. Work zones should be marked by traffic control devices such as:

- Signals
- Message boards
- Cones
- Barricades
- Delineator Posts
- Flashing Lights
- Flares
- Conspicuously identified pilot vehicles
- Speed Restrictions

Traffic control personnel must wear high-visibility work vests. Workers exposed to traffic must be attired in bright, highly visible apparel. See OSHA Safety Vest Classification Table.

Provisions of Flaggers to Direct Traffic

When work activity occurs on or adjacent to a surface being used by the public, The Supervisors are responsible for providing flagger(s) to direct traffic.

Flaggers are provided with proper hand-signaling devices. Hand-signaling devices such as Stop/Slow paddles or red flags should be provided to flaggers. Oftentimes, the Stop/Slow paddle is the preferred hand-signaling device because the paddle gives road users more positive guidance than red flags, which are primarily used in emergencies.

Traffic control persons operating during hours of darkness or when there is poor visibility are provided with a reflective paddle and a flashlight fitted with a red signaling device.

A means of communication is provided when there is more than one traffic control person. When multiple traffic control persons are not working within sight of each other, an effective means of communication should be provided and used (preferably radios).

Training

All workers involved in traffic control, including flaggers, are provided training per their respective duties.

OSHA Safety Vest Classifications
ANSI Class 2 Safety Vests: These safety vests are required for workers near traffic between 25-50 mph, heavy machinery, inclement weather, and low visibility conditions. ANSI Class 2 vests are the most commonly required safety vests. You can also find ANSI class 2 jackets and t-shirts.
ANSI Class 3 Safety Vests: Class 3 vests are required for workers near traffic exceeding 50 mph and very dark or “no visibility” conditions. These traffic safety vests have longer sleeves than class 2 vests, to meet the requirements for high visibility and reflective material. In addition to vests, ANSI class 3 apparel can include safety jackets and long-sleeve shirts. Wearing an ANSI class 2 safety vest with ANSI class E-safety pants together qualifies as an ANSI class 3 outfit.

Fatigue Management

Purpose

To ensure our employees recognize the effect of fatigue as related to safely being able to perform work and to establish guidelines for work hours and equipment to reduce fatigue in our business and at our client locations. The guiding principles of fatigue management should be incorporated into the normal management functions of the business and include the following:

- Employees must be in a fit state to undertake work.
- Employees must be fit to complete work.
- Employees must take minimum periods of rest to safely perform their work.

These principles should be managed through:

- The appropriate planning of work tasks, including driving, vehicle, and equipment maintenance, loading, and unloading, and other job-related duties and processes.
- Providing appropriate equipment to help reduce stress and fatigue.
- Regular medical checkups and monitoring of health issues as required by legislation.
- The provision of appropriate sleeping accommodations where required.
- Ongoing training and awareness of employee health and fatigue issues.

Responsibilities

Supervisors will:

- Be responsible for the implementation and maintenance of this program for their site and ensuring all assets are made available for compliance with the program.

Employees in Safety Critical Positions

Employees must present in a fit state free from alcohol and drugs. Employees must not chronically use over the counter, prescription drugs and any other product which may affect an employee's ability to perform their work safely, including fatigue that sets in after the effects of the drug war off. Employees will report tiredness/fatigue and lack of mental acuity to supervision and supervisory personnel will make safety-critical decisions and take appropriate actions to prevent loss including replacement of tired employees, changing schedules, or forcing work stoppages. Employees need to be rested before starting work.

Employees need to monitor their performance and take regular periods of rest to avoid continuing work when tired.

Work Hour Limitations and Rest Breaks to Control Fatigue and Increase Mental Fitness

The following procedures limit work hours and control job rotation schedules, also known as staff/work balance, to help control worker fatigue. Supervisors may set work hour limitations and will control job rotation schedules to control fatigue, allow for sufficient sleep and increase mental fitness to control employee turnover and absenteeism.

Every Employee will have necessary work breaks to avoid fatigue. These scheduled breaks will apply to both driving and on-site hours. The following should be a minimum:

- 15 minutes each 2.5 Hours.
- 30 minutes after 5 Hours.
- 30 minutes after 10 Hours.

As guidance to manage fatigue work schedules should be examined if more than:

- 12 Hours per day.
- 24 Days Continuous.

A place to rest should be provided for workers to sit periodically and provide periodic rest breaks for personnel.

Use of Ergonomic Friendly Equipment

Ergonomic equipment will be used to improve workstation conditions such as anti-fatigue mats for standing, lift assist devices for repetitive lifting, proper lighting and control of temperature, and other

ergonomic devices as deemed appropriate.

Analysis of Work Tasks to Control Fatigue

Work tasks to control fatigue should be analyzed and evaluated periodically.

Incident Analysis

If there is an incident there will be an initial identification/assessment of the evidence. Initial identification of evidence immediately following the incident might include a listing of people, equipment, and materials involved and a recording of environmental factors such as weather, illumination, temperature, noise, ventilation, etc., and physical factors such as fatigue.

Training for Workers

Educational material should be provided on how to recognize fatigue, how to control fatigue through appropriate work and personal habits, and reporting of fatigue to supervision.

Office Safety

Purpose

To provide off safety guidelines that will assist in minimizing the likelihood of office injuries and property damage at Cotton facilities. We strive to protect our employees and workers from occupational injuries by implementing and enforcing safe work practices and appointing a competent person to manage the program.

Responsibilities

Cotton Employees will:

- Follow guidelines for office safety.

HSE Department will:

- Provide guidelines for office safety to Cotton facilities.
- Ensure that guidelines of office safety are implemented and followed.

Procedures and Requirements

General

- Use approved ladders or platforms to retrieve articles out of reach.
- Safety Data Sheets will be made available for substances and materials used in the office.
- When carrying stacks of materials, make sure vision is clear over and around the load. Look ahead while walking.
- Avoid standing in front of swinging doors and keep to the right of blind corners.
- Immediately report incidents (injury, near misses, or environmental matters) to your supervisor.

Floors

- Spilled liquids on the floor will be cleaned up immediately.
- Tripping hazards such as defective flooring, rugs, mats, etc., will be reported and corrected immediately.
- Keep paper clips, paper, rubber bands, pencils, etc. off the floor.
- Sit on chairs properly. Do not tilt any chair back on its rear legs.
- Floors must be kept clear of electrical or telephone cords.

Chairs

- Keep swivel chairs in proper adjustment.
- Close file drawers after each use.

Tables and Desks

- Do not stand on chairs or tables and try to use them as ladders or platforms.

Stairs

- Always use handrails when using stairs.

Files and Cabinets

- Always obtain assistance to move furniture and equipment.
- Open only one file drawer at a time.
- When possible, arrange filing cabinets side by side rather than stacking them.
- Do not place heavy articles on top of files or supply cabinets.
- Use handles or knobs when opening doors or drawers to avoid pinched fingers.

Electrical

- Do not overload electrical circuits.
- The maintenance department or contractor will be called for electrical repairs.

- Cords that are worn or have exposed wires will be replaced.
- Plug-in boxes or conduits should be positioned to prevent tripping.

Fire Hazards

- Keep space heaters at a safe distance from combustible materials and never leave them turned on while unattended. Lit candles are not allowed.
- Flammable materials will be kept properly stored and sealed in approved containers, with contents labeled for identification.

Training

An employee who works in an office environment will receive awareness training annually. An employee who performs housekeeping duties will receive in-depth training with refresher training every three (3) years.

Recordkeeping and Reporting

The facility will maintain workplace inspection records and employee training records on-site.

Pandemic Preparedness

Purpose

The Pandemic Influenza Response Plan guides Cotton Leadership regarding detection, response, and recovery from an influenza pandemic. The Plan describes the unique challenges posed by a pandemic that may necessitate specific leadership decisions, response actions, and communications mechanisms.

The Pandemic Influenza Response Plan outlines our overall response to a pandemic flu outbreak and our emergency preparedness and business continuity plan. It outlines specific steps Cotton takes to safeguard employees' health and well-being during a flu pandemic while ensuring Cotton's ability to maintain essential operations and continue providing essential services to customers.

Responsibility

Supervisors will:

- Provide Pandemic Influenza guidance to affected employees.
- Ensure that all employees understand and adhere to the procedures of this plan.
- Follow the instructions of the Cotton Pandemic Influenza Response Plan.

Employees will:

- Take care of themselves and if they are infected with influenza disease they need to stay home and/or seek medical attention.
- If ill employees check in with their supervisor or manager daily.
- Notify their immediate supervisor and Human Resources of any change in emergency contact information within two weeks of the change.

HSE Department will:

- Develop a comprehensive Pandemic Influenza Emergency Action Plan (EAP).

Business Continuity Planning

The operating principles in the event of a pandemic will be to keep employees safe while continuing to run the business relative to the local risk environment.

It acknowledges the significant reliance governments, customers, vendors, and stakeholders place on Cotton's ability to keep operating:

- Day-to-day operations
- Client support operations.

The objective is to enable the business to continue safely for as long as possible. However, there may come a point at which it is necessary to suspend the operations safely.

Strategies that therefore need to be considered as the situation worsens are:

- Business as usual: with remote working
- Business as usual: with minimum staffing on site
- Suspend non-critical processes, scale down critical processes
- Safe suspension of operations

Pandemic Flu

According to the U.S. Centers for Disease Control and Prevention (CDC), the Occupational Safety and Health Administration (OSHA), and other organizations that monitor public health threats, influenza or flu is caused by a variety of influenza A viruses. These viruses can cause different diseases: avian (or bird) flu, H1N1 (swine flu), pandemic influenza, and seasonal flu.

Pandemic influenza can occur when mutating flu viruses become transmissible to humans, who generally lack any natural immunity to fight off the viruses' adverse health effects. Because infected humans are so contagious, they become the primary vehicle for pandemic influenza's spread. The more humans who become contagious, the more widespread the disease becomes and the more rapid the spread.

Pandemic influenza occurs in waves, with each new group of infected people, in turn, infecting others. Each wave of infection can last eight weeks, resulting in steadily increasing numbers of infections, and the disease itself can take 12 months to 18 months to run its course through the population.

Pandemic influenza can conceivably cost billions of dollars in productivity losses resulting from absenteeism, payouts of sick leave or workers' compensation, and lost sales; disrupt transportation and communication services on which we all depend; and impede the delivery of necessary goods and services.

During the 20th century, three pandemics occurred that spread worldwide within a year. The influenza pandemic of 1918 was especially virulent, killing a large number of young, otherwise healthy adults. The pandemic caused more than 500,000 deaths in the United States and more than 40 million deaths around the world. Subsequent pandemics in 1957– 58 and 1968-69 caused far fewer fatalities in the U.S., 70,000 and 34,000 deaths respectively, but caused significant illness and death around the world.

Identification of Essential Personnel

At the beginning of flu season, Cotton will identify and designate essential personnel. The essential personnel are employees whose jobs are vitally important to Cotton's continued operation in pandemic emergencies. Cotton expects only designated essential personnel to be available for work during an influenza pandemic.

Pandemic Classification Stages

The Pandemic Response Plan establishes four stages of response to the threat of pandemic flu. The Cotton Chief Operating Officer (COO), with input from the HR Vice President, HSE Director, and Key Leaders, will designate which stage of pandemic flu emergency exists, based on available information and reports:

Stage	Definition	Example Situations
Stage 1	CDC, state, or local health department warnings of an impending threat.	Highly contagious and/or severe flu strains in the U.S. seems likely to spread within a region.
Stage 2	Pandemic flu with severe health outcomes presents in Texas (or State with projects).	Press and/or public health reports and warnings of widespread flu outbreaks in or near Texas.
Stage 3	Pandemic flu cases rising locally (Metro area or near Cotton project).	A rising number of local cases are reported. Spike in infections among staff.
Stage 4	A declaration by the Cotton COO that a pandemic flu emergency exists for the operations.	Threat or existence of a rising number of flu infections among employees (office or on projects). Absenteeism rates inhibit the conduct of normal business.

Essential personnel might become ill and unavailable to work or not be able to reach the facilities or worksites because of conditions beyond their own or our control.

The most essential personnel will be equipped with all the resources necessary to work remotely including computers, cell phones, and other necessary equipment that essential employees need to work remotely during emergencies.

Remote Work Locations

During an influenza pandemic, local, state, or federal authorities might prohibit or severely curtail individuals' access to and use of public services and public transportation.

- Close or prevent access to buildings or public highways.
- Isolate or quarantine buildings' occupants.

- Prevent inter-or intrastate delivery of goods and services.

Preparation should include working “bare bones” operations at remote work locations, including essential employees’ home offices. All the remote work locations have all the equipment necessary for off-site telecommuting operations.

Infection-Control Measures

Steps should be taken to minimize the extent of practicable exposure to and spread of infection in the workplace, which is an ideal site for contagion because of workers’ proximity to one another.

- Ill employees who contract the flu or have been exposed to an infected family member or others with whom employees have been in contact to stay home and seek medical attention. Cotton expects such workers to notify their manager as soon as possible of exposure or illness.
- Vaccinations may be essential for personnel to maintain up-to-date vaccinations and to obtain annual flu shots.
- Employee Training for all employees who are at risk of exposure to flu viruses, both in and outside the workplace may require all employees to attend training to become informed about what to do when a flu outbreak occurs.

Personal Protection Equipment.

Adequate supplies of recommended personal protection equipment, such as face masks, eye protection, rubber gloves, and anti-bacterial hand gels and wipes.

Employees should speak with their physician (e.g., annual physical) and maintain personal-protection equipment in their home.

Employee Leave and Pay

In the event of pandemic influenza (Stage 4) Cotton leadership will evaluate granting non-essential personnel administrative leave. The HR department will monitor emergency conditions daily to determine how long administrative leave must continue and, following consultation with outside authorities, advises employees on when to expect to return to work.

Family and Medical Leave

If applicable, employees may be placed on family medical leave for any workers who fall ill with flu or must be absent from work to care for an infected family member. Cotton requires such employees to notify their manager as soon as possible of the need for family and medical leave.

Business Travel.

All reasonable efforts to eliminate the need for travel by taking advantage of technology that allow us to communicate or otherwise operate electronically. Generally, in the event of an influenza pandemic (Stage 4), travel on Cotton’s behalf is suspended and limited to a group of essential personnel who have obtained required travel authorization from the Cotton COO or Division President, and, if necessary, outside authorities.

Communication with Outside Authorities.

The COO, or designated alternate, and HSE Director will partner with local, state, and federal emergency response and health agencies to ensure legal compliance with emergency response protocols. The objective is to coordinate efforts to maintain safety and security in and outside the workplace.

Action Escalation

Key Leaders and HSE Management Team, which are responsible for ensuring our company’s ability to continue operating in emergencies, have devised a system under which essential personnel can be directed to take specific actions at a specific time base on a series of alerts (“Warning”, for example, or “Full Shutdown”) that considers the seriousness of condition at hand.

Cotton Watch

The remote emergency response call center is activated in the early stages of a U.S. CDC-confirmed flu outbreak (Stages 3 & 4).

Pandemic Flu Resources List

A list of the names, telephone numbers, and addresses of key representatives and designated essential personnel who are available to coordinate pandemic response operations.

Employee Assistance Program Services

An employee assistance program (EAP) services remain available to you to the extent practicable and reasonable during an influenza outbreak.

Definitions

Antiviral Medication: A medication that may prevent or inhibit the growth and reproduction of viruses and is used to treat or prevent disease in those exposed or at risk of exposure.

Avian Influenza (Bird Flu): Known as the bird flu, is caused by type A Influenza viruses that infect wild birds and domestic poultry. Some forms of avian influenza are worse than others. Avian Influenza viruses are generally divided into two groups: low pathogenic avian influenza and highly pathogenic Avian Influenza. Low pathogenic avian influenza naturally occurs in wild birds and can spread to domestic birds. In most cases, it causes no signs of infection or only minor symptoms in birds. In general, these low pathogenic strains of the virus pose little threat to human health. Low pathogenic avian influenza virus H5 and H7 strains have the potential to mutate into highly pathogenic avian influenza and are, therefore, closely monitored. Highly pathogenic avian influenza spreads rapidly and has a high death rate in birds. Highly pathogenic avian influenza of the H5N1 strain is rapidly spreading in birds in some parts of the world.

Catastrophic Incident. For purposes, the National Response Plan (NRP), describes any natural or manmade occurrence that results in extraordinary levels of mass casualties, property damage, or disruptions that severely affect the population, infrastructure, environment, economy, national morale, and/or government functions. An occurrence of this magnitude would result in sustained, national impacts over a prolonged period and would immediately overwhelm local and state capabilities.

Control Measures: Actions necessary to prevent and control the spread of communicable disease include but are not limited to immunization, detection, detention, restriction, disinfection, decontamination, isolation, quarantine, chemoprophylaxis, preventive therapy, prevention, and education.

Health Authority: A physician designated to administer state and local laws relating to public health under the Local Public Health Reorganization Act, Health and Safety Code, Chapter 121. A local health authority has considerable power that allows the health authority to investigate suspected incidents and outbreaks of communicable disease, and to initiate control measures as indicated. Establishing, maintaining, and enforcing quarantine in the health authority's jurisdiction is one of the local health authority's explicit legal duties.

Isolation: The separation and restriction of movement of people with a specific communicable disease to contain the spread of the disease. People in isolation may be cared for in their homes, hospitals, designated health care facilities, or other dedicated facilities.

Outbreak: A sudden increase in the number of cases of a specific disease or clinical symptoms.

Pandemic Influenza: A worldwide outbreak of a novel (newly emerged) influenza virus causing sudden, pervasive illness that can severely affect even otherwise healthy individuals in all age groups. Pandemic influenza occurs infrequently and at irregular intervals and has the potential for substantial impact resulting in increased morbidity and mortality, significant social disruption, and severe economic costs. To assist in international planning and response activities, the World Health Organization has defined periods and phases of pandemic influenza.

Quarantine. Separation and restriction of movement of well people who may have been exposed to

an infectious agent and may be infected but are not yet ill. Quarantine usually occurs in the home but can be in a dedicated facility or hospital. The term quarantine also can be applied to restrictions of movement into or out of buildings, other structures, and public conveyances. In addition, specific areas or communities may be quarantined. The Centers for Disease Control and Prevention (CDC) also is empowered to detain, medically examine, or conditionally release people suspected of carrying certain communicable diseases at points of arrival in, and departure from, the United States (U.S.) or across state lines.

Seasonal Influenza. Or "flu" refers to periodic outbreaks of acute onset viral respiratory infection caused by circulating strains of human influenza A and B viruses. Seasonal "flu" is the kind of influenza with which healthcare workers and the public are most familiar. In temperate regions of the world, seasonal influenza generally occurs most frequently during the winter months when the humidity and outdoor temperatures are low (generally from December until April in northern temperature regions).

Strategic National Stockpile (SNS): National repository of antibiotics, chemical antidotes, antitoxins, antiviral medications, vaccines, life-support medications, intravenous administration, and airway maintenance supplies, and medical or surgical material for use in a declared biological or chemical terrorism incident or another major public health emergency.

Surveillance: Systematic collection, analysis, interpretation, and dissemination of data regarding a health event for use in response to actions to reduce morbidity and mortality. The objective of surveillance is to effectively guide action efforts locally, statewide, nationally, and internationally.

Viral Shedding: The expelling of virus particles from the body. Virus shedding is an important means of disease transmission.

Wave: A period, usually six-to-eight weeks, characterized by the beginning of illness in a population, escalating of illness over time to a maximum number of people infected, then slowing infection rates. A wave is followed by a period of normalcy. Pandemic influenza is expected to have two-three waves.

Process Safety Management Contractor Responsibilities

Purpose

The purpose of Process Safety Management (PSM) is to prevent or minimize the consequences of catastrophic releases of toxic, reactive, flammable, or explosive chemicals in various industries such as refineries, etc.

