Environmental Health & Safety Handbook

REV 009 - 2022

Contents

Acknowledgement

Health and Safety Handbook

Sign this page and return to Global Inspection Services office.

- *I have received the Global Inspection Services Health and Safety Handbook.*
- *I understand that the failure to comply with the Global Inspection Services Handbook and or Client specific safety requirements may lead to disciplinary actions and including up to termination.*
- *Before I conduct any task, I will understand all Global Inspection Services safety policies.*
- *I will not undertake any work activities that I cannot safely perform*
- *I will bring to the attention of my Supervisor or member of Management any safety concern I may have.*
- *We are including with this Handbook an" Accident/Incident Notification Report" This report shall be completed, signed, and returned to GIS office within 24 hours. In addition, Management for Global Inspection Services will need to be notified the same day of the incident, no matter the severity*
- *I understand that I am required to notify GIS Management in the event of any injury or possible injury* ***as soon as possible****.*
- *I will comply with all training requirements that GIS Management sets forth by this handbook as soon as possible, but no later than the 30th day of employment.*

After reading the *Global Inspection Services* Health and Safety Handbook, if you have any questions, ask any Supervisor or member of Management for clarification.

_____

Employee Name

_____ _____

Employee Signature Date

Preamble

Welcome to the Global Inspection Services, LLC Environmental, Health & Safety Handbook.

In July of 2015, Global Inspection Services rolled out our initial Health and Safety Handbook. With the assistance of each one of our employees, and the dedication of our staff to meet the ever-changing needs of our client's, we have accomplished a remarkable task. We achieved high ratings within the mechanism's that our client's use to track compliance, and to this we owe a great deal of gratitude to each one of our employees. Without you, we could not have accomplished this goal!

Our safety statistics for 2020 is as follows, we had zero incidents**.** We will Strive to repeat this in 2022. This is a highly obtainable goal for the coming year. This can be achieved because we all work together and made a concretive effort to follow the rules and procedures in this handbook. By doing this we benefit not only our clients but secure a successful company for all of us to work for.

We **will** obtain ***zero*** incidents/accidents.

To meet our client's ever-changing requirements, we have improved our existing handbook and included additional sections to our 2022 EH&S Handbook, to continue meeting the demands of our industry.

Safety is the single most important component of our business. Our clients demand that all activities we are involved with are done safely; this expectation is on each one of us individually and collectively as a company. Global Inspection Services also expects that our company and its employees support our program and share a commitment to safety compliance and performance.

GIS is committed to safety, and we are continuing to commit additional resources to our employees to help ensure a safe work environment. We have developed this Environmental Health & Safety handbook to help us ensure required training is effectively achieved and properly documented.

This handbook comes with an instruction page, but we wish to reiterate the following:

- Each employee will need to go through the handbook read and understand the contents.
- We encourage collaboration and discussion among our employees when reviewing the material, and the handbook will be used for reference at the job site.
- Remember that you will get out of this training what you put into it. This training is for your personal safety and for those working around you. Do not compromise your safety or those working around you by not being properly informed.

In closing, please consider the following,

- Virtually all accidents/incidents are preventable, maybe not by the individual injured but by the neglect or lack of action by others. We need to not only demand safe activities from ourselves but also by those working around us.
- Safety performance on the jobs we are around affects our job security. One of the fastest ways to be terminated from a project is to have a contractor incident on the job. It may not be fair to

hold a consultant solely accountable for a job's safety performance, but the harsh reality is, that on more than

- one occasion our consultant was held responsible for the incident.
- There is no timetable, deadline, or any other activity that we are involved with that is worth getting injured or killed to get accomplished. The "reward" **NEVER** exceeds that risk.
- If you are unsure of how to safely do an activity or are not qualified to do something you are asked to do, please do not do it. Call this office and speak with a member of management and we will help you resolve the issue.
- If you feel compelled to take shortcuts or allow unsafe work practices, please stop, and call the office. We do not want GIS employees associated with unsafe work practices.
- **It is imperative that you notify this office if an injury, incident, or safety infraction has occurred on your project even if it does not involve GIS personnel. In this litigious society we need to know this information. An Incident Report form is included in this handbook (Section 25)**
- If you are injured, or believe you may have been injured, please notify this office **immediately**. We have had a few issues where employees have become injured and opted to try to "work through it". After a few weeks they are still hurting and need to get medical attention. GIS's insurance carrier then becomes involved, and we end up defending the validity of the claim. This courtesy notification even if you opt not to seek immediate medical attention helps protect both yourself and GIS.
- The safety pyramid – the number of near misses is related to the number of recordable incidents which in turn is related to the number of injuries. The number of injuries is related to the number of workplace fatalities. To effectively eliminate injuries and fatalities, **we must minimize near misses, and ensure they are reported to management.**