Companies performing work in PSM facilities are required to recognize and participate as contract employers at client locations with PSM Programs in place. Cotton as a prospective contractor has certain obligations to fulfill and comply with the Client's established PSM programs. Contract employer responsibilities are as follows:

- Train all employees necessary to perform their job. Each contract employee must be trained in the work practices necessary to perform his/her job.
- Employees will be instructed on the hazards related to their jobs and potential fire, explosive, or toxic release hazards. Each contract employee must be instructed on the known potential fire, explosion, or toxic release hazards related to his/her job and the process, and the applicable provisions of the emergency action plan. Training will be documented. Records that contain the identity of the contract employee, the date of training, and the means used to verify that the employee understood the training must be maintained.
- Advise the employer (host facility/client) of any hazards found or unique hazards presented by Cotton work.
- Trade secret information must be kept confidential. All contract employers must respect the confidentiality of trade secret information when the process safety information is released to them.
- The hiring client's safe work practices must be followed during operation such as lockout/tagout, confined space entry, opening process equipment or piping, and control over entrance to the facility. Cotton employees will abide by the hiring client's safe work practices during operations such as lockout/tagout, confined space entry, opening process equipment or piping, and controls over the entrance to the facility.

Incidents and Near Misses Must be Immediately Reported

Cotton employees must immediately report all accidents, injuries, and near misses. An incident investigation must be initiated within 48 hours. Resolutions and corrective actions must be documented and maintained for 5 years by the Client facility.

Process Safety Management Program

Cotton employees will participate in all as-directed client PSM requirements, including:

Employee Participation
Process Safety Information (PSI)
Process Hazards Analysis (PHA)
Operating Procedures
Training /Employee Evaluation
Contractor's Pre-Startup Safety Review
Mechanical Integrity
Hot Work Permits
Management of Change (MOC)
Incident Investigation
Emergency Planning and Response
Compliance Audits
Trade Secrets

Employee Participation

Employees who are assigned to PSM facilities will be trained in this PSM program before they are exposed to any occupational hazard. Cotton will consult with employees and their representatives on the conduct and development of process hazard analyses and on the development of the other elements of process safety management. They will provide employees and their representative's access to process hazard analyses and all other information required.

Process Hazards Analysis (PHA)

As Cotton does not own any PSM facility the host facility/client must provide us with the required information.

Operating Procedures

As Cotton does not own any PSM facility host facility/client will develop and implement written operating procedures that provide clear instructions for safely conducting activities involved in each covered process consistent with the process safety information. That information is to be given to Cotton for the training of our employees.

Training

Employees will be instructed on the hazards related to their jobs and potential fire, explosive, or toxic release hazards for this program.

Contractors

Cotton will:

- When selecting a contractor, obtain and evaluate information regarding the contract employer's safety performance and programs.
- Inform contract employers of the known potential fire, explosion, or toxic release hazards related to the contractor's work and the process.
- Explain to contract employers the applicable provisions of the emergency action plan.
- Develop and implement safe work practices to control the entrance, presence, and exit of contract employers and contract employees in covered process areas.
- Periodically evaluate the performance of contract employers in fulfilling their obligations.
- Maintain a contract employee injury and illness log related to the contractor's work in process areas.

Pre-Startup Safety Review

The host facility/client will perform a pre-startup safety review for new facilities and modified facilities when the modification is significant enough to require a change in the process safety information. That information is to be passed to COMPANY so we can train our employees.

Mechanical Integrity

Periodic, documented inspections are required for several systems, including:

- Pressure vessels
- Storage tanks
- Piping systems
- Ventilation systems

If Cotton conducts these inspections our host facility/client will provide inspection requirements and our employees must not only be officially trained, but the testing procedures must also follow recognized and generally accepted good engineering practices.

Hot Work Permits

The host facility/client will issue a hot work permit for hot work operations conducted on or near a covered process. The permit will document that fire prevention and protection requirements have been implemented before beginning the hot work operations. It will indicate the date(s) authorized for hot work and identify the object on which hot work is to be performed. The permit will be kept on file until the completion of the hot work operations. Cotton will retain a copy of any hot work permit for work it performs.

Management of Change

The host facility/client will establish and implement written procedures to manage changes (except for "replacements in kind") to process chemicals, technology, equipment, and procedures; and changes to facilities that affect a covered process. Cotton will be informed of any management of change so we can inform and train our employees.

Incident Investigation

Cotton employees must immediately report all accidents, injuries, and near misses. An incident investigation must be initiated within 48 hours. Resolutions and corrective actions must be documented and maintained for 5 years by the host facility.

Emergency Planning and Response

The host facility/client will establish and implement an emergency action plan for the entire plant. In addition, the emergency action plan will include procedures for handling small releases. This emergency action plan will be provided to Cotton so we can inform and train our employees.

Compliance Audits

Owners of PSM facilities will certify that they have evaluated compliance at least every three years to verify that the procedures and practices developed are adequate and are being followed. The compliance audit will be conducted by at least one person knowledgeable in the process. A report of the findings of the audit will be provided to Cotton upon request. The owner of PSM facilities will promptly determine and document an appropriate response to each of the findings of the compliance audit, and document that deficiencies have been corrected.

Trade Secrets

Trade secret information must be kept confidential. All contract employers must respect the confidentiality of trade secret information when the process safety information is released to them.

Silica Exposure Control Plan

Purpose

The purpose of the silica exposure control plan (ECP) is to set out our approach to protecting workers from harmful exposure to respirable crystalline silica. A combination of control measures will be required to achieve this objective. We commit to being diligent in our efforts to select the most effective control technologies available and to ensure that the best practices, as described in this Exposure Control Plan (ECP), are followed at our worksites.

Responsibilities

Supervisors will:

- Provide the necessary training to affected employees and ensure that all employees understand and adhere to the procedures of this plan if there is a potential for silica exposure.
- Obtaining a copy of the ECP from the Client and making it available at the worksite. If one is not available, then contact the HSE Department for guidance.
- Selecting, implementing, and documenting the appropriate site-specific control measures. Refer to SDS for the material that is being disturbed.
- Providing adequate instruction to workers on the hazards of working with silica-containing materials (e.g., concrete) and on the precautions specified in the job-specific plan covering hazards at the location.
- Ensuring that workers are using the proper respirators and have been fit-tested and that the results are recorded.
- Directing the work in a manner that ensures the risk to workers is minimized and adequately controlled.

Employees will:

- Know the hazards of silica dust exposure.
- Use the assigned protective equipment in an effective and safe manner
- Set up the operation following the site-specific plan
- Follow established work procedures as directed by the supervisor
- Report any unsafe conditions or acts to the supervisor
- Know how and when to report exposure incidents

HSE Department will:

- Develop a silica exposure plan for employees for affected sites.
- Audit this program and make any changes to it based on changes to regulations, audits and/or incident investigation, and corrective actions.

Regulations

OSHA Standard 29CFR1926.1153

Procedures and Requirements

General Requirements

OSHA Standard 29CFR1926.1153, Requires Cotton to:

- Assess employee exposures to silica if it may be at or above an action level of 25µg/m3 (micrograms of silica per cubic meter of air, averaged over an 8-hour day).
- Protect workers from respirable crystalline silica exposures above the permissible exposure limit (PEL) of 50 µg/m3, averaged over an 8-hour day.
- Limit workers' access to areas where they could be exposed above the PEL.
- Use dust controls to protect workers from silica exposures above the PEL.

Cotton will provide respirators to workers when dust controls cannot limit exposures to the PEL and use housekeeping methods that do not create airborne dust, if feasible.

Crystalline Silica Properties

Crystalline silica is a common mineral found in many naturally occurring materials and used in many

industrial products and at construction sites. Materials like sand, concrete, stone, and mortar contain crystalline silica. Crystalline silica is also used to make products such as glass, pottery, ceramics, bricks, concrete, and artificial stone. Industrial sand used in certain operations, such as foundry work and hydraulic fracturing (fracking), is also a source of crystalline silica exposure. Amorphous silica, such as silica gel, is not crystalline silica.

Inhaling very small ("respirable") crystalline silica particles, causes multiple diseases, including silicosis, an incurable lung disease that can lead to disability and death. Respirable crystalline silica also causes lung cancer, chronic obstructive pulmonary disease (COPD), and kidney disease.

Visible and Respirable Dust

Visible dust contains large particles that are easy to see. Respirable dust particles pose the greatest risk because they are not visible. They are so small they can get into the deep lung. When exposed to silica dust, it is important to remember the following:

- Most dust-generating construction activities produce a mixture of visible and respirable particles.
- You should use visible dust as a general guide for improving dust suppression efforts. If you see visible dust being generated, emissions of respirable silica are probably too high.
- Methods that control tool-generated dust at the source can reduce all types of particle emissions, including respirable particles.
- Do not rely only on visible dust to assess the extent of the silica hazard. There may be more airborne respirable dust present that is not visible to the naked eye.

Exposure Assessments

Exposure assessments must be conducted for those employees who are expected to be exposed to respirable crystalline silica at or above the action level. The exposure of each employee who is or is expected to be exposed to respirable crystalline silica at or above the action level (8-hour TWA of 25µg/m³) must be assessed. This assessment can be performed by monitoring employees individually or taking a representative sample from employees.

The key step in developing a silica exposure control plan is to identify the work activities that would put workers at risk of exposure.

- **Work activities** — that may generate airborne silica dust—for silica, the route of exposure is through the inhalation of airborne dust. The employer should have a qualified person review the planned work activities to identify those that may generate airborne silica.
- **Identify workers at risk of exposure**—For example, workers who finish concrete would be at greater risk of exposure than plumbers or electrical workers.
- **Amount of exposure**—some work activities generate more dust than others, and the amount of exposure should be estimated. Published resources are available that provide air sampling data and compare silica dust levels from various construction activities.
- **Duration of exposure**—Workers who grind concrete for a full shift would be at greater risk than workers jackhammering for an hour.

Written Exposure Control Plan (ECP)

Should Cotton ever have a harmful exposure to respirable crystalline silica the following should be implemented. The first step, and a very important OSHA requirement, in making sure exposure to silica dust is controlled is to design, develop, and deploy an effective Exposure Control Plan (ECP).

The components of an effective ECP should include at least the following elements:

- A description of the tasks in the workplace that involve exposure to respirable crystalline silica.
- A description of the engineering controls, work practices, and respiratory protection used to limit employee exposure to respirable crystalline silica for each task.
- A description of the housekeeping measures used to limit employee exposure to respirable crystalline silica.
- A description of the procedures used to restrict access to work areas, when necessary, to minimize the number of employees exposed to respirable crystalline silica and their level of

exposure, including exposures generated by other employers or sole proprietors.

- The employer should review and evaluate the effectiveness of the written exposure control plan at least annually and update it, as necessary.
- The employer should make the written exposure control plan readily available to each employee and their designated representatives.
- The employer should designate a competent person to make frequent and regular inspections of job sites, materials, and equipment to implement the written exposure control plan.

Exposure Control Plan (ECP) Evaluation

It is important to conduct regular inspections in general industry workplaces and construction worksites for silica dust exposures, and evaluations of the ECP. To help ensure an effective ECP and positive OSHA enforcement inspections, be sure to check and evaluate the areas.

Exposure to Silica Dust

About two million construction workers are exposed to respirable crystalline silica in workplaces during common construction tasks, such as using:

- Masonry saws, grinders, drills, jackhammers, and handheld powered chipping tools.
- Operating vehicle-mounted drilling rigs.
- Milling, operating crushing machines.
- Using heavy equipment for demolition or certain other tasks.
- During abrasive blasting and tunneling operations.
- Road construction
- Loading, hauling, and dumping gravel
- Demolition of structures containing concrete
- Sweeping concrete dust

Construction employees who inhale fine particles of silica may be at risk of developing silicosis. The small particles easily become suspended in the air and, when inhaled, penetrate deep into employees' lungs.

Although the primary effect of overexposure to silica dust is silicosis, let us not forget employees may also suffer from lung, stomach, and other cancers, tuberculosis, a chronic obstructive pulmonary disorder, immune system effects, and kidney effects. The only way to prevent disease is to eliminate exposure to crystalline silica or reduce crystalline silica exposure to safe levels.

Silicosis

There are three types of silicosis, depending upon the airborne concentration of crystalline silica to which a worker has been exposed:

- **Chronic (Classic) Silicosis**. The most common form of the disease occurs after 15-20 years of moderate to low exposures to respirable crystalline silica. Symptoms associated with chronic silicosis may or may not be obvious; therefore, workers need to have a chest x-ray to determine if there is lung damage. As the disease progresses, the worker may experience shortness of breath upon exercising and have clinical signs of poor oxygen/carbon dioxide exchange. In the later stages, the worker may experience fatigue, extreme shortness of breath, chest pain, or respiratory failure.
- **Accelerated Silicosis**. Can occur after 5-10 years of high exposure to respirable crystalline silica. Symptoms include severe shortness of breath, weakness, and weight loss. The onset of symptoms takes longer than in acute silicosis.
- **Acute Silicosis**. Occurs after a few months or two years following exposures to extremely high concentrations of respirable crystalline silica. Symptoms of acute silicosis include severe disabling shortness of breath, weakness, and weight loss, which often leads to death.

Symptoms of Exposure

Chronic silicosis may go undetected for years in the early stages; in fact, a chest x-ray may not reveal an abnormality until after 10 or 20 years of exposure. The body's ability to fight infections may be

overwhelmed by silica dust in the lungs, making workers more susceptible to certain illnesses, such as tuberculosis. As silicosis progresses, you may exhibit one or more of the following symptoms:

- Shortness of breath following physical exertion.
- Severe cough.
- Fatigue.
- Loss of appetite.
- Chest pains.
- Fever.

Measuring Airborne Silica

If it is known or suspected silica is being used and it may be in the air, the next step is to determine how much is there. To do that, sample the air during the work being conducted.

Collecting an Air Sample. A trained specialist, such as a certified industrial hygienist, will use a combination device called a cyclone assembly and a sampling pump to trap tiny respirable silica particles from the air in the work environment.

- The cyclone assembly and sampling pump will be placed on an employee, who will wear the device throughout the work shift for up to 8-hours.
- All employees may be fitted with the sampling device or just a select few who are closest to the silica source may be fitted. The industrial hygienist can help you determine what will be most appropriate.
- The hygienist will return at the end of the sampling period to deactivate the sampling pump and remove the filters to be sent for analysis.

Laboratory Analysis. After collecting the air sample, the next task is to select a competent laboratory that does quality analysis work. This is critical to determining compliance with the OSHA crystalline silica standard. The work in monitoring exposure is wasted if samples are mishandled or analyzed incorrectly.

Permissible Exposure Limit (PEL)

The employer should make sure no employee is exposed to an airborne concentration of respirable crystalline silica of more than 50 micrograms per cubic meter (µg/m3), calculated as an 8-hour Time Weighted Average (TWA). In other words, the average exposure to silica dust should not exceed 50 µg/m3 during the full work shift.

Silica Dust Control Strategies

Controlling the exposure to silica in construction can be done by applying engineering controls, administrative actions, and personal protective equipment (PPE), like practices in other industries.

Hierarchy of Control Measures

The following hierarchy of control measures must be followed:

- Elimination/substitution
- Engineering controls
- Administrative controls
- The use of proper PPE

Elimination/substitution

Elimination/substitution (e.g., using products with less silica or using work methods that would eliminate the need for surface grinding)

Engineering Controls

Engineering controls include strategies that eliminate or reduce the hazard (silica dust) itself. Treating material so it does not create dust, replacing silica with another material, isolating, containment, and using ventilation systems.

There are two basic types of engineering control methods they are the wet method and the dry method.

- The wet method for cutting, drilling, hammering, and grinding is the most effective method for controlling airborne silica dust.
- In the dry method, the most common control method is vacuum dust collection (VDC). This engineering control method can significantly reduce silica levels but may not reliably keep them below 0.1 mg/m3 as an 8-hour TWA. VDCSs include a dust collector (hood or shroud), vacuum, hose, and filter(s).

Dust suppression is a wet dust control method that can be applied to many different operations, such as materials handling, rock crushing, abrasive blasting, and the operation of heavy construction vehicles.

- **Pre-Wetting Surfaces**. When blasting, a separate water hose can be strung next to the hose containing the blasting medium. When using heavy construction vehicles on unpaved surfaces, a water truck can spray the site grounds.
- **Fogging Methods**. Fog, fine particles of water, can be an effective dust suppressant in certain situations because it provides a larger contact area than water sprays. Fog is most effective when the water droplets are approximately the same size in diameter as the dust particles to be suppressed. The dust particles stick to the water droplets. The added weight prevents the particles from remaining suspended in the air.
- **Steam Method**. Steam is the gaseous state of water. Like fog, steam can reach a larger contact area than sprayed water. Also, like fog, steam can visually restrict operations and condense on surfaces.
- **Electrostatic Charging**. Particles from most industrial dust clouds possess either a positive or negative charge. Electrostatic water sprays may enhance dust removal by attracting oppositely charged dust particles to the charged water droplets.
- **Surfactants and Other Soil-Binding Materials**. A surfactant is a highly concentrated soap or detergent that can be added to water to help control dust. Surfactants are often referred to as "wetting agents". Surfactants break the surface tension of water, allowing the water to penetrate deeper, to better saturate the dust particles and slow evaporation. When using surfactants on a ground surface (soil), the surface stays moist longer and fewer water applications are needed.
- **Organic Resin Emulsions**. Organic resin emulsions are natural resins, emulsified in liquid form such as pine tree sap. They bind and adhere to dust particles as they cure and create a surface crust.

Administrative Actions

Administrative action and work practice controls include limiting workers' exposure time and providing showers.

Isolation, Containment, and Ventilation

- Isolation can be used to isolate or increase the distance between the employee and the point of work and can reduce exposure levels.
- Employee positioning can reduce exposure if the employee works from a position that minimizes exposure. For instance, greater distance from the grinding point, especially when grinding on ceilings and sanding drywall when the dust can fall directly on the employee.
- Exhaust ventilation systems in containment structures can be effective in capturing and removing silica dust.
- A ventilation booth with a fan erected around a saw can help reduce dust.
- Fans are not effective dust control devices when used as the sole control method and should not be used as the primary method for managing dust. However, they can be useful as a supplement to other control methods such as bathrooms, where dust would build up due to poor air circulation.
- Vacuums offer a versatile option for collecting dry debris from smooth and uneven surfaces cracks, expansion joints, and irregular shapes. Wet/dry vacuums can also collect water, slurry, and damp materials. Use pneumatic vacuums where electricity is not available.
- Signage or barricades to keep personnel out of areas with potential exposure. When barriers

or enclosures are used in our work the site supervisor will determine the type and design of the barrier or enclosure (based on the work activity and the work area) and ensure it is constructed following the work plan. Barriers may be simple hazard-flagging ribbons or more restrictive barriers.

PPE

Use of personal protective equipment (PPE) includes wearing proper respiratory protection and protective clothing.

When required, respirators must be provided to employees that are exposed to respirable crystalline silica. Respirators must be selected based on measured exposure levels and the assigned protection factor of respirators. Only approved respirators will be used.

Documentation

Records must be kept of the following:

- All workers who are exposed to respirable silica dust while on the job
- Worker education and training sessions
- Respirator fit testing
- Equipment maintenance and repair
- Worksite inspections
- Medical surveillance when required
-

Annual Assessment of the Written Program's Effectiveness

The written exposure control plan must be evaluated at least once per year and as necessary. Situations, where reevaluation may be necessary, include regulatory updates, changes in equipment, and exposure incidents. Any changes resulting from this process must be communicated to affected employees.

Medical Surveillance

A medical surveillance program for all employees whose exposure is equal to or exceeds the action level for 30 or more days per year is required. A medical surveillance program must be established for employees who are exposed to the action level of 8-hour TWA of 25µg/m³ of respirable crystalline silica. A baseline medical assessment must be available to exposed employees within 30 days of initial assignment unless they have previously received a suitable medical examination in the past three years. This applies to employees who would be required to wear a respirator more than 30 days per year or who are exposed to action-level respirable crystalline silica for more than 30 days per year. A suitable prescreen that meets the same requirements is also acceptable.