Thank you in advance for your efforts in implementing our "Safety" program participation and taking proactive steps in helping to provide yourself, co-workers, clients, and contractors a safe and healthy work environment.

Introduction

This Health, Safety, & Environmental Handbook is the official handbook for Global Inspection Services, LLC. This handbook is being furnished to all Global Inspection Services, LLC employees to develop safety and environmental awareness and thereby prevent personal injury, damage to property, and the environment both on and off the job. It covers many situations you may encounter and provides safety principles for you to follow, but it cannot cover every situation that arises, nor can every safe work practice be listed. By following the guidelines set forth in this handbook, using good judgment, and always being mindful of safety and environmental issues, all operations can be accomplished in a safe manner.

Global Inspection Services, LLC is committed to providing a safe and healthy work environment for all our employees. Please follow all instruction listed in this handbook. If you have any questions, please contact any member of GIS management.

Federal, State, regulations, from which much of this material was derived, are by extension, to be considered a part of this handbook and must be followed. It is the responsibility of each employee to protect themselves, their fellow workers, the public, and the environment. You are urged to become familiar with this handbook, refer to it frequently, and comply with all the principles contained herein.

If you have any questions regarding this handbook or the means necessary to perform your job in a safe and environmentally sound manner, please discuss them with your supervisor.

_____

Melissa Sanford

President.

Safety Handbook Instructions

One of the primary goals at Global Inspection Services, LLC, is to keep its employees safe while they work. As in most organizations, the key to continued success is to develop, maintain, and promote a successful safety program.

Employee Responsibility

- The only way for our program to be successful is the "buy in" from our employee's. Having the program and policies in place that will allow our staff to be trained, qualified and prepared, when the unexpected occurs.
- We have developed a safety handbook consisting of 43 sections, we expect all our employees to be familiar with each section.
- If there are regulations in place that you do not understand or agree with, please let us know.

If you feel that we have left off an area of importance, please let us know....

GIS is compelled to meet the necessary requirements that our clients expect us to meet we are eager to see any feedback that might be provided by our employees.

Emergency Action Plan

Purpose

This plan is for the safety and wellbeing of the employees of Global Inspection Services, LLC. It identifies necessary management and employee actions during fires and other emergencies. Education and training must be provided so that all employees know and understand the contents of the Emergency Action Plan.

Location of Plan

Each employee of this office has been provided a copy of this plan. A copy will also be maintained in our Environmental Health and Safety Handbook.

Any questions concerning this plan should be directed to plan preparer.

Emergency Policy

It is the policy of this office that all employees should evacuate the premises in case of fire or other emergency.

Alarm Systems and Notification of Emergencies

In an emergency, office employees will be notified by the following means of notification: **Air Horn** Longview office.

Warning for necessary emergency action will be as follows for the Longview office:

1 blast for- Fire Evacuation – Follow posted evacuation route for evacuation of the building.

2 short blasts – Tornado – Take cover immediately.

3 short blasts – All Clear

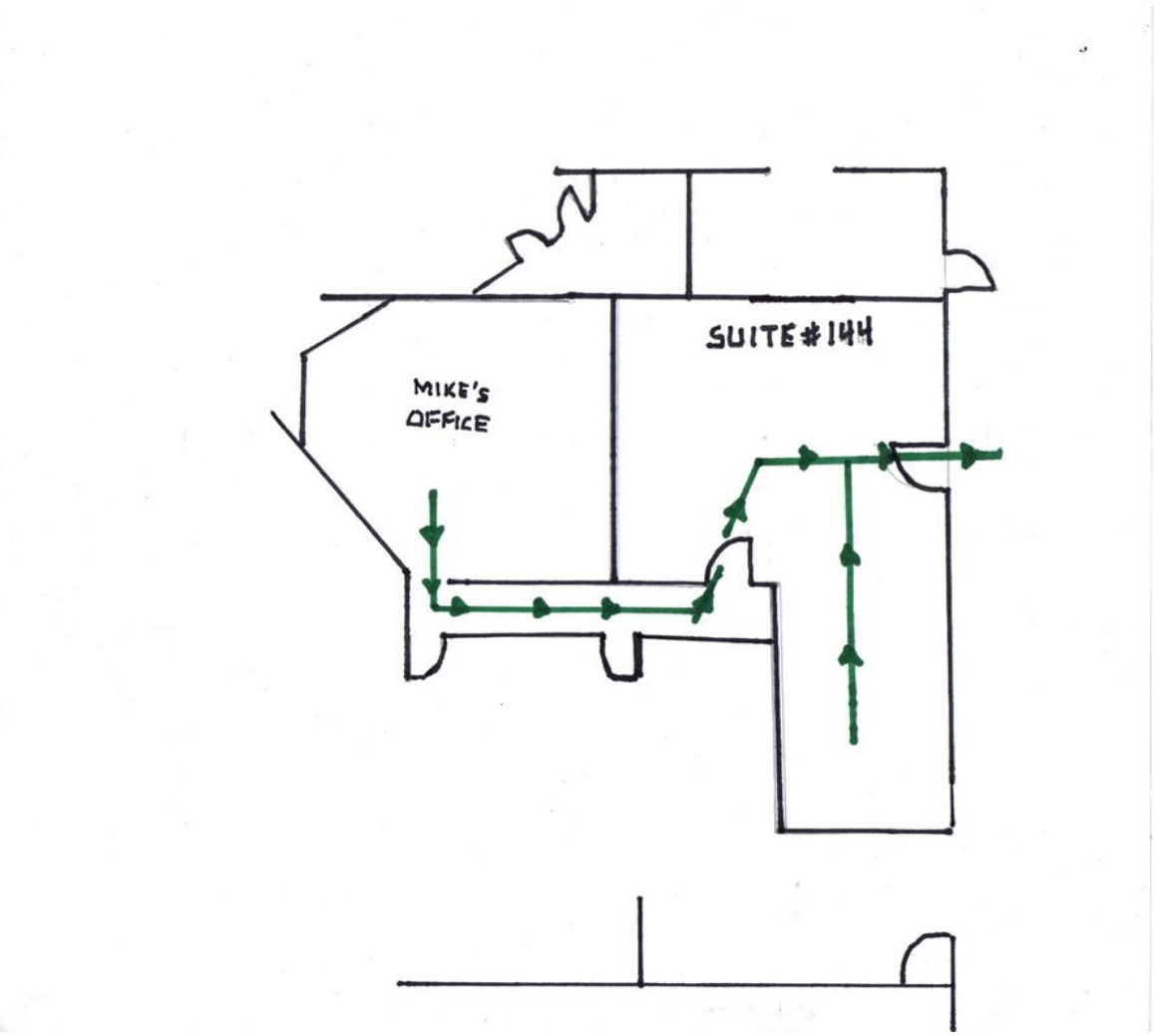
In the event of a personal threat (hostile person at front desk) the receptionist will notify Mike White via phone by saying “Can you meet me at the front desk”. In the event Mike White is not in the office, the receptionist will contact the requested employee by phone using the phrase “Can you meet me at the front desk”. Upon receipt of the code phrase the building will be immediately evacuated and 911 called to report the threat.

Escape Procedures and Exit Routes

All exits will remain unlocked and unobstructed during work hours. All employees must exit the facility in a quiet and orderly manner.

Employees must leave according to their whereabouts at time of incident.

This plan was prepared by Philip Sage, CSHO



Diagrams of the various exit routes will be posted prominently in the work areas and are inserted into this plan.

Reporting Emergencies

An employee, upon discovering an emergency, shall immediately notify other employees in the situation and sound an appropriate alarm. As soon as safely possible, the situation shall be reported to the appropriate outside emergency personnel:

Type of Emergency	Phone Number
Fire	911
Bomb Threat	911
Medical Emergency	911
Electrical Hazard	911
Other Safety or Health Hazards	911

These Emergency Numbers Shall Be Prominently Posted Near Each Telephone in the Office

Within this office, the following personnel have the duty to ensure that outside emergency personnel have been contacted. They are also responsible for coordinating with outside emergency personnel on the scene and providing directions to the site of the emergency. These personnel are listed in descending order of availability.