Cotton Commercial will provide the needed medical surveillance at no expense to the employee. The employee needs to go to a qualified health care professional, have an exam, and obtain a written medical opinion which is shared with the HR Department. This written opinion needs to contain:

- The date of the exam
- A statement that the exam has specifically checked for silica exposure per the requirements of the standard.
- Any recommended limitations on the employee's exposure to respirable crystalline silica as a result of the exam's findings

The exam conducted by the qualified healthcare provider must include the following:

- A review of the patient's medical and work history.
- A physical examination with special emphasis on the respiratory system.
- A chest x-ray.
- A pulmonary function test is administered by certified spirometry.
- Testing for latent tuberculosis.
- Any other tests deemed appropriate by the healthcare provider.

Applicable Records

- Applicable records (e.g., air sampling, medical surveillance) must be kept. Accurate records of all air

monitoring data, objective data, and medical surveillance will be maintained as required by the regulation.

Training

All employees who are exposed to action level respirable crystalline silica at or above the action level (8-hour TWA of 25µg/m³) must be provided with the training. The training will ensure that employees covered by the written exposure control plan can demonstrate knowledge and understanding of the health hazards associated with respirable crystalline silica, the specific tasks in the workplace that could result in exposure to respirable crystalline silica, the specific measures taken to protect employees from exposure to crystalline silica, the contents of the respirable crystalline silica rule, and the purpose of the medical surveillance program.

Definitions

Action Level. OSHA requires construction employers to "take action" to any exposures to respirable crystalline silica where employee exposure may reach or exceed the Action Level which is 25 µg/m3 as an 8-hour TWA under any foreseeable conditions.

Cristobalite and Tridymite. Are natural constituents of some volcanic rocks. Cristobalite is also found in the superficial layers of refractory brick that have repeatedly been subjected to contact with molten metal.

Crystalline Silica. Is a common mineral such as sand, stone, concrete, brick, and mortar. Other construction materials are asphalt filler, roofing granules, plastic composites, soils, and to a lesser extent, some wallboard joint compounds, paint, plaster, caulking, and putty.

Permissible Exposure Limit (PEL). OSHA regulates silica exposure using the permissible exposure limit, which is the maximum amount of airborne dust an employee may be exposed to during a full work shift.

Quartz. The present is many materials in the construction industry, such as brick and mortar, concrete, slate, dimensional stone (granite, sandstone), stone aggregate, tile, and sand used for blasting.

Silica Dust. Can be generated as ceramics, concrete, masonry, rock, and sand are mixed, blasted, chipped, cut, crushed, drilled, dumped, ground, mixed, or driven upon.

Compressed Air

Purpose

This program applies to compressed air receivers, and other equipment used in providing and utilizing compressed air for performing operations such as cleaning, drilling, hoisting, and chipping. On the other hand, however, this section does not deal with the special problems created by using compressed air to convey materials nor the problems created when personnel are working in compressed air as in tunnels and caissons.

This program covers all employees and contractors who handle, transport, and/or use compressed gas cylinders.

References

OSHA 29 CFR 1910.169

OSHA 29 CFR 1926.803

OSHA 29 CFR 1910.101

Responsibility

Supervisors will:

- Ensure that all employees are aware of the proper handling, storage, and use requirements for compressed air cylinders.
- Ensure that initial training is conducted for all new employees and that retraining is conducted when employee behaviors suggest that retraining is warranted.

Employees will:

- Follow all requirements regarding the safe use of compressed air.
- Not use compressed air for cleaning unless the pressure is reduced to less than 30 psi

HSE will:

- Audit this program and make any changes to it based on changes to regulations, audits and/or incident investigation, and corrective actions.

Procedures/Requirements

Air Compressors Installation and Equipment Requirements

Air receivers are to be installed with all drains, handholds, and manholes in a position so that they are easily accessible.

The air receiver is not to be buried underground or located in an inaccessible place which would make it difficult to inspect or perform maintenance.

The equipment will be inspected weekly to ensure there or no leaks, or excessive water in the air receiver and that pressure gauges and safety valves are not blocked or damaged. Refer to the manufacturer's guidance for frequency and recommended inspection criteria.

Using Compressed Air for Cleaning

Compressed air will not be used for cleaning purposes except where the pressure is reduced to less than 30psi and effective chip guarding and personal protective equipment are implemented.

Air Receivers and Indicating Pressure Gauge

Every air receiver will be equipped with:

- An indicating pressure gauge.
- An easily visible gauge.
- One or more spring-loaded safety valves.
- Safety valves that can prevent the receiver from exceeding the maximum allowable working pressure by no more than 10 percent.

- No valve of any type is placed between the air receiver and its safety valves.

Testing Safety Valves

All safety valves will be tested frequently and at regular intervals to determine whether they are in good operating condition. Refer to the manufacturer's recommendation on testing. Safety valves, indicating/controlling devices, and other safety appliances need to be constructed, located, and installed so they cannot be rendered inoperative by any means.

Frequent Draining of the Receiver

The drain valve on air receivers will be opened and the receiver completely drained frequently and at such intervals as to prevent the accumulation of excessive amounts of liquid in the receiver. The drainpipe and valve will be installed at the lowest point of every air receiver to provide for the removal of accumulated oil and water. Adequate automatic traps may be installed in addition to drain valves as long as it prevents the accumulation of excessive amounts of liquid in the receiver.

Pressure Cylinders
General Requirements

Mixtures of fuel gases and air or oxygen may be explosive, and every precaution will be taken to ensure that this does not happen. No device or attachment is allowed that permits mixtures of air or oxygen with flammable gases before use, except at the burner or in a standard torch.

Pressure cylinders are not allowed to exceed 15 psi when generated, piped, or utilized.

All portable cylinders used for the storage and shipment of compressed gases will be constructed and maintained per the regulations of the U.S. Department of Transportation, 49 CFR parts 171-179.

All compressed gas cylinders will be legibly marked, to identify the gas content, with either the chemical or the trade name of the gas. Such marking will be through stenciling, stamping, or labeling, and will not be readily removable. Whenever practical, the marking will be located on the shoulder of the cylinder.

Handling

Valve caps must be secured onto each cylinder before moving or storage. The preferred means to move compressed air cylinders is with a cart, carrier, or with the assistance of someone else. Slings, ropes, or electromagnets are prohibited to be used for lifting compressed air cylinders.

Cylinders will be kept away from radiators and other sources of heat and compressed air cylinders must not be allowed to strike each other.

When a cylinder cap cannot be removed by hand the cylinder will be tagged "Do Not Use" and returned to the designated storage area for vendor return.

Storing

All cylinders must be secured upright in a safe, dry, well-ventilated area that limits corrosion and deterioration. Empty and non-empty cylinders will be stored separately. All stored cylinders will have their valves closed and capped.

Cylinders must be secured by means that will prevent the cylinder from falling. When securing the cylinder, the restraints will not be attached to an electrical conduit or process piping.

Use

Cylinders must be equipped with the correct regulators. Regulators and cylinder valves should be inspected to ensure that is it free of grease, oil, dirt, and solvents.

Only tools provided by the supplier should be used to open and close cylinder valves. Never force or modify connections.

Only regulators and gauges will be used within their designated ratings. The use of a pressure-reducing regulator is required at the cylinder unless the total system is designed for the maximum cylinder pressure.

Cylinder will:

- Have valves must be closed when cylinders are not in use.
- Not be used as rollers or supports.
- Not be placed where they can come in contact with electrical circuits.
- Be protected from sparks, slag, or flame from welding, burning, or cutting operations.

Inspection of Compressed Gas Cylinders

Compressed air cylinders must be visually inspected. Inspections of compressed gas cylinders must be performed. These inspections must follow the guidelines that apply to their scope of work. These guidelines are found in the Hazardous Materials Regulations of the Department of Transportation and pamphlets C-6 and C-8 from the Compressed Gas Association.

Leaking Cylinders

Leaking cylinders should be moved promptly to an isolated, well-ventilated area, away from ignition sources. Soapy water should be used to detect leaks. If the leak is at the junction of the cylinder valve and cylinder, do not try to repair it. Contact the supplier and ask for response instructions.

Transportation

Cylinders must be transported in a vertical secured position using a cylinder basket or cart and must not be rolled. Regulators should be removed, and cylinders capped before movement. Cylinders should not be dropped or permitted to strike violently, and protective caps are not used to lift cylinders.

Empty Cylinder

Empty cylinders must be returned to designated storage areas as soon as possible after use.

Cylinders should be marked as "MT" and dated when empty. Never mix gases in a cylinder and only professionals should refill cylinders. Empty cylinders must be handled as carefully as when filled.

Crane Safety

Purpose

This procedure describes minimum requirements and safe work practices for use and inspection procedures to help ensure that the operators of overhead cranes are protected from potential hazards associated with the movement of equipment and material. It also includes information on the safe operation and inspection procedures of small portable overhead hoists, chains, slings, and hoists.

In general Cotton employees do not operate cranes, if they should be assigned to operate a crane then the following procedure will be followed. Cranes are usually operated by third parties, and they must comply with this program unless their Crane Program is more stringent.

Regulations

29 CFR 1926.1400 SUBPART CC

Responsibilities

Supervisors will:

- Provide the necessary training to affected employees and workers.
- Ensure that all employees understand and adhere to the procedures of this plan and follow manufacturer instructions.
- Ensure that safe procedures relating to cranes, hoist, and rigging operations are always utilized.
- Attend training on the requirements of the crane safety program, provide program guidance to all affected parties onsite and enforce the provisions of the program that are to be met by the contractor.
- Assure that the requirements of the program are observed, for daily, monthly, and annual inspections. Establish and maintain an inspection checklist record-keeping system. Observe daily the fitness for duty of crane operators and riggers.
- Maintain a file of certification records for inspection of equipment utilized on their project.

Employees will:

- Report to work fit for duty, to perform their jobs without undue risk to themselves or others throughout the workday.
- Not operate cranes unless specifically trained according to this plan and assigned as the Crane Operator by Cotton.
- Operate Cranes according to this procedure and the specific equipment they will be operating.

The Third-Party Crane Operator will:

- Review and meet the requirements of the Crane Safety Program and the appropriate inspection procedures for chains, slings, and hoists.
- Conduct the appropriate inspections when they are required, complete the required documentation, and submit copies to Cotton on the determined schedule.
- Notify Cotton of any deficiencies identified during inspections and planned remedies. The inspection checklist will include the date of inspection, the signature of the person who performed the inspection, and an identifier (e.g., serial number) for the equipment or component being inspected.

HSE Department will:

- Review the Crane Safety Program on an annual basis and revise it as necessary or when federal regulations changes.
- Provide technical assistance regarding the regulatory requirements of cranes, chains, slings, and hoists. Assist & work closely with contractor safety planning, and support Cotton and Clients with critical lift preparations as needed.
- Verify contractor personnel qualifications, ensure equipment meets all required inspections & certifications, review documentation, approve proposed lift plans, and confirm lift emergency

contingency planning has been satisfied.

Procedures and Requirements

Notification of Crane Use on Project

Cotton Project Managers (PM) are required to submit the following sib-contractor information to HSE Management, Risk Management, and Division leadership 48 hours before when the crane will be onsite:

- Proof of Workers' Compensation Insurance
- Proof of General Liability insurance (Cotton listed as additionally insured)
- Waiver of Subrogation
- Riggers insurance
- Lift Plan
- Size and type of crane(s)

Crane Operator Qualification

Cranes may only be operated by certified/qualified operators. Only those employees qualified by training are allowed to operate equipment and machinery. Cotton must ensure operators are qualified/certified by one of the following methods:

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

Load Chart

Each hoist will have a legible load chart showing the rated capacity in all permitted working positions and configurations of use, manufacturer name, model, serial number, and year of manufacture or shipment date permanently marked or noted clearly, permanently posted on the equipment, weatherproofed and conspicuous on the equipment and will be kept legible at all times. The load chart will be issued to the equipment operator, who must have it available at all times when operating the equipment.

Modifying Equipment

Modifications or additions that may affect the capacity or safe operation of the equipment must not be made without written approval from the manufacturer or approval from a registered professional engineer. The manufacturer must approve all modifications/additions in writing. A registered professional engineer must be qualified for the equipment involved and must ensure the original safety factor of the equipment is not reduced.

Before Making a Lifting

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

All loads will be hooked or slung under the direction of a competent employee.

The operator must carry proof of training.

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

A fire extinguisher must be immediately available in the cab of each crane or other hoisting equipment.

Equipment Operation

The operator may refuse to lift a load if there is a safety concern. Whenever there is a concern as to

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

The crane operator's manual must be in the cab at all times. The procedures applicable to the operation of the equipment, including rated capacities (load charts), recommended operating speeds, special hazard warnings, instructions, and operator's manual, must be readily available in the cab at all times for use by the operator.

When the operator of a crane or hoist does not have a clear and unobstructed view of the boom, jib, load line, load hook, and load throughout the whole range of the hoisting operation, the operator must act only in the directions of a qualified, designated signaler who has a clear view of the things the operator cannot see. The operator of the crane or hoist must stop the operation of the equipment on receiving a stop signal from any person.

Operators of hoisting equipment will disregard signals from anyone except designated signal persons but in an emergency, other employees may give a stop signal.

The Crane Operator and Riggers must be physically fit and thoroughly trained, competent individuals, and not using any prescription or OTC medications that could impair physical, visual, or mental reactions or capabilities, and must understand all the regulations regarding crane safety.

The following outlines the crane and hoist operating guidelines:

- All lifting equipment will be used and maintained following all the policies stated in this program and within the manufacturer's specifications.
- Do not load the crane/hoist beyond its rated capacity.
- When it is necessary to swing loads over areas where other employees are working, an alert warning will be given and employees not in the crane/hoist operation will clear the area until the crane/hoist operations are complete.
- The operator will not leave his position at the controls while a load is being moved and will not leave suspended loads unattended
- Lift loads in a vertical direction only.
- When necessary, use tag lines to control loads unless their use creates an at-risk condition. The tag will be attached to the load on at least one end and will be controlled by the spotter at all times.
- A spotter is mandatory for loads that exceed sixteen (16) feet in length and will also be crane/hoist trained and authorized.
- Do not use cranes/hoists to lift or support personnel.
- Operating controls will be marked to indicate the direction of travel.

Markings on Crane and Equipment

The rated load of the crane will be marked on each side of the crane. If the crane has more than one hoisting unit, each hoist and each hoist attachment should have the rated load marked. The marking will be legible from the ground or the floor. The load will not exceed the rated load of the crane or hoist. A common misconception is that the safety factor is built in, and that the operator may exceed the rated load up to the safety factor. A load is defined as the total superimposed weight on the load block or hook and includes any lifting devices such as magnets, spreader bars, chains, and slings.

Operation Guidelines

A Job Hazard Assessment will be performed to identify the work zone and determine if any part of the equipment and components' maximum radius could reach closer than 20 feet to a power line. If closer than 20 feet, the contractor must meet one of three required options detailed in 1926.1408(2). De-energize and ground power line, adjust lift to beyond 20 feet or verify power line voltage and utilize the table.

A designated competent person will inspect all machinery, equipment, and safety devices before each use and during use, to make sure that it is in safe operating condition. If a defective part is found, all parts should be repaired or replaced. All inspections will be documented, and records kept.

The contractor must comply with all manufacturer procedures applicable to the operational functions of equipment, including its use with attachments.

The operator has the authority to stop and refuse to handle loads whenever there is a safety concern.

Crane will not be operated unless ground conditions can support the crane and any other supporting materials as specified by the manufacturer.

A signal person must be provided if the operator's view is obstructed, if site-specific concerns require it, or if the operator determines that it is necessary.

Work Zone

The work zone is identified. The work zone must be identified by either:

- Demarcating boundaries (such as with flags, or a device such as a range limit device or range control warning device) and prohibiting the operator from operating the equipment past those boundaries, or
- Defining the work zone as the area 360 degrees around the equipment, up to the equipment's maximum working radius.

Marking Swing Radius

Marking/barricading the area within the crane's swing radius is required. The Crane Operator or Supervisor will erect and maintain control lines, warning lines, railings, or similar barriers to mark the boundaries of the hazard areas.

Power Lines

Control measures are taken if it is determined that any part of the equipment may come within 20 feet of a power line. The Crane Operator and Supervisor will determine if any part of the equipment, load line, or load (including rigging and lifting accessories) if operated up to the equipment's maximum working radius in the work zone, could get closer than 20 feet to a power line. If so, one of the following options must be performed:

- Deenergize and ground. Confirm from the utility owner/operator that the power line has been de-energized and visibly grounded at the worksite.
- 20-foot clearance. Ensure that no part of the equipment, load line, or load gets closer than 20 feet to the power line.
- Determine the line's voltage and the minimum approach distance permitted. Determine if any part of the equipment, load line, or load, while operating up to the equipment's maximum working radius in the work zone, could get closer than the minimum approach distance of the power line permitted. If so, then the employer must ensure that no part of the equipment, load line, or load (including rigging and lifting accessories), gets closer to the line than the minimum approach distance.

TABLE A—MINIMUM CLEARANCE DISTANCES

Voltage (nominal, kV, alternating current)	**Minimum Clearance Distance** (feet)
up to 50	10
over 50 to 200	15
over 200 to 350	20
over 350 to 500	25
over 500 to 750	35
over 750 to 1,000	45
over 1,000	(As established by the utility owner/operator or registered professional engineer who is a qualified person for electrical power transmission and distribution).

Assembling/Disassembling Equipment

The manufacturer's specifications/instructions are followed during assembly and/or disassembly. The manufacturer's procedures and prohibitions must be complied with when assembling and disassembling equipment.

A competent/qualified person must direct the assembly and/or disassembly of equipment. Assembly/disassembly must be directed by an individual who qualifies as both a competent person and a qualified person, or by a competent person who is assisted by one or more qualified persons.

The competent person is referred to as the A/D director. The A/D director must understand the applicable assembly/disassembly procedures. The A/D director must review the applicable assembly/disassembly procedures immediately before the commencement of assembly/disassembly unless the A/D director understands the procedures and has applied them to the same type and configuration of equipment.

Signaling

A signal person is used when the operator's view is obstructed. A signal person must be provided in each of the following situations:

- The point of operation, meaning the load travel or the area near or at load placement, is not in full view of the operator.
- When the equipment is traveling, the view in the direction of travel is obstructed.
- Due to site-specific safety concerns, either the operator or the person handling the load determines that it is necessary.

Signals to the operator will be following the standard hand signaling for crane operations. Specific requirements include:

- Each movement of equipment will be proceeded by distinctive signals discernible to all employees endangered by the movement and distinguishable by the operator of the equipment controlled, and a signal which is not understood clearly by the operator of equipment will be acted upon by him or her as though it were a stop signal.
- An employee will not cause a signal to be given for the movement of equipment unless he or she has ensured that he or she and all employees within the area for which he or she is responsible are not endangered by the movement.
- Only a designated employee will cause a signal to be given for the movement of equipment, but employees may cause a stop signal to be given and this signal will be obeyed promptly and without question.
- An employee designated to direct the movement of equipment will not be otherwise occupied while the equipment is in motion and he or she will be prepared to signal to stop during the motion.
- A signaling device that functions unreliably or in a way that might constitute a hazard to an employee will be removed from service immediately.
- Signals will be discernible or audible at all times.
- Some special operations may require the addition or modification of the basic signals.
- For all such cases, these special signals will be agreed upon and thoroughly understood by both the person giving the signals and the operator and will not be in conflict with the standard signals.

Slings

Slings will not be:

- Shortened with knots, belts, or other makeshift devices.
- Kinked.
- Loaded over their rated capacities.

They will be securely attached to their loads and should be padded or protected from the sharp edges of their loads. Hands or fingers will not be placed between the sling and its load while the sling is being tightened around the load.

A sling should not be pulled from under a load when the load is resting on the sling.

Slings that are damaged or defective should be destroyed, at a minimum, they must be identified as "Out of Service" with paint and removed from the Cotton project site.