Melissa Sanford: CEO	936-554-9909
Michael Sanford: COO	936-554-8896
Mike White: VP of Operations	903-746-5435

Accounting for Employees

After exiting the building, all employees are to assemble for roll call at the following location:

West Parking Lot_____.

The following employees are responsible for ensuring that employees comply with this requirement, conducting the roll call and reporting to outside emergency personnel the last known location of any missing employees. Those responsible for reporting are listed in descending order of availability.

Melissa Sanford: CEO

Michael Sanford: COO

Mike White: VP of Operations

Rescue and Medical Duties

The following personnel are trained and certified in both CPR and First Aid. In case of medical emergency, they are available to assist until the outside emergency personnel reach the scene.

Mike White: VP of Operations	903-746-5435

Further Information

Employees who need more information about the plan or an explanation of their duties under the plan should contact the following individuals:

Mike White: VP of Operations	903-746-5435

ATV/UTV Safety

Introduction

The information contained in this document applies to All Terrain Vehicle (ATV/UTV) Operations at sites operated by Global Inspection Services.

Responsibilities

- Do not operate an ATV/UTV unless trained.
- Wear proper PPE whenever operating ATV/UTV.
- Do not operate ATV/UTV with passengers.
- Avoid operating an ATV/UTV on public roads.
- Do not attempt to do "WHEELIES," jumps or other stunts.
- Do not operate an ATV/UTV at excessive speeds.
- Review and become familiar with the owner's handbook.
- Failure to follow all procedures described in the owner's handbook may cause the ATV/UTV to roll over on the operator.
- Do not attempt to ascend, descend, or traverse any slope greater than 25 percent or less as recommended by ATV/UTV manufacturers.
- Notify Supervisors of any defects in ATV/UTV or PPE.

Pre-Ride Inspection

A pre-ride inspection ensures that everything on the machine is adjusted and working properly to prevent a breakdown or even an accident. In a pre-ride inspection check tires and wheels, controls, lights and switches, oil and fuel, chain or drive shaft, and chassis. A general pre-ride checklist is provided in this publication, but riders should refer to the owner's handbook for a more detailed checklist for their machine. ATV/UTVs should always be equipped with a complete tool kit supplied by the manufacturer.

PPE

Safety gear is a must for the ATV/UTV rider; the most important piece of safety equipment is the helmet. As a rider, it is recommended that a helmet be worn that meets or exceeds safety standards. For some of our clients, this is a mandatory requirement Please check with your client to see if this policy is in effect. Purchase a helmet that is approved and marked by the Department of Transportation (DOT), the American National Standards Institute, or the Snell Memorial Foundation. A helmet should fit snugly and always be securely fastened.

Riders must wear safety glasses to protect eyes whenever a helmet is not equipped with an appropriate face shield. Sunglasses are not safety glasses and do not provide adequate eye protection.

Clothing

A well-equipped ATV/UTV rider always wears proper clothing, including gloves, boots, long pants, and a long-sleeved shirt (Figure 1). Gloves prevent fatigue from vibration, scratches from brush, and protection from cold weather. Off-road type gloves, which have padding over the knuckles, offer the most protection.

Boots that rise above the ankles offer the most protection and support for ATV/UTV riders. Boots should have heels to prevent your feet from slipping off the footrests steel toed boots are better, but lace-up work boots or motorcycle racing boots are the best footwear.

Long pants and long-sleeved shirts prevent scratches from brush. Serious riders should wear off-road racing gear that has padded areas at the knees, elbows, and shoulders.

Ramps

All commercial loading ramps are load rated. Employees must ensure that the load rating capacity of the ramp is equal to or greater than the equipment to be loaded.

• Metal loading ramps generally can be found in two materials, steel, and aluminum. Most styles are either bi-fold or trifold. Aluminum trifolds are the easiest to handle.

• There are two basic construction types for these ramps, diamond mesh and rungs. If you plan on loading something like a riding lawnmower besides your ATV/UTV, then use mesh. The smaller lawnmower tires fall into the space between the rungs and create a bumpy load and unload.