Chains

Welded alloy steel chain slings must have permanently attached identification tags that have the following information:

- Name of the chain's manufacturer.
- Safe Working load of the chain.
- Original reach or length of the chain.

- The date of issue.
- The grade of the chain.

Do not remove the information tag from the chain.

A certification of proof test should be kept on file for each lifting chain.

Inspect all chains annually (on a link-by-link basis) and document. An annual inspection should be conducted by an approved vendor.

Wire Rope Slings

An eye splice made in any wire rope should have not less than three full tucks. However, this requirement should not operate to preclude the use of another form of splice or connection which can be shown to be as efficient, and which is not otherwise prohibited.

Wire rope should not be used if in any length of eight diameters, the total number of visible broken wires exceeds 10 percent of the total number of wires, or if the rope shows other signs of excessive wear, corrosion, or defect.

Slings should not be shortened with knots or bolts or other makeshift devices. Sling legs should not be kinked.

Wire rope slings must be visually inspected before each lift. This inspection should include visual examination for:

- Kinking
- Core protrusion
- Crushing
- Corrosion
- Un-stranding
- Broken or cut strands
- Bird caging
- Broken wires
- Strand displacement
- Damage to end attachments
- Attachment of manufacturer certification tags

The following indications during the inspection will require the sling to be removed from service:

- More than one broken wire at any termination points of the sling.
- Ten randomly distributed broken wires in one rope lay, or five broken wires in one strand of one rope lay.
- Wear or scrape of one-third the original diameter of outside individual wires.
- Kinking, bird caging, or other damage that distorts the rope structure. (The main things to look for are wires or strands that are pushed out of their original position in the rope.
- Any metallic discoloration or loss of internal lubricant due to exposure to heat.
- Cracked, bent, or broken end fittings caused by abuse, wear, or accidents.
- Severe corrosion of the rope or end attachments has caused pitting or binding of wires. Light rusting usually does not affect the strength of a sling.

Synthetic Webbing Slings

The synthetic web sling should be marked or coded to show the name of the trademark of the manufacturer, rated capacities for the type of hitch, type of material, and rated capacity should not be exceeded.

Synthetic webbing should be of uniform thickness, width, and selvage edges should not be split from the webbing's width.

Fitting should be of a minimum breaking strength equal to that of the sling and free of all sharp edges that could in any way damage the webbing.

Attachment of end fittings to webbing and formation of eyes. Stitching should be the only method used to attach end fittings to webbing and to form eyes. The thread should be in an even pattern and contain a sufficient number of stitches to develop the full breaking strength of the sling.

Synthetic web slings should be immediately removed from service if any of the following conditions are present:

- Acid or caustic, or heat burns
- Melting or charring of any part of the sling surface
- Snags, punctures, tears, or cuts
- Broken stitches
- Worn stitches
- Distortion of fittings

Shackles and Hooks

The manufacturer's recommendations should be followed in determining the safe working loads of the various sizes and types of specific and identifiable hooks.

Overhead Hoists

The hoists are used to bring material up through a floor opening or along the outside of a building.

The safe working load of the overhead hoist, as determined by the manufacturer, must be written on the hoist, and this safe working load must not be exceeded.

The support must be arranged so that the hoist can move freely and must not prevent the hoist from lining itself up with the load.

The hoist must be installed only in locations that will always allow the operator to stand clear of the load.

Air hoists must be connected to an air supply with enough capacity and pressure to safely operate the hoist. All air hoses supplying air must be positively connected to prevent their becoming disconnected during use.

Training:

Crane Operator Training will be done per OSHA 1926.1427 and will include the following:

- Documentation of employee, date of training, and subject matter, including the method used to test knowledge of the material.
- No employee will operate cranes or equipment covered by this program until training has been complete and management has approved and designated him or her as a qualified operator.

Signal Person Training will be done per OSHA 1926.1428 and will include the following:

- Know and understand the type of signals used. If hand signals are used, the signal person must know and understand the Standard Method for hand signals.
- Be competent in the application of the type of signals used.
- Have a basic understanding of equipment operation and limitations, including the crane dynamics involved in swinging and stopping loads and boom deflection from hoisting loads.
- Know and understand the relevant requirements.
- Demonstrate that they meet the requirements through an oral or written test, and a practical test.

Definitions

A/D director (Assembly/Disassembly director) means an individual who meets this subpart's requirements for an A/D director, irrespective of the person's formal job title or whether the person is non-management or management personnel.

Assembly/Disassembly means the assembly and/or disassembly of equipment covered under this standard. Concerning tower cranes, "erecting and climbing" replaces the term "assembly," and "dismantling" replaces the term "disassembly." Regardless of whether the crane is initially erected to its full height or is climbed in stages, the process of increasing the height of the crane is an erection process.

Boom means an inclined spar, strut, or other long structural members which support the upper

hoisting tackle on a crane or derrick. Typically, the length and vertical angle of the boom can be varied to achieve increased height or height and reach when lifting loads. Booms can usually be grouped into general categories of hydraulically extendible, cantilevered type, latticed section, cable supported type, or articulating type.

A boom angle indicator means a device that measures the angle of the boom relative to the horizontal.

Boom hoist limiting device includes boom hoist disengaging device, boom hoist shut-off, boom hoist disconnects, boom hoist hydraulic relief, boom hoist kick-outs, automatic boom stop device, or derrick limiter. This type of device disengages boom hoist power when the boom reaches a predetermined operating angle. It also sets brakes or closes valves to prevent the boom from lowering after power is disengaged.

The boom length indicator indicates the length of the permanent part of the boom (such as ruled markings on the boom) or, as in some computerized systems, the length of the boom with extensions/attachments.

Boom stop includes boom stops, (belly straps with struts/standoff), telescoping boom stops, attachment boom stops, and backstops. These devices restrict the boom from moving above a certain maximum angle and toppling over backward.

Center of gravity: The center of gravity of any object is the point in the object around which its weight is evenly distributed. If you could put support under that point, you could balance the object on the support.

Competent person means one who is capable of identifying existing and predictable hazards in the surroundings or working conditions that are unsanitary, hazardous, or dangerous to employees, and who has the authorization to take prompt corrective measures to eliminate them.

Counterweight means a weight used to supplement the weight of equipment in providing stability for lifting loads by counterbalancing those loads.

A dedicated channel means a line of communication assigned by the employer who controls the communication system to only one signal person and crane/derrick or a coordinated group of cranes/derricks/signal person(s).

Dedicated spotter (power lines): To be considered a dedicated spotter, the requirements of § 1926.1428 (Signal person qualifications) must be met and his/her sole responsibility is to watch the separation between the power line and the equipment, load line, and load (including rigging and lifting accessories), and ensure through communication with the operator that the applicable minimum approach distance is not breached.

Directly under the load means a part or all of an employee is directly beneath the load.

Dismantling includes partial dismantling (such as dismantling to shorten a boom or substitute a different component).

A hoist means a mechanical device for lifting and lowering loads by winding a line onto or off a drum.

Hoisting is the act of raising, lowering, or otherwise moving a load in the air with equipment covered by this standard. As used in this standard, "hoisting" can be done by means other than wire rope/hoist drum equipment.

Load refers to the object(s) being hoisted and/or the weight of the object(s); both uses refer to the object(s) and the load-attaching equipment, such as the load block, ropes, slings, shackles, and any other ancillary attachment.

Overhead and gantry cranes includes overhead/bridge cranes, semi gantry, cantilever gantry, wall cranes, storage bridge cranes, launching gantry cranes, and similar equipment, irrespective of whether it travels on tracks, wheels, or other means.

A qualified person means a person who, by possession of a recognized degree, certificate, or professional standing, or who by extensive knowledge, training, and experience, successfully demonstrated the ability to solve/resolve problems relating to the subject matter, the work, or the project.

A qualified rigger is a rigger who meets the criteria for a qualified person.

Rated capacity means the maximum working load permitted by the manufacturer under specified working conditions. Such working conditions typically include a specific combination of factors

such as equipment configuration, radii, boom length, and other parameters of use.

Tagline means a rope (usually fiber) attached to a lifted load for purposes of controlling load spinning and pendular motions or used to stabilize a bucket or magnet during material handling operations.

Wire rope means a flexible rope constructed by laying steel wires into various patterns of multi-wired strands around a core system to produce a helically wound rope.

Driving Safety

Purpose

The purpose of this policy is to harness a safe driving culture by ensuring that all employees or any other person or persons driving on behalf of Cotton do so in a safe, reliable, and responsible manner. This program is written to follow local regulatory requirements and provide directives to managers, supervisors, and employees about their responsibilities in the operations and management of Cotton vehicle safety.

Responsibilities

Supervisors will:

- Be responsible for the implementation and maintenance of the program for their site and ensuring all assets are made available for compliance with the plan.
- Recognize hazards and the risks associated with driving for work are identified and assessed, and appropriate measures are put in place to eliminate, control, or minimize the risk.
- Monitor and review the risk assessment and systems of work following an incident while driving at work. Ensure procedures are in place in the event of an accident/incident and brought to the attention of all drivers.
- Ensure all accidents, incidents and near misses are reported and managed following the Cotton HSE Management System.

Employees will:

- Be familiar with this procedure and the local workplace vehicle safety program.
- Follow all requirements, report unsafe conditions, and follow all posted requirements.
- Possess a valid driver's license, if driving a vehicle. Employees are responsible for possessing a valid driver's license for the type of motor vehicle they operate.
- Do not drive while under the influence of drugs or alcohol. Employees are strictly prohibited from operating a motor vehicle while under the influence of drugs or alcohol. This includes blood alcohol levels at or above the local legal limit, illegal drugs, and prescription medications that cause drowsiness or other conditions that may cause impairment. Employees taking prescription medication that may impact their safety will report this to their supervisor.

HSE Department will:

- Developing and maintaining the program and related procedures.
- Be responsible to ensure so far as is reasonably practicable, the safety, health, and welfare at work of all employees and others affected by the driving activities of Cotton employees.
- Audit this program and make any changes to it based on changes to regulations, audits and/or incident investigation, and corrective actions.

Risk Factors

The following main risk factors associated with driving for work have been identified and must be considered by the manager when carrying out the risk assessments in consultation with their employees:

- Speeding.
- Alcohol and drugs.
- Seat belts.
- Driver fatigue.
- Distracted driving.

All Cotton drivers must always be aware of their speed and judge the appropriate speed for the vehicle considering:

- Driving conditions.
- Other drivers on the road.
- Current weather conditions.
- All possible hazards.
- Speed limits.

When traveling at a higher speed, drivers have less time to identify and react to what is happening around them and it takes longer to stop. Drivers must know the speed limit on the roads they are using and the class of vehicles they are driving.

Driving Safety

- Where backing is required, drivers, when parking, drivers should make every effort to park the vehicle in a manner that allows the first move when leaving the parking space to be forward.
- Drivers must have either a reversing alarm, use a spotter, or walk around the truck/trailer before backing.
- Passenger compartments are to be free from loose objects that might endanger passengers in the event of an incident. Any vehicle with non-segregated storage will be equipped with a cargo net or equivalent to separate the storage area.
- Vehicles (light vehicles, heavy vehicles, and trailers) may not be modified without the endorsement of the manufacturer.
- Signs, stickers, or labels are to be fitted in such a manner that they do not obstruct the driver's vision or impede the driver's use of any controls.

Driver Fatigue

Fatigue is a major contributing cause of fatal and serious injury vehicle collisions and incidents. Drivers are most likely to feel sleepy with driving:

- On long journeys and monotonous roads.
- Between 2 am and 6 am.
- Between 2 pm and 4 pm.
- After having less sleep than normal.
- After the use of intoxicants.
- After taking medicines that cause drowsiness.

If an employee is concerned about their driving hours, journeys, or schedules, this should be discussed with the employee's Supervisor or Manager.

Distracted Driving

The use of a hand-held device while driving is not permitted. Using a mobile phone while driving (even a hands-free model), drivers are four times as likely to be involved in motor collisions and accidents involving serious injury than drivers who do not use mobile phones.

The use of personal entertainment systems through earphones (e.g., personal radios, MP3 players, etc.) should be avoided. Eating, drinking, and smoking are all distractions to the main driving task.

Other factors which should be taken into consideration include:

- Transportation of clients.
- Adverse weather conditions.
- Driving at night.
- Driving in remote/high-risk areas.
- Emergency procedures for dealing with incidents.
- Parking.
- Driving in reversing.

Reporting of Traffic Violations and Vehicle Incidents

Motor vehicle incidents occurring while on company business must be reported. The incident will be reported to the employee's supervisor and the HSE Department.

Safe Driver Behaviors/Practices

Operators of motor vehicles must follow all traffic laws. Employees are expected to follow all traffic laws and rules of the road while on company business.

Immediately report any restriction or change to their driving privileges to the supervisor.

Driver and all passengers must wear seatbelts. Seat belt use is mandatory for the driver and

passengers while the vehicle is in operation.

Defensive drivers continually assess conditions and hazards and remain prepared for any challenge that may approach them.

When speaking with a passenger, always keep your eyes on the road.

Both hands are on the wheel.

The use of cell phones, hands-free cell phones, manipulating radios, or other equipment may cause a distraction while driving any vehicle.

Drivers will not exceed the posted speed limit and maintain a safe distance between other vehicles.

Slow down around construction, large vehicles, wildlife, fog, rain, snow, or anything else that adds a hazard to your driving.

Alcohol or illegal drugs are not allowed to be in a company, client, or leased vehicle at any time.

Journey Management

Drivers are to be prepared before leaving:

- Perform 360 walkarounds and report new damage.
- Check the windshield for cracks that could interfere with vision.
- Inspect for vehicle damage and immediately report any damage to the supervisor if not previously observed.
- Make sure dirt or snow is removed from the lights on all sides of the vehicle.
- Brush or clean off snow or ice on all windows to ensure complete vision.
- Check fuel level to be certain the destination can be reached.
- Check to ensure the license plates and inspection tags on the vehicle are current.
- Ensure the driver is rested and alert for driving.

Vehicle Requirements

Vehicles will be maintained in safe working order. Company-owned vehicles will have a maintenance program in place meeting the minimum manufacturer's recommendation. In the event employees are driving personal vehicles for company business, pre-use inspections and regular vehicle maintenance must still be completed.

Cargo must be adequately secured. Any cargo on or in motor vehicles must be adequately stored and secured to prevent unintentional movement of the equipment which could cause spillage, damage to the vehicle, or injury to the operator. Loads will be secured and within the manufacturer and legal limits and will not exceed the manufacturer’s specifications and legal limits for the vehicle.

Vehicles are to be fitted with a spare wheel and changing equipment to safely change a wheel or a suitable alternative.

All seats are to be fitted with headrests.

All light-duty vehicles (including buses) are to be equipped with an adjustable left, right, and central rear-view mirrors.

Transportation

The operator of an employee transport vehicle must ensure that the worker transport vehicle has been inspected by a qualified person before first use on a work shift.

Seated workers must wear seat belts while being transported in a vehicle equipped with seat belts.

A worker must not ride in a vehicle with any part of the body outside the vehicle.

Any enclosed portion or compartment of a vehicle in which workers are transported must have:

- Effective ventilation, independent of doors, provides clean air.
- Adequate lighting and means for heating and cooling.
- An effective means of communication between the operator and passengers.
- More than one means of exit.

Traffic Control

Cotton will develop, in writing, and implement a traffic protection plan for its workers at a worksite if any of them may be exposed to a hazard from vehicular or pedestrian traffic that may endanger the safety of any worker. It will include the following control measures:

- Effective means of traffic control will be provided whenever the unregulated movement of vehicular traffic constitutes a hazard to workers.
- Traffic control will include barricades and cones as the primary control and, where required, signs, flagmen or other techniques and devices made necessary by the prevailing circumstances.
- Operations or equipment, encroaching on the traveled way, will be protected by barricades and cones as the primary control and, where required other effective devices.
- Workers must be trained in traffic control safe work procedures.
- Before a worker is designated as a flag person, the worker is trained in the safe work procedures for the safe control of traffic operations and wears the appropriate high visibility outer clothing and/or equipment.
- If a worker at a project on a highway may be endangered by vehicular traffic unrelated to the project, the project will make use of as many measures as necessary to adequately protect the worker.
- A worker who is required to set up or remove traffic control measures on a roadway or a shoulder of a roadway will be competent, will be equipped with the appropriate high visibility apparel, and will not perform any other work while setting up or removing the measures and will be given adequate written and oral instructions in a language that he or she understands, for setting up or removing the measures.

ATV Vehicles

If a work site utilizes ATV vehicles, then the following will apply:

If the manufacturer has not set limits for the operation of the ATV on sloping ground, 5% is the maximum allowable slope unless Cotton has developed and implemented written safe work procedures appropriate for any steeper slope on which the equipment is to be used.

Each ATV operator is properly licensed and trained in the safe operation of the vehicle. The training program for an ATV operator must cover:

- The operator's pre-trip inspection,
- Use of personal protective apparel,
- Operating skills according to the ATV manufacturer's instructions,
- Basic mechanical requirements, and
- Loading and unloading the vehicle if this is a job requirement.

An ATV operator and any passenger on an ATV must wear approved eye and hearing protection as required by local regulatory requirements and the PPE Program. An ATV operator and any passenger on an ATV must wear clothing suitable for the environmental conditions and when necessary to protect against the hazards present at the worksite, suitable gloves and clothing which covers the ankles and legs and the arms to the wrists, and appropriate footwear.

An approved helmet will be worn by the operator and passenger.

Loading and unloading an ATV onto or off a carrier vehicle must be done safely. If ramps are used when loading or unloading an ATV they must be placed at a suitable angle, be sufficiently wide, and have a surface finish that provides an adequate grip for the ATV's tires.

Training

A training needs assessment should be undertaken to ensure that drivers receive specific vehicle familiarization as required. This should include a review of driving activities and an assessment of any associated risks arising from these activities. A record should be retained.

Incident Management

All accidents, incidents, and near misses must be reported and managed following the HSE Department. Reporting of incidents.

Report all incidents and accidents to your Supervisor and HSE Department.

Revision and Audit

This policy will be reviewed every year, or best practice dictates. Implementation of this policy will be audited periodically at the national level.

Definitions

CRW: Certificate of Road Worthiness.

Driver: A person who drives on behalf of Cotton.

Driving for Work: Driving for work includes any person who drives on a road as part of their work (not including driving to and from work unless in receipt of travel expenses) either in:

- A Cotton vehicle.
- Their private vehicle, receiving travel expenses from Cotton.

Dynamic Risk Assessment: Dynamic Risk Assessment is a continuous assessment of risk in changing circumstances.

Employee: Any person who has entered into or works under (or, where the employment has ceased, entered into, or worked under) a contract of employment and includes a fixed-term employee and a temporary employee and reference, concerning an employer, to an employee will be construed as references to an employee employed by that employer.

Employer: Concerning an employee means the person or persons with whom the employee has entered into or for whom the employee works under (or, where the employment has ceased, entered into, or worked under) a contract of employment. Includes a person (other than an employee of that person) under whose control and direction an employee works. Includes where appropriate the successor of the employer or an associated employer of the employer.

Fit for Use: For this policy "fit for use" means a vehicle that services, is maintained, taxed, insured/indemnified, has a valid National Car Testing (NCT) (where required) and the driver has performed a vehicle pre-check.

Intoxicant: Alcohol and drugs or any combination of drugs or drugs and alcohol. It includes prescribed and non-prescribed drugs.

Intoxicant Misuse: Any use of an intoxicant that causes a risk:

- To those covered under the scope of this document.
- To the work activities of Cotton.
- To service users and/or
- The public at a Cotton place of work.

Place of Work: Place of work includes any, or a part of any, place (whether within or forming part of a building or structure), land, or other location at, in, upon, or near which work is carried on whether occasionally or otherwise and in particular includes a vehicle.

PPE: Personal Protective Equipment means all equipment designed to be worn or held by an employee for protection against one or more hazards likely to endanger the employee's safety and health at work and includes any additions and accessories to the equipment.