However, the rung-style-loading ramp provides greater traction to an ATV/UTV tire, if the ramp angle is steep, or the conditions are wet.

Ramp Usage

• There are three loading conditions where employees would use a loading ramp:

1. Loading from a wall or knoll with as little ramp angle as possible.
2. Loading with the truck in a depression to reduce ramp angle.
3. Loading from level ground with the ramp angle at its greatest.

• If possible, always try to look for a wall, or a depression (like a ditch) to reduce the loading ramp angle. The shallower the ramp angle, the easier the loading of the ATV/UTV will be.

• Employee will never use a loading ramp without safety chains.

Basic Safety Rules

Once a rider has completed a pre-ride inspection and selected proper safety gear and clothing, there are some basic safety rules he or she should know and follow. These include keeping your feet on the footrests, riding single, and riding off-road only. Footrests are located just in front of the rear tires and

putting a foot on the ground while riding could easily result in running over a foot or even pulling the rider from the machine. Because an ATV/UTV does not turn in the same manner as a motorcycle, a rider does not need to put a foot down while turning.

When operating an ATV/UTV on the right of way (ROW), you will avoid all obstacles and hazards when possible. Ensure your route is safe and accessible. Under no circumstances will you ride or park your ATV/UTV

within 10 feet of a trench, excavation, or bell hole. You should never ride your ATV/UTV over spoil piles or large mounds of dirt or material.

If equipped with bench seats and seat belts, they must be always used.

Though the seat on an ATV/UTV may seem large enough for two, it is designed to accommodate the operator only. The operator needs the entire seat to safely negotiate rough terrain. Approximately one third of all accidents occur when ATV/UTVs are ridden double. Carrying passengers also increases the weight on the ATV/UTV and makes it harder to maneuver.

ATV/UTVs operating in state owned riding areas must have a 10' whip antenna with a bright red or orange flag. This also is mandated by some of our clients. Please check with your client to see if this policy is in effect.

Behavior Based Safety

Safety Performance

Behavioral based safety allows you to measure in a new way.

- The system allows you to measure the positives.
- Allows you to identify unwanted behavior.
- And, to know if you are getting better.

Behavior Based Safety

A Behavior Based Safety Program is implemented to effect behavioral change.

Workplace Observations are conducted to measure how the changes are impacting workplace safety.

What Is the Goal of Behavioural Based Safety?

To create a workplace safety **culture** that eliminates unsafe behaviors.

- Culture is a shared set of commonly held general beliefs and values that Influence people's assumptions, perceptions, and **behavior**.

What Causes Accidents?

According to statistics from organizations like Dupont and the National Safety Council show that 80-90% of all workplace injuries are linked to ***unsafe acts***.

Behavior Based Safety Bringing Changes

Behavior Based Safety is a way to change behavior that eventually changes the culture.

- It requires: Patience. Yours and the Boss.
    - Support: Yours and the others in the Workforce.
    - Lead by example and getting others to do the same.

BEHAVIOR BASED SAFETY WHAT IS OUR METHOD?

- Combined approach:
    - Changing the way, we think.
    - Measuring the way, we act.
    - Workplace observations.

What Is Safe Start?

A program that teaches us the 4 states that cause us to get injured.

- Self-trigger on one or more of the states to prevent us making critical errors.
    - Rushing
    - Fatigue
    - Frustration
    - Complicacy
- 4 Critical Errors
    - Eyes not on task
    - Mind not on task
    - Loss of balance, traction, or grip
    - Moving into or being in the line of fire

Data Collecting and Trending Analysis

Significant data collection is required to conduct a trend analysis. Data is collected by tracking observed issues from all observation cards. These issues are logged into a spreadsheet under their proper headline (example: not wearing safety glasses will be recorded as a PPE issue). Perceived causes of unsafe acts will also be recorded to aid in determining the best prevention methods.

Ongoing trend analyses will be conducted by comparing issues from the observation cards with work related injuries. By comparing injuries to observations for each facility, the HSE Department will be better able to determine correlations between observed issues and actual injuries. The perceived causes of safety issues that are noted on observation cards are likely the same causes of injuries.

Once trend analysis is complete, appropriate action plans must be developed to address unsafe behavior.