Temporary Employee: An employee who is assigned by a Temporary Employment Business to work for and under the control of another undertaking availing of the employee's services.

Vehicle Pre-check: The driver walks around to check to identify obvious vehicle defects and ensure all vehicles are in a roadworthy condition.

Gaseous Chlorine Awareness

Purpose

The purpose of this procedure is to advise employees in areas where chlorine is being used and to supply on an awareness level basis about the properties and hazards of chlorine, general guidelines, and training requirements.

This procedure applies to Cotton working at Client locations where employees whose work activities may involve working with or around chlorine. When work is performed on a non-owned or operated site, the operator's program will take precedence, however, this document covers Cotton employees and contractors and will be used when an operator's program does not exist or is less stringent.

Responsibilities

Supervisor will:

- In coordination with the HSE Department, develop and implement chlorine awareness training.
- Ensure personnel are aware of work that has the potential of exposure to chlorine.
- Identify possible locations where chlorine in the workplace may be used.
- Inform the HSE Department of upcoming work involving chlorine, allowing the HSE Department to provide any necessary monitoring or other required actions.
- Ensure employees comply with the chlorine awareness requirements.

Employees will:

- Comply with the chlorine awareness requirements and direct any questions or concerns to the Safety Manager.
- Attend required annual training.

HSE Department will:

- Provide any necessary monitoring or other required actions.
- Develop and implement chlorine awareness training

Procedure

Characteristics of Chlorine

Appearance

Is a greenish-yellow gas with a characteristic pungent odor. Chlorine is a greenish-yellow gas under normal conditions. It can be a liquid at extremely low temperatures or high pressure. It has a distinct pungent odor.

Description

Chlorine is a toxic gas with corrosive properties. It is widely used as a bleach in the manufacture of paper and cloth and manufacturing solvents, pesticides, synthetic rubber, and refrigerants. Chlorine has also been used as a chemical warfare choking agent. The lowest level at which humans can smell chlorine and notice its irritant properties generally provide sufficient warning of exposure; however, chronic exposure to chlorine causes adaptation of the sense of smell (olfactory fatigue) and tolerance to its irritant effects. Because of this, persons with a history of prolonged exposure lose the ability to identify when they are being exposed to chlorine. Chlorine is usually shipped in steel cylinders as a compressed liquefied gas.

Methods of Dissemination:

- **Indoor Air**: Chlorine can be released into indoor air as a gas.
- **Water**: Chlorine can be used to contaminate water.
- **Food**: Food is an unlikely route of dissemination.
- **Outdoor Air**: Chlorine can be released into outdoor air as a gas.
- **Agricultural**: If chlorine is released as a gas, it is highly unlikely to contaminate agricultural products.

Routes of Exposure

Inhalation is the main route of chlorine gas exposure. Contact with the escaping gas may cause frostbite. Compressed liquid can cause frostbite and/or chemical burns to the eyes and skin. Significant skin absorption or ingestion is unlikely. Chlorine is a gas at room temperature, making ingestion an unlikely route of exposure.

Health Effects

Some of the potential health effects of chlorine such as throat irritation, vomiting, frostbite burns, and possible death at high concentration levels. Exposure to chlorine can cause throat irritation, vomiting, frostbite burns, tooth enamel corrosion, and nausea. Exposure to high concentrations of chlorine can be fatal.

Locations Where It Can Be Found

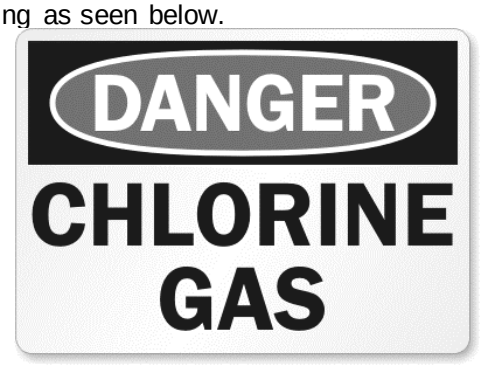
Possible locations where employees may be exposed to chlorine during their job functions may include, but are not limited to:

- Water treatment facilities
- Chlorine injection facilities
- Water pre-treatment areas

Pre-Job Planning for Chlorine-Related Work

Pre-job planning or a site assessment will be conducted before starting work and the assessment will be documented. Documented planning will be conducted for those operations involving potential chlorine exposure, and this includes any time an active purge is being applied to a system in or around equipment associated with work. Some planning or assessment elements include:

- All proposed work requires a job site visit by the requestor and a unit operator to identify special precautions, equipment status, and personal safety equipment requirements.
- The permit must identify all hazards and special personal protective equipment requirements.
- Appropriate signage will be utilized and adhered to. Appropriate signage will include an adequate warning as seen below.



Training

Employees will be aware of provisions of site-specific contingency/emergency plans. Employees will be aware of the owners'/host facility's contingency plans and provisions. Employees must be informed where chlorine is used in the host facility and aware of additional plant safety rules.

Cotton will provide training for all affected employees including any Cotton employee working with or near chlorine and the training will emphasize:

- The characteristics of chlorine.
- The hazards of chlorine.
- Owner client requirements.

Documentation of training - Chlorine awareness training will be documented including dates of training, location of training, employee name, and trainer name.

General Waste Management

Purpose

The purpose of this waste management strategy was developed to provide guidance and requirements necessary for efficient, effective, and compliant waste management during construction and operations.

Responsibility

Supervisors will:

- Ensure that waste generated at their site is managed and disposed of per local, regional, and/or country requirements, as well as per sound environmental and safety practices.
- Devise and implement waste minimization programs at their job site or facility, as well as conduct training in waste management and waste minimization for their employees.
- Determine and acquire all permits or authorizations required for waste disposal.
- Determine and follow any waste management requirements while the waste is on-site. Permits, exemptions, authorizations, or notifications of waste management and/or disposal, as well as any documentation concerning wastes and correspondence with local, regional, or country agencies, will be kept on file at the facility.

Employees will:

- Ensure that all policies/procedures on waste management and minimization at the facility are followed.

HSE Department will:

- Assist in obtaining permits, exemptions, authorizations, or registrations for waste disposal from Cotton Commercial facilities. The HSE Director will also advise/assist in waste management and waste minimization activities as needed by facilities and/or projects.

Procedures and Requirements

Waste Management

All Cotton facilities are to limit or eliminate all wastes generated. Waste management and disposal are regulated in States.

Common examples of waste generated at Cotton facilities include office trash, project site trash, metal shavings, unusable raw materials, metal stock, etc. Management of these wastes will vary greatly, and, in some cases, segregation of waste streams will be required.

At every location, documentation of each waste stream generated will be kept. Each stream will be characterized by obtaining information concerning the chemical and/or physical characteristics of the waste.

Chemical analysis of every stream does not need to be performed, although it may be required in some cases. Knowledge of the properties of the waste may be sufficient for characterization purposes. For instance, in the case of coolant waste, the Safety Data Sheet(s) (SDS) and the type of service the coolant was in (i.e., stainless steel, mild steel, or bronze) may be sufficient to determine characterization.

Once the waste stream is characterized, management of the waste on-site can be determined. In most cases, minimizing the number of waste streams generated by the facility is preferred. Combining like wastes into the same stream will in most cases reduce waste management activities and simplify disposal. However, care should be taken to ensure that combining wastes violates no local, regional, or country requirements. Also, in areas where there are different classes of waste exist, segregation of the classes may preclude combining waste streams.

Waste Storage

In many areas, there are requirements for the storage of waste. Cotton also has waste storage requirements. These requirements include:

- All containers will be compatible with waste material stored and will remain closed when not in use.
- Specific areas will be demarcated or otherwise cordoned off for exclusive waste storage.
- If outside and unprotected from stormwater contact, the waste storage area will be bermed.
- No storm drains or conduit to storm drainage may be within (inside) a berm of a waste storage area. Moreover, in an un-bermed waste storage area, no drains will be directly exposed to runoff from waste storage areas.
- Smoking will not be allowed within 50 feet (15 meters) of waste storage areas. Appropriate warning signs will be posted.
- Spills, even seemingly minor occurrences, will be cleaned up promptly.

In facilities that have vehicle (i.e., cars, pickup trucks, trucks, forklifts, etc.) maintenance, such as changing oil, lubrication, and battery change-outs, performed at the location, special care is required to ensure that fluids and waste materials are cleaned up, captured, and disposed of properly.

Cotton discourages the use of any chlorinated solvents in cleaning and/or maintaining equipment. Some chlorinated materials are atmospheric ozone depletes and have been disallowed in most parts of the world since 1995. Petroleum aromatic solvents (i.e., toluene, xylene, etc.) will not be used as cleaning solvents. If such use is unavoidable, Cotton actively encourages recycling of all such solvents as well as other materials whether they are generated in a wash-down operation or other processes.

Waste Minimization

Waste minimization and wise use of natural resources are top priorities. Waste minimization and resource conservation are beneficial in many ways such as a positive company image with the public and customers, cost savings, and operating responsibly.

Waste minimization can take on many forms including good housekeeping, limiting inventories of chemicals, recycling/reuse of materials that would otherwise be considered waste and disposed of, etc. Waste minimization programs are generally best tailored to the specific operations of each facility and therefore are not discussed in detail in this section.

Tracking waste generation and periodically assessing the type and amounts of waste is an important start in targeting possible waste minimization projects. By identifying the waste streams with large volumes, possible minimization procedures can be developed and the feasibility of implementing the procedures assessed.

Permits and Registration

Obtaining a permit or authorization to dispose of waste off-site is generally easy to accomplish. The facility has the responsibility of determining and acquiring permits or authorization required for waste disposal.

Employee Training

Cotton employees will receive awareness training to guide proper waste management practices and disposal.

Recordkeeping and Reporting

Some government jurisdictions require very specific recordkeeping to be kept concerning waste generation and disposal (i.e., U.S. hazardous waste manifest). Regardless of local, regional, or country requirements for recordkeeping for waste generation and disposal, tracking of waste generation and disposal must be kept by facilities for waste minimization assessments.

This may be as simple as an accounting record of shipped waste that designates the volume, type, and destination of the waste to more complex systems of specific waste manifests, transportation logs, certification of disposal/destruction, etc.

For assistance in determining the recordkeeping and reporting requirements for a facility contact the HSE Director or HSE Department.

Definitions

Characterization of Wastes - Obtaining information about the chemical and/or physical characteristics of the waste. Chemical analysis of every regulated waste stream that requires analysis will be performed periodically or if the waste stream changes.

Contaminant - Any element or compound from a man-made source that is found in a matrix or media.

Non-Regulated Waste -Any waste that is not regulated by the local, regional, and country agencies. These wastes generally have few, if any, management, or disposal requirements. However, these wastes will be managed and disposed of off-site following sound environmental and safety practices.

Office/Plant Trash -A common waste stream generally composed of paper, paper products (cardboard), wood, plastic, food products, cloth, and small pieces of metal. This waste stream generally contains only waste generated in normal office activities and will not contain process waste.

Recycled Material - Any byproduct, material, equipment, etc. which is no longer useful for its intended purpose but is used again after reclaiming or reprocessing.

Regulated Waste-Any waste that is regulated by the local, regional, or country agencies. These wastes will require management and disposal following local, regional, and/or country requirements.

Ground Fault Protection

Purpose

This procedure describes minimum requirements for providing guidelines for the safe operation of Electrical Equipment using Ground Fault Protection. The purpose of this procedure is to comply with State and Federal regulations.

Regulations

OSHA 29 CFR 1926.404

Responsibilities

Supervisor will:

- Provide the necessary training to affected employees and ensure that all employees understand and adhere to the procedures of this plan.

Employees will:

- Be fully qualified and competent in the operation of the Assured Equipment Grounding Conductor Program.

HSE Department will:

- Audit this program and make any changes to it based on changes to regulations, audits and/or incident investigation, and corrective actions.

Procedures and Requirements

Personal Injury Hazards

- Electric Current can cause injury in four ways:
- Cardiac arrest due to the electrical effect on the heart.
- Muscle, nerve, and tissue destruction from a current passing through the body.
- Thermal burns from contact with the electrical source.
- Falling or injury after contact with electricity.

The difference between a minor shock, a burn, or a fatality depends on the current that flows through your body. Skin resistance directly affects the magnitude of the current forced through the body. Dry skin typically has from 100,000 to 600,000 ohms resistance, while wet skin resistance may be less than 1,000 ohms. At 15-20 milliamps muscle control is lost, with possible ventricular fibrillation of the heart at 50-100 milliamps and certain ventricular fibrillation at 100-200 milliamps.

Burns are the most serious side effect of electrical accidents and are the principal danger with direct currents or very low voltage alternating currents (below about 80 volts). While there may be severe burns from low and medium voltage alternating currents, burns from extra high voltages tend to be very severe and may cover a large area of the body. These burns may be of several types:

- Contact burns may be very small but reach the bone.
- Arc burns may be very extensive with resultant scarring or amputation.
- Radiation burns are like a severe form of sunburn.
- Vaporized metal may burn into the face and hands.
- Deep burns and necrosis can result from high-voltage contact burns.

While one reportable electrical in ten is fatal, damage to muscles may be serious and amputation may be necessary in very bad cases.

In the event of a life-threatening electrical shock, the priority is to rescue when dealing with electricity to avoid becoming a victim. Before approaching a possible electric shock victim, shut off all electricity in the immediate area. Shut off the main breakers for the area (check for more than one breaker box), and then remove the victim from the electrical hazard using a non-conductor (broom handle, rubber hose, or plastic pipe). Move the victim a good distance from the electrical hazard. Perform CPR immediately if needed.

Assured Grounding

Use Ground Fault Circuit Interrupters (GFCI) in all work locations. Periodically tests and inspections are required for all (GFCI) power and devices and the test and inspection must be logged.

All extension cords and temporary wiring must be a three-wire conductor of the heavy-duty type. Flat cords are not permitted. All extension cords must be inspected before use. Damaged cords must be removed from the work area before repairs begin.

Ground Fault Circuit Interrupters

Ground Fault Circuit Interrupters (GFCI) are designed to monitor the amount of electricity flowing to and from an electrical tool or appliance. If the GFCI detects a difference of more than 5 mA, it will interpret this as short and cut off the electricity flowing into the device in 1/60th of a second. This will prevent someone from being electrocuted if they are using the device.

All 120-volt, single-phase 15 and 20-ampere receptacle outlets on construction sites that are not part of the permanent wiring of the building or structure and are used by employees, must have approved GFCIs to protect the workers.

GFCIs should be tested before each use. To test a GFCI, simply plug an electrical device such as a tool into the GFCI and then push the “test” button on the GFCI. Now try to use the tool. If the GFCI is working properly, the tool should not work. Push the reset button on the GFCI and you are ready to go to work.

General Requirements

OSHA requires that all employees be protected from exposure to electrical energy. When an employee will be working near any electric power circuit, the employer must have the electrical power circuit de-energized, grounded, or guarded by insulation or other means to protect the employee.

Before any work begins on a construction project, the employer must find out if any part of an energized electric power circuit, exposed or concealed, is in an area where any person, tool, or the machine might make physical or electrical contact with the electric power circuit during the normal course of the work. This includes both overhead and buried power lines. The employer must then post and maintain proper warning signs where such circuits exist. The employer must also advise all employees of the location of such lines, the hazards involved, and the protective measures to be taken.

Cords and Cables

Extension cords, electric cords on tools, and electrical cables that are worn or frayed will not be used. You must not fasten or hang extension cords with staples, nails, or suspended them with tie wire. Extension cords must be the three-wire double insulated type and rated as heavy duty.

Points to Remember

- Electricity is the flow of energy through a conductor that cannot be seen, smelled, or tasted.
- Electrocution is among the top four causes of fatalities in construction today.
- Electricity flows in a path known as a circuit.
- If electricity stays in its designated circuit, it is harmless.
- Electricity is always seeking a ground and will always follow the path of least resistance to achieve that ground.
- If the grounding system is not complete, then the path of least resistance will likely become your body.
- A large majority of electrocutions are caused by voltages of less than 600 volts.
- A current passing from the hands to the feet creates a fatal pathway through the heart and lungs.
- OSHA requires that all employees be protected from exposure to electrical energy.
- All buried and overhead power must be identified, and steps are taken to ensure that contact with them is avoided.
- The employer must use either ground fault circuit interrupters or an assured equipment

grounding conductor program.

Training

- No person will install or maintain electrical equipment unless that person has been properly trained or is closely supervised by a qualified person.
- Each employee (tool room and equipment user) will be trained to visually check daily for external damage or defects with each piece of electrical equipment before it is used.
- Re-training is required if a lack of proficiency is observed, or when new equipment is introduced.
- All training must be documented, and records kept.

Definitions

Equipment. A general term including material, fittings, devices, appliances, fixtures, apparatus, and the like, used as a part of, or in connection with, an electrical installation.

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

Grounded. Connected to earth or to some conducting body that serves in place of the earth.

Ground-fault circuit interrupter. A device for the protection of personnel that functions to de-energize a circuit or portion thereof within an established period when a current to ground exceeds some predetermined value that is less than that required to operate the overcurrent protective device of the supply circuit.

Location -- **Damp location**. Partially protected locations under canopies, marquees, roofed open porches, and like locations, and interior locations are subject to moderate degrees of moisture, such as some basements.

Dry location. A location is not normally subject to dampness or wetness. A location classified as dry may be temporarily subject to dampness or wetness, as in the case of a building under construction.

Wet location. Installations underground or in concrete slabs or masonry in direct contact with the earth, and locations subject to saturation with water or other liquids, such as locations exposed to weather and unprotected.

Job Competency

Purpose

The purpose of this program is to ensure all employees are appropriately trained and competent to perform their job.

Responsibilities

Supervisors will:

- Ensure all employees assigned to their project meet job competency requirements and complete training identified in the training matrix specific to their location.
- Ensure all employees have sufficient experience to safely perform work without supervision or with only a minimal degree of supervision.

Employees will:

- Attend and follow the requirements of all training provided.

HR Department will:

- Identify, update, and monitor minimum qualification requirements, job titles, and training documentation.
- Supply training reports to clients and Cotton management as requested.

General

At Cotton, our view of competency assurance involves the continuous assessment of training and development needs against a person's responsibilities, abilities, and critical activities.

Organizational Chart

An organizational chart or a list of job titles/roles has been established by Cotton. Based on the positions and their exposure to risk their required training is entered into each worksite's training matrix.

Identification of Minimum Qualifications

Minimum qualification requirements are identified for each role. This may be a combination of education and work experience. The minimum qualifications required to perform each role have been determined and established. Safety training completion for the indicated job title is required before full qualifications are met to allow an employee to begin work.

Documentation

Documentation is obtained from employees to demonstrate they meet the qualifications of their job. HR Department has established a procedure to ensure that documentation is acquired from employees as proof that they are qualified to perform their job duties. Based on the job description requirements documentation may include education, certifications, licenses, prior acceptable training course completion, etc. Documentation is reviewed and confirmed as actual during the employee hiring process.

Training and Competency Needs

Employees (new or transferred) are provided job-specific training related to their roles and responsibilities. All employees must be trained on the tasks they perform regularly. Training is identified in our training matrix which specifies safety and health training needs by job title.

All training records are maintained on-site by the HR Department.

All training must be documented with date; employee name, employee signature; instructor name; instructor signature, and title of course.

Verification Before Being Allowed to Work

Competency is verified before employees are permitted to perform tasks independently. A competent person (supervisor, lead hand, instructor, etc.) should verify that an employee is competent to perform their roles and responsibilities before being allowed to work independently. If there is a site Short Service Employee (SSE) program established the new or transferred employee will fall under the SSE requirements as well.

Training requirements are tracked by the HR Department and training sessions are conducted by competent/qualified instructors for the required subject matter.

Supervisor Safety Management Training

Supervisors and managers receive annual, documented safety management system training.

Jobsite Security

Purpose

The purpose of this plan is to provide guidance and requirements necessary for job site security for our operations.

Responsibilities

Supervisors will:

- Ensure the requirements of this program are followed and implemented.

Employees will:

- Review this program, follow its guidelines, and report any unsafe work conditions.

HSE department will:

- Administer the Jobsite Security Program.

General Information

Cotton is committed to the prevention and/or reduction of security breaches/incidents through the use of risk assessments, Incident Investigations, and corrective actions.

Risk Assessment

A risk assessment must be conducted to evaluate the risk of job site security incidents. Cotton will assess the risk of security incidents. A general Risk Assessment should be performed at the company level to address common risks across job sites. Security should also be addressed at each job site during pre-job meetings/toolbox talks/hazard assessments (JHAs). Affected employees should be provided an opportunity to participate in risk assessments.

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Measures That Can Be Used to Reduce Jobsite Security Incidents

Cotton will implement control measures to reduce or eliminate security incidents. This may include but is not limited to, posted signage, restricted access to work areas, locked doors, keycards, security cameras, alarms, fencing, lighting, personal protective devices, security guards, background checks, time-lock safes, and other robbery prevention measures.

Reporting

Jobsite security incidents must be reported immediately. Cotton will ensure security breaches/incidents are reported immediately. If the incident occurred at a client site, the client host should be notified immediately.

Incident Investigation

An incident investigation will be conducted following a job site security incident. Cotton will ensure an incident investigation will be completed when a job site security incident occurs. The goal of the investigation is to identify root causes and take corrective action to reduce the potential for future incidents.

Training

Employees are informed of the company's job site security policies and procedures. Cotton will ensure employees are trained on policies, procedures, and workplace arrangements to prevent security incidents, the appropriate response (including how to obtain assistance), and procedures for reporting, investigating, and documenting security incidents. Retraining will be provided any time these policies or procedures are changed or updated.

All training will be documented and retained at the corporate office.

Mobile Equipment

Purpose

This program is written to be in compliance with local regulatory requirements and provide directives to managers, supervisors, and employees about their responsibilities in the operations and management of Cotton mobile equipment. It is addressed in other parts of the HSEMS, such as the Driving Safety Program, however, it is a requirement of one of our clients.

Responsibilities

Supervisor will

- Be responsible for the implementation and maintenance of the program for their site and ensuring all assets are made available for compliance with the plan.
- Not knowingly operate or permit a worker to operate mobile equipment which is, or could create, an undue hazard to the health or safety of any person or is in violation of any local or federal regulations.
- Ensure that a competent person service inspects, disassembles, and reassembles a tire or tire and wheel assembly of powered mobile equipment following the specifications of both the tire manufacturer and the manufacturer of the powered mobile equipment.

Employees will:

- Be familiar with this procedure and the local workplace vehicle safety program.
- Follow all requirements, report unsafe conditions, and follow all posted requirements.

HSE Department will:

- Be responsible for developing and maintaining the program and related procedures.

Requirements and Procedures

Cotton has developed and implemented safe work procedures for the use of powered mobile equipment in the workplace and will train workers in those safe work procedures.

Maintenance records for any service, repair, or modification that affects the safe performance of the equipment must be maintained and be reasonably available to the operator and maintenance personnel during work hours

All mobile equipment will be maintained in safe operating condition and operation, inspection, repair, maintenance, and modification will be carried out following the manufacturer's instructions or, in the absence of the instructions, following good engineering practice.

Servicing, maintenance, and repair of mobile equipment will be done when the equipment is not in operation, except that equipment in operation may be serviced if the continued operation is essential to the process and a safe means is provided.

Operation of Mobile Equipment

Only authorized employees are allowed to operate mobile equipment. Operators of mobile equipment must have sufficient education, training, and experience. A worker must not operate mobile equipment unless the worker:

- Is trained to safely operate the equipment,
- Has demonstrated competency in operating the equipment to a designated competent worker,
- Is familiar with the equipment’s operating instructions, and
- Is authorized by Cotton to operate the equipment.

General Requirements

The operator will use the access provided to get on or off of equipment. Do not jump to the ground.

No operator will operate mobile equipment without the protection of an enclosed cab or approved eye protection for the type of hazards to the eye.

The operator will not use or attempt to use any vehicle in any manner or for any purpose other than

for which it is designated.

The operator's manual for powered mobile equipment must be readily available to a worker who operates the equipment.

Backing Up

Mobile equipment in which the operator cannot directly or by mirror or other effective device see immediately behind the machine must have an automatic audible warning device that activates whenever the equipment controls are positioned to move the equipment in reverse, and if practicable, is audible above the ambient noise level.

Equipment will have a working signal alarm while backing up. The operator will make sure the warning signal is operating when the equipment is backing up.

Unauthorized personnel will not be permitted to ride on equipment unless it is equipped to accommodate riders safely.

Inspection

Mobile equipment must be inspected before use. An inspection must be completed before mobile equipment is used each shift to ensure that it is in safe operating condition and that no one will be endangered by the start-up of the equipment. A checklist should be used for pre-use inspections.

The operator will immediately report defects and conditions affecting or likely to affect the safe operation of the equipment to his or her immediate supervisor or other authorized person and confirm this by a written report as soon as possible. If an inspection of powered mobile equipment identifies a defect or unsafe condition that is hazardous or may create a risk to the safety or health of a worker Cotton will ensure that the powered mobile equipment is not operated until the defect is adjusted, repaired or the unsafe condition is corrected.

All powered mobile equipment is inspected by a competent person for defects and unsafe conditions as often as is necessary to ensure that it is capable of safe operation. A written record of the inspections, repairs, and maintenance carried out on the powered mobile equipment is kept at the workplace and made readily available to the operator of the equipment. As soon as is reasonably practicable the defect must be repaired, or the unsafe condition is corrected.

When Left Unattended

No operator will leave unattended a suspended load, machine, or part or extension of it unless it has been immobilized and secured against inadvertent movement.

Powered equipment will not be left unattended unless forks, buckets, blades, and similar parts are in the lowered position or solidly supported.

The operator of mobile equipment must not leave the controls unattended unless the equipment has been secured against inadvertent movements such as by setting the parking brake, placing the transmission in the manufacturer's specified park position, and chocking wheels where necessary.

Journey Management

Before a worker starts any powered mobile equipment, the worker will make a complete 360-degree visual inspection of the equipment and the surrounding area to ensure that no worker, including the operator, is endangered by the startup of the equipment. No worker will start any powered mobile equipment until the inspection is completed.

Control Measures

Where there is a danger to the operator of a unit of powered mobile equipment or any other worker who is required or permitted to be in or on a unit of powered mobile equipment from a falling object or projectile Cotton requires that the powered mobile equipment be equipped with a suitable and adequate cab, screen, or guard.

Operators will wear seat belts before starting the equipment and while the equipment is in use if so equipped. Before starting the engine, the operator will fasten seat belts and adjust them for a proper fit.

Each mobile equipment vehicle used for lifting must be provided with a durable and legible load rating chart that is readily available to the operator.

Equipment will not be loaded beyond its established load limit and the load will be secured for safe transport. The operator will not load mobile equipment beyond its established load limit and will not move loads because of the length, width, or height that have not been centered and secured for safe transportation.

All mobile equipment must be equipped with (a) an audible warning signal; (b) a means of illuminating the path of travel at any time and taillights when, because of insufficient light or unfavorable atmospheric conditions, (c) adequate illumination of the cab and instruments; and (d) a mirror providing the operator with an undistorted reflected view to the rear of the mobile equipment.

Adequate and approved fire suppression equipment will be provided on mobile equipment.

Materials and equipment being transported will be loaded and secured in a manner to prevent movement which could create a hazard to workers or another person. This includes keeping the cab, floor, and deck of mobile equipment free of material, tools, or other objects which could create a tripping hazard, interfere with the operation of controls, or be a hazard to the operator or other occupants in the event of an accident.

Fueling

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

When a worker is required to work beneath elevated parts of mobile equipment including trucks, the elevated parts will be securely blocked.

Spotter

Where the operator of a vehicle, mobile equipment, crane, or similar material handling equipment does not have a full view of the intended path of travel of the vehicle, mobile equipment, crane or similar material handling equipment or its load, the vehicle, mobile equipment, crane, or similar material handling equipment will only be operated as directed by a spotter who is a competent person.

The spotter will be stationed, in full view of the operator and with a full view of the intended path of travel of the vehicle, mobile equipment, crane, or similar material handling equipment and its load, and clear of the intended path of travel of the vehicle, mobile equipment, crane or similar material handling equipment and its load.

Electrical Hazards

Where a vehicle, crane, or similar equipment is operated near a live power line carrying electricity at more than 750 volts, every part of the equipment will be kept at least the minimum distance from the live power line for the particular voltage as required by local or federal law.

Under no circumstance will a worker be directed, required, or permitted to work under or remain in the range of a swinging load or part of a unit of powered mobile equipment due to the inherent danger.

Risk Assessment

Purpose

The purpose of this procedure is to provide guidelines for identifying, assessing, and controlling workplace risks/hazards and to ensure the potential risks/hazards of new processes and materials are identified before they are introduced into the workplace.

Responsibilities

Supervisor will:

- Assess a work site and identify existing or potential risks/hazards before work begins at the work site or before the construction of a new work site.
- Discuss the worksite hazard assessment with employees at the respective work location during the employee's documented orientation.
- Perform formal workplace job hazard analysis to identify hazards and control or eliminate them.

Employee will:

- Report unsafe risks/hazards immediately to their supervisor.
- Participate in the risk identification process and assist the Supervisor in conducting job hazard analysis and implementing risk controls as identified.

HSE department will:

- Revise planning and assessment needs when additional hazards are introduced into the workplace.
- Audit this program and make any changes to it based on changes to regulations, audits and/or incident investigation, and corrective actions.
- Conduct a baseline worksite risk/hazard assessment which is a formal process in place to identify the various tasks that are to be performed and the accompanying identified potential risks/hazards.

Procedures and Requirements

When the Risk Assessment Process is Used

Risk assessments should be performed before work begins to formally identify and assess hazards. A Job Hazard Analysis (JHA) should be developed for all routine tasks. Formal workplace inspections should be performed regularly. Risk assessments and JHAs should be updated whenever changes occur to processes, equipment, and/or facilities.

The hazard identification and risk assessment process should be used for routine and non-routine activities as well as new processes, and changes in operation, products, or services as applicable. The results are included in a report of the results of the risk/hazard assessment and the methods used to control or eliminate the risks/hazards identified. The risk/hazard assessment report must be signed and have the date on it.

Inputs into the baseline risk/hazard identification include, but are not limited to:

- Scope of work.
- Legal and other requirements.
- Previous incidents and non-conformances.
- Sources of energy, contaminants, and other environmental conditions can cause injury.
- Walk through of work environment.

Risks/Hazards identifications (as examples) are to include:

- Working Alone
- Thermal Exposure
- Isolation of Energy
- Hearing Protection
- Musculoskeletal Disorders
- Bloodborne Pathogens
- Confined Spaces

- Driving
- General Safety Precautions
- And any other established policy or procedure by Cotton.
- Any other site-specific work scope

All identified risks/hazards are assessed for risk and risk controls are assigned within the worksite hazard assessment for that specific hazard.

Review of Risk/Hazard Assessment

Existing worksite risk/hazard identifications are formally reviewed annually or repeated at reasonably practicable intervals to prevent the development of unsafe and unhealthy working conditions and specifically updated when new tasks are to be performed that has not been risked assessed, when a work process or operation changes before the construction of a new site or when significant additions or alterations to a job site are made.

Certification of Risk/Hazard Assessment

The Safety Department completes and signs the certification of risk/hazard assessment for the worksite risk/hazard assessment (also see PPE Program) and includes it within the site-specific HSE plan. Risk/hazard assessments are reviewed annually and updated when new tasks are to be performed that have not been risked assessed.

Job Hazard Analysis Overview

Those jobs with the highest injury or illness rates, jobs that are new to our operation, jobs that have undergone major changes in processes and procedures, or jobs complex enough to require written instructions will have a Job Hazard Analysis performed. Job hazard analysis is the process of identifying and evaluating hazards and implementing control measures to eliminate or reduce the potential for loss to personnel, equipment, property, or the environment.

The person completing the Job Hazard Analysis will identify all activities (tasks) in the workplace and prioritize the initial assessments based on the historical frequency of accidents or severity potential (some jobs may not have a history of accidents but may have the potential for severe injury).

The job hazard analysis should evaluate their assigned activities, develops recommended risk controls, reevaluate the residual risk, and brief the job site personnel on the completed JHA.

Process for Identifying Hazards

Cotton should establish procedures to identify existing and potential workplace hazards and assess the risk of associated worker injury and illness.

This program must identify processes that are in place to identify potential hazards by the use of Job Hazard Analysis (JHA), daily hazard assessments, pre-job hazard assessments, and hazard workplace inspection.

Hazards are Classified and Ranked According to Risk

Cotton should establish a formal system for classifying and ranking hazards according to risk. The risk may be determined by analyzing the probability of the hazard causing harm, the frequency the hazard is encountered, and the potential consequences of an impact with the hazard. A risk matrix should be developed to assist employees with risk assessment, such as the one below. The risk matrix is subject to change, but an example is provided.

RISK ASSESSMENT MATRIX

CONSEQUENCE					PROBABILITY				
					A	B	C	D	E
Severity	People	Assets	Environment	Reputation	Not Done	Rarely	Once a week	Several Times in a Week	Multiple Times in a Day

0	No health effect	No damage	No effect	No impact					
1	Slight health effect	Slight damage	Slight effect	Slight impact					
2	Minor health effect	Minor damage	Minor effect	Limited impact					
3	Major health effect	Localized damage	Localized effect	Considerable impact					
4	Single fatality	Major damage	Major effect	National impact					
5	Multiple fatalities	Extensive damage	Massive effect	Global Impact					

Key	Manage for continuous improvement (Low)	Incorporate risk reduction measures (Medium)	Intolerable (High)

Hierarchy of Controls is Used to Reduce the Risk of Harm

The program should demonstrate how identified hazards are mitigated. The hierarchy of controls should be used to mitigate hazards.

When a hazard is identified.

- First attempt to eliminate the hazard.
- If elimination is not practicable, use engineering controls.
- If engineering controls are not practicable, implement administrative controls.
- If the hazard cannot be adequately controlled using engineering and/or administrative controls, employees will use Personal Protective Equipment.

Consideration may include a combination of engineering controls, administrative controls, and Personal Protective Equipment.

Training

Employees are provided training on hazard identification and risk assessment. All employees should be trained on the hazard identification and risk assessment process.

Definitions

Exposure – The potential number of People, Equipment, Material, or Environmental objects that can be affected by a hazard.

Hazard – An activity, situation, or condition that has the potential to cause harm or loss to a person, property, or the environment.

JHA - Job Hazard Analysis

Non-Routine Task – A specific prescribed, detailed course of action that is not performed as part of a regular work routine.

Probability (Frequency) – The likelihood that the potential harm or loss (through exposure to the hazard) will occur.

Residual Risk – The risk remaining when the controls or countermeasures are in place.

Risk – The consequence (also known as severity) of an occurrence multiplied by the probability (also known as frequency) of the occurrence i.e., the risk is comprised of both a measure of severity and the probability of occurrence. In general, for workplace job hazard analysis the following calculation is made Risk = Consequence (Severity) x Probability (Frequency).

Risk Controls – The action(s) identified to reduce the initial identified risk or hazard for each step.

Routine Task – A specific prescribed, detailed course of action to be followed regularly (e.g., a standard procedure), assigned, or done as part of one's duties (e.g., A routine function to be performed).

Slips, Trips, and Falls

Purpose

The procedure describes minimum requirements for providing training and qualification guidelines for the safe operation and prevention of slips, trips, and falls.

Responsibility

Supervisor will:

Provide the necessary training to affected employees and ensure that all employees understand and adhere to the procedures of this plan and follow the instructions of the Cotton HSE Management System.

Employees will:

Be fully qualified and competent in the prevention of slips, trips, and falls.

HSE Department will:

- Developed a comprehensive Health, Safety & Environmental (HSE) Management System for employees, contractors, and subcontractors.

Procedures and Requirements

Prevention

If you are walking you are working.

Falls can cause serious injuries and even death. Most slip, trip, and fall incidents are preventable with general precautions and safety measures.

There are two types of falls:

- **Same Level** - fall to the surface you are walking on. Same-level falls are more common and are usually caused by slips and trips.
- **From Elevation** - Fall to a level below. Falls from elevation are more severe and are usually caused by ladders, stairs, platforms, and loading docks.

Each fall circumstance is different with often many contributing factions. The following provides some general directions to help avoid a slip or fall:

- Wear high traction footwear that is in good condition.
- Slow down, take short careful steps at first then adjust your pace to surface conditions. Point your feet slightly outward to maintain your center of balance.
- Use railings or other stable objects when available.
- Fully wipe your shoes and boots on floor mats.
- Enter and exit your vehicle slowly, holding onto the door and steering wheel while stepping onto or off a slippery surface.
- Be careful, do not rush or take shortcuts, evaluate walking surfaces carefully and always use caution especially during winter months to help yourself avoid a slip and fall.

Housekeeping

Practicing good cleaning habits may be the most important measure in preventing slip and trip incidents. Having a clean and organized working environment will not only help reduce the risk of injuries from these types of incidents, but it will also help employees work more efficiently and increase employee morale - nobody wants to work in a cluttered, dirty, and potentially hazardous environment. Although housekeeping may be delegated to custodial staff in most work environments, it is everyone's job to keep their workplace orderly. Developing a housekeeping program can be done in three easy steps:

- **Plan Ahead** - Know what needs to be done, when it should be done, and what the workspace should look like when you are finished picking up.
- **Assign Responsibilities** - Of course, individuals should be responsible to clean up after

themselves but assigning responsibilities for shared spaces may be helpful to ensure that housekeeping duties are completed.

- **Implement the Program** - Make housekeeping duties a part of the daily routine.

Following this simple rule will reduce the risk of slip and trip injuries:

- If you drop it, pick it up.
- If you spill it, wipe it up.
- Look where you are going and go where you are looking.

Wet or Slippery Surfaces

Wet or slippery surfaces are a major cause of slips. Many surfaces such as marble and ceramic tile can be extremely slippery even when dry. Spills and environmental factors such as rain, snow, and mud add to the problem.

Kitchens, food preparation areas, and restrooms are also at high risk for slippery surfaces.

Simple ways to reduce the occurrence of wet or slippery floors:

- Use anti-skid adhesive tape in high-traffic areas.
- Use absorbent mats in entranceways during inclement weather.
- Display wet floor signs when appropriate, note that signs are a great awareness tool, but should not be the only means of control. Clean up spills and wet floors as soon as practical.
- Use proper mats in areas that are "spill-prone".
- When wet processes are used, maintain proper drainage, or use platforms or mats.

Caution: Unanchored mats may cause slip hazards, themselves - make sure that mats lie flat and that the backing materials will not slide on the floor.

Footwear

Footwear plays a large role in the prevention of slips, trips, and falls. The slickness of the sole and type of heal may cause accidents. Employees who work in environments that could cause foot injuries are required to wear protective footwear. Jobs that are likely to require safety shoes include, but are not limited to:

- Carpenters
- Roofers
- Culinary
- Welders
- Plumber
- Maintenance mechanics
- Grounds workers operating heavy machinery or tools

There are numerous types of safety shoes, including waterproof, slip-resistant, and steel-toed. Care of the shoes is also important. Footwear should be inspected before each use for damage; as shoes wear, their effectiveness may be reduced.

Wearing shoes that have worn soles that are too high of a heel can cause a slip, trip, and fall incidents. Anticipating walking surfaces and environmental conditions and wearing shoes that reflect those conditions will help prevent accidents.

Poor Lighting

Inadequate lighting can hide slip, trip, and fall hazards are associated with an increase in accidents.