Action plans will include:

1. Evaluate unsafe behaviors from trend analysis and prioritize.
2. Develop action plan for unsafe behaviors based on comments and feedback from data sheets.
3. Designate responsible parties and timeframes within the action plan.
4. Define who is responsible for action planning.
5. Ensure management support.

Training

- The objectives of the program
- How to properly conduct observations-any employee may be observed at any time
- How to treat other employees during a discussion of observations
- How to accept and build on criticism regarding safe behaviors
- How to interpret causes of unsafe actions from feedback (Examples: I did not know- training issue, I do not care-attitude issue, nothing will happen-complacency issue, I do not have-equipment issue, I will not slip-overconfidence issue)
- How to complete the observation form
- How to mentor coworkers if given the opportunity.

Workplace Observations

- Critical Task Determinations
    - Supervisor needs to select the employee to be observed and determine what critical task the employee will be assigned too.
- Observation of Employee

    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

    Specific Tasks of the Observer (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 of problems found.
- Record a comment for every recorded "at-risk" to include what and why. Make quality observations, concentrating on quality COMMENTS.

- **Data Collection Through Observations**
  - Complete the Behavior Based Safety form completely, noting both good and bad performance.
  - Observation and Feedback:
    - The process starts with the observation of workers; fellow employees, other contractor employees and customer 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 WHAT was observed. Items to be observed include but are not limited to:
    - Personal Protective Equipment
    - Procedures / Methods
    - People
    - Work Environment
    - Equipment
    - This first step reinforces safe work behaviors and facilitates the collection of data about why at-risk behaviors are performed. Documenting feedback allows workers to assess what should be repeated and what should change to reduce risks in the workplace.

- **Data Collation and Evaluation**
  - Review all data and make your positive reinforcement observations and your negative observations. Prepare to commend positive behavior and review negative behavior.

- **Communication and Action Steps**
  - Sit down with employee and review your observation data.

- Commend positive behavior and review negative behavior. Detail path employee must take to improve his/her performance.
- Give the employee a time frame to improve and review at scheduled time.

Benzene Awareness

Benzene is a clear, colorless, flammable liquid. Benzene is considered a carcinogen which is cancer-causing. It has a strong, sweet odor. Hazards associated with benzene include respiratory and skin and may cause eye irritation at certain concentrations. 1 ppm is the permissible exposure level (8 hours per OSHA). ACGIH and NIOSH standards are different and Global Inspection Services clients determine which standard applies.

The vapor is heavier than air, so it can spread long distances and ignite far from the source and flashback. The liquid is lighter than water and it floats on top of water if mixed. Mixing or contact with strong oxidizers (i.e., peroxides, chlorine, ozone, and nitric acid) can result in combustion and, potentially, an explosion. Consequently, Fire Extinguisher must be readily available to all employees within the Regulated Area.

Benzene is extremely flammable. Its flash point (the temperature where an ignition source can ignite benzene vapors) is -11° C. Its flammable range (concentration of vapors in the air) is from 1.2 to 7.8 percent. The vapor is heavier than air, so it can spread long distances and ignite far from the source and flashback. The liquid is lighter than water and it floats on top of water if mixed. Mixing or contact with strong oxidizers (i.e., peroxides, chlorine, ozone, and nitric acid) can result in combustion and, potentially, an explosion. Consequently, Fire Extinguisher must be readily available to all employees within the Regulated Area.

Note: Employees need to be aware that there may be no safe level of exposure to a carcinogen, so all contact should be reduced to the lowest possible level. The above exposure levels are for air levels only. When skin contact also occurs, you may be overexposed, even though air levels are less than the limits listed above. All chemical contact will be kept to a minimum, appropriate PPE shall be utilized and the SDS will be referenced for all hazards.

Potential locations of Benzene exposure:

1. Petroleum refining sites

2. Tank Gauging (tanks at producing, pipeline & refining operations)

3. Field maintenance

Global Inspection Services does not produce any product that contains benzene but may work around products or operations:

Benzene Monitoring and Respiratory Protection

If employee exposure is at or above the permissible exposure limit (PEL), the engineering controls and work practices must be implemented to reduce and maintain employee exposure to benzene below the

PEL. If the engineering and work practices are not sufficient to restrict employee exposure, then respiratory protection must be used. If an employee is to work in the following levels, the subscribed respiratory protection will be used:

• At concentrations between 1 ppm and 10 ppm, a half-mask, air-purifying respiratory is required.