Maintaining appropriate lighting in workplaces, public buildings, and at home is an important factor in reducing accidents. Here are some ways that can prevent and control poor lighting conditions in various environments:

- Have light switches accessible, preferably near entrances to rooms.
- Keep a flashlight in a central location to use in case of a power outage emergency.
- If a worker faces a window, shades can be used to reduce glare.
- Move slowly where the light is dim.
- Diffuse light to reduce glare.
- Use a light-colored, matte finish on walls, ceilings, and floors to reduce glare.
- Perform regular maintenance on lighting systems to reduce flickering or burnt-out lights.

Changes in Elevation

Elevation changes are a major source of trip accidents. A change in a walking surface of ¼"-½" or greater will be enough to cause a trip.

Curbs, cracks in the sidewalk, ramps, and single steps are all examples of hazards. Elevation changes may be almost unavoidable, but here are some simple ways to reduce accidents caused by these hazards:

- Place signs to warn walkers of bumps or changes in elevation.
- Use adhesive caution tape to mark changes in elevation or paint curbs or steps yellow to warn walkers.
- If the elevation change is temporary (due to remodeling, etc.) use barricades to create an alternative route to avoid the hazard.

Personal Factors

Numerous personal factors may increase an individual's risk of a slip, trip, or fall. These may include:

- Age.
- Body Shape or mass.
- Gait dynamics (the way an individual walks).
- Physical Condition.
- Perception (an individual's ability to see their awareness of the surroundings).
- Psychological and psychosocial factors (stress and distractions).

Much like being a defensive driver to avoid accidents, one must also be a defensive walker. Here are some simple ways to alter your behavior and avoid hazards:

- Watch where you are going and walking. Pay attention and look for slip, trip, and fall hazards.
- Walk, do not run. Make sure to give yourself enough time to get where you are going.
- Do not engage in activities that may be distracting, for example, reading or writing while walking.
- Use handrails while climbing or descending stairs.
- Check that your walkway is clear and that your view is not blocked before you lift anything.
- Do not carry a load that you cannot see over or around while carrying.
- Walk carefully and slowly when you transition from one walking surface to another.
- Slow down and take small steps if the walking surface is cluttered, narrow, uneven, slippery, or at an angle.
- Wear stable shoes with non-slip soles.

If you must walk on a slippery surface:

- Point your feet slightly outward, keeping your center of balance under you.
- Take slow, small steps.
- Use your feet as probes to detect possible slip, trip, and fall hazards.
- Get your feet underneath your body quickly to maintain your balance after an initial step.
- Pay close attention to the walking surface.
- Use rails or other stable objects that you can hold onto.
- Protect the more vulnerable parts of your body, like your head, neck, and spine, if you fall.

Environmental Factors

Some examples of environmental factors are:

- Temperature and humidity.
- Precipitation.
- Type of volume of traffic in walking areas.
- Walking surface.
- Lighting conditions in walking areas.

Because many of these conditions are out of an individual's control, wearing the right shoes for weather and walking conditions and walking cautiously will help prevent accidents.

Task Factors

Task factors are characteristics of the work performed that can affect the risk of slip, trip, and fall hazards. For example:

- Pushing or pulling objects.
- Shape and weight of an object carried.
- Change in direction while walking.

Although these factors, like environmental ones, sometimes cannot be altered, you can be cautious while transporting objects:

- Limit the number of objects that you carry.
- Ensure the things that you are carrying, pushing, or pulling do not block your view.
- Carry small loads close to your body, maintaining your center of balance.
- Make sure you have a clear path to walk on before beginning tasks.

Stairs

Falls are the second leading cause of fatal accidents (only after automobile accidents), and of those falls, nearly 50% occur on stairs.

Keeping stairs in good repair is essential to prevent accidents. Make sure that stairways have secure handrails and guardrails, even surfaces, even tread heights, and are free of deteriorating coverings such as fraying carpets.

To prevent an accident, awareness and prevention are key. Here are some simple ways to prevent a fall incident on stairways:

- Whether going up or down stairs, always use the handrail.
- Make sure stairways are well lit, with on/off switches at the top and bottom.
- Make sure that the edge of the bottom stair is noticeable - if the stairs and floor have the same carpeting or the same paint color, it may not be obvious where the end of the stairs are located. Painting the edge white or using adhesive caution tape will help differentiate the stairs from the floor.
- If you are wearing footwear such as high heels, slippers, or sandals, take extra caution while going up and down stairs.
- If throw rugs are positioned at the top or bottom of the stairway, make sure they are secured with skid-resistant backing.
- Routinely check stairs for loose or worn carpeting and make repairs when necessary.
- Keep outdoor stairways free of ice, snow, or water accumulation.
- When carrying objects up and down steps, be sure to see where you are stepping and can hold onto the handrail.

The chances of fall accidents in stairways increase with inattention, illness, fatigue, and haste so take care when ascending and descending stairways.

Ladders

There are a few hazards associated with ladder use:

- The ladder structure may deteriorate.
- Ladders may tip sideways, backward, and slip at the bottom.
- Ladders not fully opened or locked may cause the ladder to "walk", twist, or close up when a load is applied to the ladder.
- Using metal ladders around electricity.
- Using fixed ladders without fall protection or cages.

Here are some basic rules you should follow when using a ladder:

- Set up ladders or step stools on firm, solid ground.
- Always face the ladder when ascending or descending.
- Choose the right ladder length for the job.
- Be sure ladders are not muddy, greasy, or slippery before climbing.
- Never lean too far on the sides, keep your hips within the side rails.
- Maintain a "three-point contact" by keeping three limbs on the ladder at all times. for example,

one hand/two feet or two hands/one foot.

- Do not climb higher than the third rung from the top on straight or extension ladders, or the second thread from the top on stepladders.
- Never jump off a ladder - always dismount from the bottom rung.
- Inspect ladders before using.
- If the ladder is set up in passageways or areas with traffic, secure the ladder and block off the area.
- Do not set a ladder or step stool on other objects, such as tables, boxes, or scaffolding.
- Never move a ladder when someone is using it.
- Do not tie ladders, together, unless they are manufactured to be used that way.
- Never leave an unsecured ladder set-up unattended.
- Hold onto a ladder with both hands when going up to down. Raise or lower needed materials with a rope before ascending or descending a ladder.
- Keep ladders at least 10 feet away from power lines. Even wet or dry wood ladders can conduct electricity.
- Use a 4-to-1 ratio when setting up a single or extension ladder. For example, place a 12-foot ladder so that the bottom is 3 feet away from the object the ladder is leaning against.

Definitions

Slip- Occurs when there is too little traction or friction between the shoe and the walking surface and causes off-balance.

Trip- Occurs when a person contacts an object in their way or drops to a lower level unexpectedly, causing them to be thrown off balance.

Fall - Occurs when you are too far off balance.

Stop Work Authority

Purpose

The Stop Work Authority (SWA) process involves a stop, notify, correct, and resume approach for the resolution of a perceived unsafe condition, act, error, omission, or lack of understanding that could result in an undesirable event. All Cotton employees have the authority to stop work when the control of the HSE risk is not established or understood. All employees have the authority and obligation to stop any task or operation where concerns or questions regarding the control of HSE risk exist.

Responsibilities

Supervisors will:

- Ensure a culture is created where SWA is exercised and honored freely to resolve issues before operations resume and recognize proactive participation.

Employees will:

- Initiate a Stop Work Intervention when warranted and management is responsible to create a culture where SWA is exercised freely.

HSE Department will:

- Establish and support clear expectations to exercise SWA, create a culture where SWA is exercised freely and hold those accountable that chose not to comply with established SWA policies.

Requirements and Procedures

Stop Work Authority Steps

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

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

Employees will not be reprimanded for issuing a Stop Work Intervention. Any form of retribution or intimidation directed at any individual or company for exercising their right to issue a stop work authority will not be tolerated.

Follow-Up

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

Stop Work reports will be reviewed by a supervisor or manager to measure participation, determine the quality of interventions and follow-up, trend common issues, identify opportunities for improvement, and facilitate sharing of learnings.

Cotton places high importance on follow-up after a Stop Work Intervention has been initialed and closed. It is the desired outcome of any Stop Work Intervention that the identified safety concern(s) have been addressed to the satisfaction of all involved persons before the resumption of work. Most issues can be adequately resolved promptly at the job site, occasionally additional investigation and corrective actions may be required to identify and address root causes.

Training

Employees are provided training on Stop Work Authority. Employees must receive Stop Work Authority training before the initial assignment. The training must be documented including the employee's name, the dates of training, and the subject.

All-Terrain Vehicles

Purpose

This program is written to be in compliance with local regulatory requirements and provide directives to managers, supervisors, and employees about their responsibilities in the operations and management of Cotton's All-Terrain Vehicles (ATV).

Responsibilities

Supervisor will:

- Be responsible for the implementation and maintenance of the program for their site and ensuring all assets are made available for compliance with the plan.

Employees will:

- Be familiar with this procedure and the local workplace vehicle safety program.
- Follow all requirements, report unsafe conditions, and follow all posted requirements.

HSE Department will:

- Audit this program and make any changes to it based on changes to regulations, audits and/or incident investigation, and corrective actions.

Procedures and Requirements

Driving Safety

Operators of Cotton ATVs will be qualified by possession of a valid, current driver's license for the type of vehicle being driven.

ATVs will be operated following the manufacturer's specifications/recommendations.

No passengers will be allowed on ATVs.

General Requirements

Employees driving vehicles are required to follow safe driving practices:

- Obey all client and local driving laws or regulations as well as requirements of clients.
- Immediately report any collision, vehicle damage, or near miss associated with company or client vehicle operation or while driving on company duties to the supervisor.
- Immediately report any restriction or change to their driving privileges to the supervisor.
- No use of cell phones, radios, or other electronic devices while driving any ATV.
- Slow down around construction, large vehicles, wildlife, fog, rain, snow, or anything else that adds a hazard to your driving.
- Drivers shall not operate an ATV while under the influence of alcohol, illegal drugs, or prescription or over-the-counter medications that might impair their driving skills.

Loading and unloading an ATV onto or off a carrier vehicle must be done safely. If ramps are used when loading or unloading an ATV they must be placed at a suitable angle, be factory manufactured, have a positive means of securing the ramp to the transport vehicle, be sufficiently wide, and have a surface finish that provides an adequate grip for the ATV's tires.

3 wheeled ATVs are not permitted.

Journey Management

Drivers are to be prepared before using an ATV:

- Perform 360 walk-around – report new damage.
- Inspect for vehicle damage and immediately report any damage to the supervisor if not previously observed.
- Make sure dirt or snow is removed from the lights.

Vehicle Requirements

Maximum speed shall not exceed 15 mph.

Each ATV shall be equipped with the following equipment that is checked before use:

- Lighting Package
- Horn
- When surrounding may obscure the visibility of the ATV, a flag that extends 10’ above the pavement

If the manufacturer has not set limits for the operation of the ATV on sloping ground, 5% is the maximum allowable slope.

Training

Cotton will ensure that each ATV operator is properly licensed and trained in the safe operation of the vehicle. The training program for an ATV operator must be documented and cover:

- The operator's pre-trip inspection.
- Use of personal protective apparel.
- Operating skills according to the ATV manufacturer's instructions.
- Basic mechanical requirements.
- Safely loading and unloading the vehicle if this is a job requirement.

Protective Equipment Requirements

When operating the vehicle:

- An ATV operator must wear approved eye and hearing protection as required by local regulatory requirements and the Cotton PPE Program.
- An ATV operator must wear clothing suitable for the environmental conditions and when necessary to protect against the hazards present at the worksite, suitable gloves, clothing that covers the ankles and legs and the arms to the wrists, and appropriate footwear.
- Cotton requires that DOT-approved helmets shall be worn by the operator.

Subcontractor Management

Purpose

The Sub-Contractor Management Plan outlines the relationship between the contractor's project and the methods by which Cotton, as the prime contractor, will assure the production of quality deliverables from each of its Sub-Contractors and assure the development of long-term business relationships between the companies.

Responsibilities

Supervisors will:

- Provide the necessary training to affected employees and ensure that all employees understand and adhere to the procedures of this plan and follow the instructions of the Cotton HSE Management System.

Employees will:

- Be fully qualified and competent in the operation of the Sub-Contractor Management Program.

HSE department will:

- Developed a comprehensive Health, Safety & Environmental (HSE) Management System for employees, contractors, and subcontractors.

General Requirements

All subcontractors are to be managed following this program.

The use of subcontractors must be pre-approved by Cotton. Approval requirements include:

- A formal safety review of the subcontractor will be performed by Cotton.
- The scope of the review is commensurate with the hazards and risk exposure.
- The subcontractor will be oriented to the safety policies, expectations, and requirements of Cotton.
- The subcontractor agrees to abide by our Drug and Alcohol policy and onsite safety rules throughout the work.

Any subcontractor that has a "non-Approved" safety status will not be used on any site.

Procedures and Requirements

HSE Documentation to Obtain from Subcontractors

HSE programs and/or training documentation are reviewed when selecting subcontractors. Written Health, Safety, and Environmental programs and training documentation applicable to the type of work the subcontractor will perform should be obtained and reviewed to assist with the hiring of safe subcontractors.

Subcontractor Incident/Injury Statistics

Incident/injury statistics (e.g., TRIR, EMR) are reviewed when selecting subcontractors. Past performance is a key indicator of future performance. Incident statistics should be obtained and analyzed to ensure that only safe subcontractors are hired. We will obtain a copy of the subcontractor's OSHA Logs and Experience Modifier and compare their performance to others in their industry. Those who outperform the industry should be selected whenever practicable.

Criteria for Selecting Subcontractors

Acceptable safety metrics will be used as criteria for prequalifying and selecting subcontractors in the following manner. Key performance indicators such as the TRIR, EMR, DART, and Fatality rates will be reviewed (see form). The safety metrics and scoring will consider:

- Subcontractor Safety Pre-Qualification responses and subcontractor safety program documents review
- Subcontractor safety training documents review

- Subcontractor safety statistics review

Evaluation Rating and Acceptance

The subcontractor rating system will have five designations:

- A - no restrictions.
- B - The mitigation plan must be documented and approved by Cotton.
- C - The mitigation plan must be documented and approved by Cotton management approval in writing.
- D - Mandatory commitment meeting with senior subcontractor management present; mitigation plan documented and approved; management approval in writing; trained subcontractor safety personnel on-site during work regardless of the number of workers.
- F - not to be used.

Site Orientation

Site orientation is provided to subcontractors. Subcontractors must be provided a site orientation that addresses health, safety, security, and/or environmental concerns.

Subcontractor Involvement

Contractors are required to follow or implement the work practices and systems described below while performing work at Cotton worksites:

- Subcontractors are included in pre-job meetings and/or hazard assessments. Subcontractors will be included in pre-job meetings and JSAs/hazard assessments, pre-job meetings, and/or tailgate meetings.
- Monitor employees for substance abuse and report nonconformities
- Perform a pre-job safety inspection that includes equipment
- Report all injuries, spills, property damage incidents, and near misses
- Comply with onsite and Owner Client safety rules
- Implement safety practices and processes as applicable
- Clean up and restore the worksite after the job is over
- Ensure compliance with regulations at all times

Performance Reviews

Post-job performance reviews are conducted for subcontractors. Post-job performance reviews should be conducted for subcontractors. A combination of factors may be considered including, but not limited to, housekeeping, cost, safety, and quality of work.

Contractual Agreements

A firm or individual contracted to Cotton is responsible for meeting all contractual agreements and for providing a safe and healthy workplace for its employees. The Contractor and/or Sub-Contractor will:

- Provide frequent and regular safety inspections of the worksites, materials, and equipment by competent employees.
- Immediately notify the Project Manager, or of incidents promptly. Incidents include injuries, damage to property and equipment, and near misses.

Immediately notify the Project Manager of non-formal OSHA complaint notifications and/or OSHA visits to the job site.

Drug and Alcohol Policy

We expect all Sub-Contractors to meet the same standards for prevention and testing as established in Cotton Corporate Drug and Alcohol Policy. Sub-Contractors are expected to enforce these requirements among their employees, and Sub-Contractors conduct work on-premises or at controlled work sites. Cotton reserves the right to audit those policies and practices to assess compliance with company requirements. Subcontractors are required to produce proof of their policies and practices. Failure to have an acceptable policy and practices or failure to take action per the applicable policy and practices may result in termination of the Sub-Contractor's agreement for services.

Sub-Contractors must ensure their staff report and remain fit for work while on the premises or controlled work sites. Fit for work means being able to perform assigned duties and responsibilities safely and acceptably without any limitations due to the consumption of alcohol or the use of drugs. When determining an individual's fitness for work, Cotton relies on standard testing methods for blood-alcohol content and the presence of specific drugs.

If an individual is asked to perform services or to return to duty while under the influence of alcohol or drugs (including medications that could impact safe operations) it is the responsibility of that individual to inform the company that they cannot accept the assignment.

In addition, Contractors and Sub-Contractors must prevent inappropriate use of drugs or alcohol as follows:

Contractors and Sub-Contractors must ensure their staff does not:

- Use, possess, distribute, or sell beverage alcohol at the premises or control work sites.
- Report for work with a Blood Alcohol Concentration (BAC) equal to or greater than 0.08 percent.
- Use any product containing alcohol during work hours, meals, or breaks, if they are in Supervisory or Safety sensitive positions.
- Use or possess any drugs or drug paraphernalia that are illegal to use or possess.
- Possess prescribed medications without a legally obtained prescription.
- Use prescribed or over-the-counter medications in an irresponsible manner.
- Intentionally misuse medications that inhibit or may inhibit their ability to perform a job safely and productively (e.g., taking more than the prescribed
- dosage of a medication, taking someone else's prescription medication, combining medication and alcohol).

Sub-Contractor staff is expected to investigate through a doctor or pharmacist whether a medication may interfere with their ability to work safely (e.g., cause drowsiness). They are also expected to take appropriate steps to minimize associated risks.

Safety Data Sheets (SDS)

Sub-Contractor must submit copies of SDS to the Project Manager before using or storing the product on the project site and must ensure that information relating to new products on the project site is passed on to affected personnel.

SDSs will be available to all employees during each work shift. If an SDS is not available, immediately contact the Project Manager or HSE Department.

Container Labeling

The Sub-Contractor will verify that all containers received for use will be clearly labeled as to the contents, note the appropriate hazard warning, and list the name and address of the manufacturer.

The Sub-Contractor will ensure that all secondary containers are labeled with either an extra copy of the original manufacturer's label or with labels that have the identity and the appropriate hazard warning. For assistance with labeling, contact the HSE Department.

Employee Information and Training

Employees who work with hazardous materials or work in an area where hazardous materials are used or stored will be provided with information and training (instruction) on the hazardous substances in their work area:

- At the time of their initial assignment.
- Whenever a new hazardous material or chemical process is introduced into their work area.
- During annual refresher training sessions.

Non-Routine Tasks

When required to perform hazardous non-routine tasks (e.g., cleaning tanks, entering confined spaces, etc.) a special training session will be conducted to inform workers about the hazardous chemicals to which they may be exposed, and the proper precautions to take to reduce or avoid exposure.

Fire Prevention and Protection

The Sub-Contractor will carry out provisions for fire prevention and protection as follows:

- **Housekeeping**: Good housekeeping, with provision for prompt removal and disposal of accumulations of combustible scrap and debris, will always be maintained in all areas of the job site. Self-closing metal containers will be used for the disposal of waste saturated with flammable liquids.
- **Codes and regulations**: The Contractor and/or Sub-Contractor will comply with the requirements published in the current revisions of the National Electrical Code, National Electrical Safety Code, and the National Fire Protection Association standards.
- **Fires:** Fires and open flame devices will not be left unattended unless protected with automatic temperature control and cutoff devices.
- **Cleaning and degreasing**: Flammable or combustible liquids will not be used for cleaning and degreasing.
- **Smoking**: Smoking or other sources of ignition will not be permitted in areas where flammable or explosive materials are stored or are present. All such areas will be conspicuously posted: NO SMOKING OR OPEN FLAMES. Smoking is permitted in an approved area only.

Noncompliance with HSE Regulations

If during the contract, situations of non-compliance with HSE laws, regulations, or safety and health requirements are observed, the Project Manager will bring them to the attention of the Contractor and/or Sub-Contractor.