• At concentrations between 10 ppm and 50 ppm a full-face, air-purifying respirator is required.

• At concentrations of 50 ppm or more, atmosphere-supplying respiratory protection is required. Benzene is considered Immediately Dangerous to Life or Health (IDLH) at concentrations of 500 ppm or higher.

Work Practices implemented by this program are to include:

- Mandatory participation in Training
- Good hygiene practices—no eating, drinking, or tobacco use allowed inside of the Regulated Area. Employees are also expected to wash their face and hands before eating, drinking, using tobacco, and/or leaving the job site at the end of their shift.
- Maintaining engineering controls.
- Storing benzene properly.
- The strict enforcement of the Regulated Area rules.
- Using the appropriate PPE.
- Quick and efficient confinement and cleanup of spills.
- NO SMOKING in or around Regulated Areas or in the proximity of Benzene.

Global Inspection Services relies on its client to inform Global Inspection Services of the potential for benzene exposure. Global Inspection Services reserves the right to test for benzene levels when working around benzene-containing products.

Employer should be aware of Client's contingency plan provisions. Employees must be informed where benzene is used in host facility and aware of additional plant safety rules.

Benzene Regulated Areas

Regulated areas are defined as any area that contains benzene vapors at or above 1 ppm. Benzene Regulated Areas will be identified by placement of Benzene Danger signs at all entrances. Global Inspection Services employees will not enter these areas until they are trained, fit tested for, and equipped with the appropriate PPE—respirators (Respiratory Protection p. 1), boots, gloves, sleeves, eye protection, and aprons, etc. Work practices and Engineering controls covered on page 2 of this program.

Training

Training will include definition of benzene, where benzene is found, and engineering methods to reduce benzene levels, personal protective equipment, signs and symptoms of benzene exposure, benzene

hazards to include acute and chronic effects, fire hazards, monitoring, physical properties, workplace limits, exposure reporting, and safe work practices.

Employees must report any significant exposure to benzene (0.1 or more by volume of benzene present) to the Global Inspection Services Safety Coordinator immediately.

In the event of a sudden release of benzene-containing material, all responders to the scene are to be equipped with respiratory protection and complete skin covering, until the benzene level is determined to be at a safe level.

Benzene Exposure Symptoms

• Dizziness

• Giddy, anxious feeling

• Nausea

• Shortness of breath

• Respiratory, skin, and eye irritation

• Severe headaches

• Unsteadiness

Bloodborne Pathogens

Introduction

Bloodborne pathogens are microorganisms present in human blood which can cause disease in humans. These pathogens include, but are not limited to, hepatitis B virus (HBV) and human immunodeficiency virus (HIV). A Bloodborne pathogens program is necessary in all organizations where employees are exposed to blood or other potentially infectious materials (OPIM).

Exposure Control Plan

An OSHA-regulated employer with one or more potentially exposed employees should develop a written exposure control plan designed to eliminate or minimize exposure to Bloodborne pathogens. Many agencies, including OSHA, offer model exposure control plans to assist employers in developing this program. In general, the plan should include the following components:

- Universal Precautions procedures will be always observed: All body fluids will be considered potentially infectious.
- Eliminating or minimizing occupational exposure of employees to blood or certain other body fluids
- Complying with OSHA's Bloodborne Pathogens Standard, 29 CFR 1910.1030
- Assuring adequate protection for those employees who are designated first aid responders

The exposure control plan should be reviewed at least annually. In addition, whenever changes in tasks, procedures, or employee positions affect or create new occupational exposure, the existing plan should be reviewed and updated accordingly. The exposure control plan should be accessible to all employees in the workplace on all work shifts. The exposure control plan should include provisions for ensuring all employees with occupational exposure have received or declined the Hepatitis B vaccination. Employees declining the Training will include definition of benzene, where benzene is found, and engineering methods to reduce benzene levels, personal protective equipment, signs and symptoms of benzene exposure, benzene hazards to include acute and chronic effects, fire hazards, monitoring, physical properties, workplace limits, exposure reporting, and safe work practices.

Employees must report any significant exposure to benzene (0.1 or more by volume of benzene present) to the Global Inspection Services Safety Coordinator immediately.