Failure to correct the violation within the prescribed timeline or continued violations may be grounds for termination of the contract. If after notifying the Sub-Contractor in writing of deficiencies in any health, safety, or environmental requirements, Cotton personnel find continued violations of those requirements, or find actions that pose an imminent danger, an immediate order to stop work will be issued. Such violations may result in the default of the contract.

The Project Manager or designated alternate will document all violations brought to the attention of the Sub-Contractor.

Safety Training

The Sub-Contractor must ensure that its employees have completed appropriate HSE training when required by statute/regulation and provide documentation of such training when required by the contract, or when requested by Cotton.

Personal Protective Equipment (PPE)

Unless otherwise specified, all project sites always require the use of hard hats and safety glasses. Minimum clothing requirements include short sleeve shirts, long trousers, hard hats, safety glasses, and sturdy work boots. The wear of tennis shoes, sandals, loafers, etc. is prohibited.

Unless otherwise specified, the Contractor and/or Sub-Contractor is responsible for providing all necessary safety and personal protective equipment for its employees as required by its work operations. This equipment must meet appropriate OSHA and ANSI approval requirements and be in good working order.

The Contractor and/or Sub-Contractor will ensure that its employees have received appropriate training on the use and maintenance of safety and personal protective equipment before its use.

Trenching and Excavation

Purpose

The purpose of this training program is to protect employees from safety hazards that may be encountered during work in trenches and excavations. When work is performed on a non-owned or operated site, the operator's program will take precedence; however, this document covers Cotton employees for basic awareness purposes that address all items and will be used when an operator's program does not exist.

Responsibilities

Supervisors will:

- Take reasonable and practical measures to have site equipment serviced, maintained, and operated by qualified personnel.
- Ensure workers have received proper instruction and training in the safe use of related equipment and personal protection equipment before performing this type of activity.

Employees will:

- Adhere to the safety requirements regarding this specific task. The worker will advise HSE Management of any damage, deviation in operation, excessive wear, etc., before using equipment or related materials.

HSE Department will:

- Determine if this program is required for regulatory compliance within their division.
- Audit this program and make any changes to it based on changes to regulations, audits and/or incident investigation, and corrective actions.

Procedures and Requirements

The Competent Person is responsible for the oversight of the trenching and excavation done on a job site.

Protective Systems or Equipment

- Monitoring water removal equipment and operations.
- Removal of workers if conditions dictate.
- Atmospheric testing.
- Inspect excavations subject to runoff from heavy rains to determine the need for diversion ditches, dikes, or other suitable protection.
- Determining cave-in potential to assess the need for shoring or other protective systems.
- Examining damaged material or equipment used for protective systems to determine its suitability for continued use.
- Classifying soil and rock deposits, by both visual analysis and by testing, to determine appropriate protection; re-classifying, if necessary, based on changing conditions.
- Determining the appropriate slope of an excavation to prevent collapse due to surcharge loads from stored material or equipment, operating equipment, adjacent structures, or traffic, and assuring that such slope is achieved.

Inspecting Trench and Protective Systems

Inspections before entry and authorizing immediate removal of employees from the hazardous area where evidence of possible cave-in, failure of protective systems, hazardous atmospheres, or other hazardous conditions exists.

Safe Access/Egress

Designing structural ramps or ladders that are used solely by employees as a means of access or egress. Structural ramps used for access or egress of equipment must be designed by a competent person qualified in structural design.

Utilities and Pre-work Site Inspection

The location of underground installations will be determined before excavation. When utility companies or owners cannot respond to a request to locate underground utility installations within 24 hours, or cannot establish the exact location of these installations, Cotton may proceed, provided it does so with caution and provided detection equipment or other acceptable means to locate utility installations are used.

Excavation will be done in a manner that does not endanger the underground installations or the employees engaged in the work. Utilities left in place will be protected by barricades, shoring, suspension, or other means as necessary to protect employees.

Protection of the Public

Barricades, walkways, lighting, and posting will be provided as necessary for the protection of the public before the start of excavation operations. Guardrails, fences, or barricades will be provided on excavations adjacent to walkways, driveways, and other pedestrian or vehicle thoroughfares. Warning lights or other illumination will be maintained as necessary for the safety of the public and employees from sunset to sunrise.

Wells, holes, pits, shafts, and all similar hazardous excavations will be effectively barricaded or covered and posted as necessary to prevent unauthorized access. All temporary excavations of this type will be backfilled as soon as possible.

Protection Against Falls

Walkways or crossings will be protected by standard guardrails or railings will be provided where employees and the general public are permitted to cross over excavations. Where workers in the excavation may pass under these walkways or bridges, a standard guardrail and toe board will be used.

Protection of Workers in Excavations

Access and Means of Egress

Stairs, ladders, or ramps will be provided where employees are required to enter trench excavations over 4 feet deep. The maximum distance of lateral travel (e.g., along the length of the trench) required to reach the means of egress will not exceed 25 feet.

A clear area, of at least two feet in width, must be maintained on each side of the excavation. Trees, poles, or any other objects, which may be undermined, or made unstable by the excavation process must be removed, supported, or otherwise protected from the excavation process.

Heavy equipment (i.e., excavators, backhoes, dump trucks, Vac trucks, etc.) must not be placed close to the edge of an excavation unless additional bracing has been installed or were permitted as per a professional engineer's certification.

Structural Ramps

Structural ramps used solely by employees as a means of access or egress from excavations will be designed by a competent person. Structural ramps used for access or egress of equipment will be designed by a person qualified in structural design and will be constructed following the design.

Ramps and runways constructed of two or more structural members will have the structural members connected to prevent movement or displacement. Structural members used for ramps and runways will be of uniform thickness.

Cleats or other appropriate means used to connect runway structural members will be attached to the bottom of the runway or will be attached in a manner to prevent tripping.

Structural ramps used in place of steps will be provided with cleats or other surface treatments on the top surface to prevent slipping.

Ladders

When portable ladders are used, the ladder side rails will extend a minimum of 3 feet above the upper

surface of the excavation.

Ladders will have nonconductive side rails if work will be performed near exposed energized equipment or systems.

Two or more ladders, or a double-cleated ladder, will be provided where 25 or more employees will be conducting work in an excavation where ladders serve as the primary means of egress, or where ladders serve two-way traffic.

Ladders will be inspected before use for signs of damage or defects. Damaged ladders will be removed from service and marked with "Do Not Use" until repaired.

Ladders will be used only on stable and level surfaces unless secured. Ladders placed in any location where they can be displaced by workplace activities or traffic will be secured, or barricades will be used to keep these activities away from the ladder.

Non-self-supporting ladders will be positioned so that the foot of the ladder is one-quarter of the working length away from the support.

Employees will not be allowed to carry any object or load while on the ladder that could cause them to lose their balance and fall.

Exposure to Vehicular Traffic

Employees exposed to vehicular traffic will be provided with and will wear vests or other suitable garments marked with or made of reflectorized or high-visibility material. Warning vests worn by flagmen will be of reflectorized material if worn during night work.

Employee Exposure to Falling Loads

No employee will be permitted underneath loads (or where loads may fall) handled by lifting or digging equipment. Employees will be required to stand away from any vehicle being loaded or unloaded to avoid being struck by any spillage or falling materials. Operators may remain in the cabs of vehicles being loaded or unloaded when the vehicles provide adequate protection for the operator during loading and unloading operations.

Warning System for Mobile Equipment

A warning system will be used when mobile equipment is operated adjacent to the edge of an excavation if the operator does not have a clear and direct view of the edge of the excavation. The warning system will consist of barricades, hand, or mechanical signals, or stop logs. If possible, the grade should be away from the excavation.

Hazardous Atmospheres

The atmosphere will be tested for air contaminants (oxygen, flammable gases, etc.) in excavations over 4 feet deep or if a hazardous atmosphere exists or could reasonably be expected to exist. A hazardous atmosphere could be expected, for example, in excavations in landfill areas, in excavations in areas where hazardous substances are stored nearby, or in excavations near or containing gas pipelines.

Adequate precautions will be taken to prevent employee exposure to atmospheres containing less than 19.5 percent oxygen and other hazardous atmospheres. These precautions include providing proper respiratory protection or forced ventilation of the workspace.

Forced ventilation will be provided where necessary to ensure the atmosphere is safe. When controls are used that are intended to reduce the level of atmospheric contaminants to acceptable levels, continuous air monitoring will be performed. The device used for atmospheric monitoring will be equipped with an audible and visual alarm.

Atmospheric testing will be performed using a properly calibrated direct reading gas monitor. Direct reading gas detector tubes or other acceptable means may also be used to test potentially toxic atmospheres.

Personal Protective Equipment

Head Protection: All employees working in trenches or excavations will wear approved hard hats

Foot Protection: All employees working in trenches or excavations will wear approved steel-toed shoes or boots.

Eye and Face Protection: Employees exposed to flying fragments, dust, or other materials produced by drilling, sawing, sanding, grinding and similar operations will wear approved safety glasses with side shields.

Employees exposed to hazards produced by or performing, welding, cutting, or brazing operations will wear approved spectacles or a welding face shield or helmet.

Hand Protection: Employees will wear approved gloves or other suitable hand protection.

Hearing Protection: Employees using, or working near, hammer drills, masonry saws, jackhammers, or similar high noise-producing equipment will wear suitable hearing protection.

Fall protection: Employees entering bell-bottom pier holes or other similar deep and confined footing excavations will wear a harness with a lifeline securely attached to it. The lifeline will be separate from any line used to handle materials and will be individually attended to at all times while the employee wearing the lifeline is in the excavation.

Each employee at the edge of an excavation 6 feet or deeper will be protected from falling. Fall protection will be provided by guardrail systems, fences, or barricades.

Emergency Rescue

Emergency rescue equipment, such as a breathing apparatus, a safety harness, and line, and a basket stretcher will be readily available where hazardous atmospheric conditions exist or may develop during work in an excavation. This equipment will be attended to when in use. Only personnel that have received approved training and have appropriate equipment will attempt retrieval that would require entry into a hazardous atmosphere.

Definitions

Accepted engineering practices mean the standards of practice required by a registered professional engineer.

Aluminum Hydraulic Shoring means a manufactured shoring system consisting of aluminum hydraulic cylinders (cross braces) used with vertical rails (uprights) or horizontal rails (wales).

Bell-bottom pier hole means a type of shaft or footing excavation, the bottom of which is made larger than the cross-section above to form a belled shape.

Benching (Benching system) is a method of protecting employees from cave-ins by excavating the sides of an excavation to form one or more horizontal steps, usually with vertical or near-vertical surfaces between levels.

Cave-in means the movement of soil or rock into an excavation, or the loss of soil from under a trench shield or support system, in amounts large enough to trap, bury or injure and immobilize a person.

Cross braces mean the horizontal members of a shoring system installed from side to side of the excavation. The cross braces bear against either uprights or Wales.

Excavation means any man-made cut, cavity, trench, or depression in an earth surface formed by earth removal.

Faces or sides mean the vertical or inclined earth surfaces formed as a result of excavation work.

Failure means the movement or damage of a structural member or connection that makes it unable to support loads.

A hazardous atmosphere means an atmosphere that is explosive, flammable, poisonous, corrosive, oxidizing, irritating, oxygen deficient, toxic, or otherwise harmful, which may cause death, illness, or injury.

Health Safety Officer means the individual at the company responsible for developing and implementing this program, conducting unannounced work site inspections, and ensuring that the departments comply with the program requirements.

Kickout means the accidental movement or failure of a cross brace.

A protective system means a method of protecting employees from cave-ins, from material that could fall or roll from an excavation face into an excavation, or from the collapse of adjacent structures. Protective systems include support systems, sloping and benching systems, shield systems, and other systems that provide the necessary protection.

A ramp means an inclined walking or working surface that is used to gain access to one point from another. A ramp may be constructed from earth or structural materials such as steel or wood.

Sheeting means the members of a shoring system that retain the earth in position and turn are supported by other members of the shoring system.

Shield (Shield system) means a structure used in excavation to withstand cave-ins and which will protect employees working within the shield system. Shields can be permanent structures or portable units moved along as work progresses. Shields used in trenches are usually referred to as "trench boxes" or "trench shields."

Shoring (Shoring system) means a structure that is built or put in place to support the sides of an excavation to prevent cave-ins.

Sloping (Sloping system) means sloping the sides of the excavation away from the excavation to protect employees from cave-ins. The required slope will vary with soil type, weather, and surface or near surface loads that may affect the soil in the area of the trench (such as adjacent buildings, vehicles near the edge of the trench, and so forth).

Stable rock means natural solid mineral material that can be excavated with vertical sides that will remain intact while exposed.

A structural ramp means a ramp built of steel or wood, usually used for vehicle access. Ramps made of soil or rock are not considered structural ramps.

A support system means a structure such as underpinning, bracing, or shoring, which provides support to an adjacent structure, underground installation, or the sides of an excavation.

Tabulated data means tables and charts approved by a registered professional engineer and used to design and construct a protective system.

Trench (Trench excavation) means a narrow excavation (about its length) made below the surface of the ground.

Uprights mean the vertical members of a trench shoring system placed in contact with the earth and usually positioned so that individual members do not contact each other. Uprights placed so that individual members are closely spaced, in contact with, or interconnected to each other, are often called "sheeting."

Wales are horizontal members of a shoring system placed in the direction of the excavation face whose sides bear against the vertical members of the shoring system or earth (the uprights or sheeting).

Working Alone

Purpose

Cotton will provide a safe work environment for its employees. In doing so, it will take all reasonable and practical measures to eliminate or minimize injury or incident risks associated with the nature of the work performed when employees work alone.

Objectives

To minimize risk to employees who may work alone and assistance is not readily available Cotton will:

- Conduct written hazard assessments to identify existing or potential working-alone hazards.
- Take measures to eliminate or control the hazards of working alone at worksites.
- Ensure that affected employees are informed of the hazards and methods used to control or eliminate them.
- Provide an effective system for communication between any employee who works alone and persons capable of assisting the employee.
- Ensure all incidents (working related or otherwise) are reported, investigated, and documented.
- Review This program at least annually or more frequently if there is a change in work arrangements that could adversely affect an employee's well-being or a report that the system is not working effectively.

Responsibilities

Supervisor will:

- Be responsible for the implementation and maintenance of this program for their project and ensuring all assets are made available for compliance with the procedure.
- Take all reasonable and practical steps to minimize or eliminate identified working-alone risks.
- Review the hazard assessment results and provide recommendations to management to minimize or eliminate identified working alone risks.
- Review annually the effectiveness of the policy and guidelines and make changes as required by consulting with management staff and employee representatives.
- Respond to employee concerns related to working alone and communicate these to management.
- Report all incidents of work site incidents immediately.
- Participate in worksite hazard assessments and the implementation of procedures to eliminate or control hazards of working alone.

HSE Department will:

- Conduct a hazard assessment to identify existing or potential hazards related to the nature of the work or the work environment when working alone.
- Be responsible for the review, implementation, and maintenance of the local worksite Working Alone Plan.
- Communicate this policy and its procedures to employees who work alone
- Annually review the effectiveness of the hazard controls and procedures and make improvements as required.

Safe Work Procedures

This procedure applies if an employee is working alone at a work site where assistance is not readily available if there is an emergency, or if the employee is ill or injured.

Worksite Assessment

A hazard assessment for working alone will anticipate work and travel time, weather, communication, type of work, employee medical conditions, and training. The hazard assessment will address hazards and identify control measures to minimize the risk associated with working alone.

The hazard assessment will be conducted on a project-by-project or site basis as circumstances vary

between locations and conditions. To assess this hazard Cotton should review records, and past incidents and identify measures or actions needed to correct any hazards. The assessment should involve:

- Participation by employees through methods such as one-on-one interviews, kick-off safety meetings, etc.
- The assessment should utilize information from employees about their experiences working alone, their current concerns, and their suggestions for improvement.
- Consideration for the time interval between checks and the procedure to follow in case the employee cannot be contacted, including provisions for emergency rescue.

Communication and Regular Contact Person System

Workers will carry a cellular phone or electronic monitoring device at all times while working alone. The use of radio, cellular/satellite phone, electronic monitoring device, or another form of direct, reliable correspondence shall be used to establish an effective means of communication is established between the lone employee and the designated check person.

Each site-specific Working Alone Plan will address a check-in/check-out process where employees are monitored or contacted at regular intervals. Individuals must be monitored at regular intervals or the individual contacts the Supervisor at pre-determined intervals based on determinations made in the risk assessment.

Individual(s) by job function responsible for establishing contact with the affected employee, as well as a backup form of communication will be established for each site-specific plan. The Supervisor or designee is responsible for check-in with the lone employee at regular intervals.

A backup form of communication in the event primary communication (cell phone or landline) is unavailable will be via satellite phone or if electronic communication is not practicable or readily available at the worksite, the Supervisor or another competent employee visits the employee at regular intervals. The Supervisor should document communication employee status at the check-in intervals.

These visits or contacts will be at intervals of time appropriate to the nature of the hazards associated with the employee's work.

Procedures to be Followed if a Worker Working Alone Does Not Respond

Considerations such as length of time missing, weather conditions, physical fitness, etc. must be factored into the site-specific working alone program. The program should specify procedures for emergency response including provisions for contacting appropriate local officials. The program will identify specific criteria to determine when an employee search is necessary. The minimum requirements include:

- If the working alone employee fails to respond at the scheduled contact time repeated contact efforts will be made for 1 hour.
- If the employee working alone is not contacted within 1 hour of the scheduled contact a designated individual will be dispatched for a search to the working location within proximity. If the working alone employee is not found, then the closest police (city) or governmental search and rescue authority shall be notified to conduct a search
- If the employee working alone is not within proximity and does not respond to repeated contact efforts, then the closest police (city) or governmental search and rescue authority shall be notified to search.

Limitations on or Prohibitions of Specified Activities

- No heavy equipment will be operated if a worker is alone.
- No hot work will occur if a worker is alone.
- No working at heights will occur if a work is alone and requires a personal fall arrest system.
- Other limitations will be placed based on the site-specific hazard assessment

Minimum Training or Experience

All employees will be trained (if working alone is a hazard at that location) in:

- Any revision to the written local Working Alone Plan and safe work practices.

- Being informed of working-alone hazards at the worksite and the methods used to control or eliminate them.
- The identification methods, hazard reduction, and prevention when working alone and dealing with situations or individuals that present a potential risk.
- A worker is required to work alone and any person assigned to check on the worker must be trained in the written procedure for checking the worker's well-being.

All training shall be documented.

Provisions of PPE

- Cold weather clothing shall be worn when appropriate if a worker is alone in cold weather.
- Additional PPE for workers working alone will be identified in the site-specific hazard and PPE assessment process.

Safe Work Practices

Controls implemented at worksites shall, as a minimum:

- Restricted building access to buildings - card keys or regular keys after regular working hours.
- Office doors are to be locked when working alone after hours.
- Have employees check road reports and weather forecasts before traveling and not allow travel if road conditions are dangerous.
- Develop a travel plan that includes rest breaks, a procedure for tracking overdue employees, and emergency contact information.
- Advise employees to travel with another employee when possible.
- Advise employees to park close to the building in the evening.
- Post signage, and emergency contact information, and develop a communication system.
- Report suspicious activity to security or a supervisor.

Provision of Emergency Supplies

When working alone all vehicles should contain the appropriate emergency supplies including flares, marking devices, food, water, warm clothing during winter, and other supplies as determined by the hazard assessment.

Workers working alone shall have spare batteries for communication devices in case of power failure, a radio for local weather conditions, and other equipment as determined by the hazard assessment.

If an employee requires personal medication, they must ensure they have sufficient supplies available.

Review & Updating Working Alone Plan

The hazard assessment and Working Alone Plan at each worksite must be reviewed at least on an annual basis or more frequently if there is a change in work processes or arrangements which could adversely affect an employee’s well-being are introduced or changed.

The local Working Alone Plan will also be revised if there is any indication or report that the plan is not working effectively or needs changing.