In the event of a sudden release of benzene-containing material, all responders to the scene are to be equipped with respiratory protection and complete skin covering, until the benzene level is determined to be at a safe level.

Benzene Exposure Symptoms

• Dizziness

• Giddy, anxious feeling

• Nausea

• Shortness of breath

• Respiratory, skin, and eye irritation

• Severe headaches

• Unsteadiness

Bloodborne Pathogens

Introduction

Bloodborne pathogens are microorganisms present in human blood which can cause disease in humans. These pathogens include, but are not limited to, hepatitis B virus (HBV) and human immunodeficiency virus (HIV). A Bloodborne pathogens program is necessary in all organizations where employees are exposed to blood or other potentially infectious materials (OPIM).

Exposure Control Plan

An OSHA-regulated employer with one or more potentially exposed employees should develop a written exposure control plan designed to eliminate or minimize exposure to Bloodborne pathogens. Many agencies, including OSHA, offer model exposure control plans to assist employers in developing this program. In general, the plan should include the following components:

- Universal Precautions procedures will be always observed: All body fluids will be considered potentially infectious.

- Eliminating or minimizing occupational exposure of employees to blood or certain other body fluids
- Complying with OSHA's Bloodborne Pathogens Standard, 29 CFR 1910.1030
- Assuring adequate protection for those employees who are designated first aid responders

The exposure control plan should be reviewed at least annually. In addition, whenever changes in tasks, procedures, or employee positions affect or create new occupational exposure, the existing plan should be reviewed and updated accordingly. The exposure control plan should be accessible to all employees in the workplace on all work shifts. The exposure control plan should include provisions for ensuring all employees with occupational exposure have received or declined the Hepatitis B vaccination. Employees declining the vaccination should sign the OSHA-mandated Hepatitis B Vaccine Declination Form. The link to this form is included at the bottom of the page.

Universal Precautions

All employees, not just those who are designated to administer first aid, should be trained in Universal Precautions. Universal Precautions is OSHA's required method of control to protect employees from exposure to all human blood and OPIM. The term, "Universal Precautions," refers to a concept of Bloodborne disease control which requires that all human blood and certain human body fluids be treated as if known to be infectious for HIV, HBV, and other Bloodborne pathogens. Body Substance Isolation (BSI) may also be used as an alternative to Universal Precautions, provided facilities using the method adhere to all other provisions of the standard. BSI is a control method that defines all body fluids and substances as infectious. BSI

incorporates not only the fluids and materials covered by the standard but expands coverage to include all body substances. Regardless of which method is used, employees should be trained on the engineering controls, work practice controls, and personal protective equipment that should be used to prevent exposure to blood and OPIM. These are discussed in the following sections.

Engineering and Work Practice Controls

- Removing contaminated PPE as soon as possible
- Cleaning and disinfecting contaminated equipment and work surfaces with a solution of 1/4 cup chlorine bleach per gallon of water
- Thorough hand washing with soap and water immediately after providing care or provision of antiseptic towelettes or hand cleanser where hand washing facilities are not available
- Use of leak-proof, labeled containers for contaminated disposable waste or laundry
- Barricading exposed areas

First Aid Training

First aid trainers are responsible to make sure that employees are trained in Bloodborne pathogen hazards and controls at the time the first aid training is provided. Training should include:

- Symptoms of Bloodborne diseases

- Modes of transmission of Bloodborne pathogens
- Recognition of tasks that may involve exposure
- Use and limitations of methods to reduce exposure, for example, use of plastic gloves, and other personal protective equipment (PPE)
- Types, use, location, removal, handling, decontamination, and disposal of PPE
- The basis of selection of PPE
- Hepatitis B vaccination efficacy, safety, method of administration, and benefits

Personal Protective Equipment

Appropriate personal protective equipment (PPE) should be made available to all employees who have reasonably anticipated exposure to blood or OPIM. PPE is appropriate only if it does not permit blood or OPIM to pass through to, or reach, the skin, employees' underlying garments, eyes, mouth, or other mucous membranes under normal conditions of use and for the duration of time that the PPE will be used. The types of PPE necessary will vary from one organization to another (i.e., an office building will likely need fewer items than a manufacturing facility), but usually include: eye and face protection, protective clothing, and gloves. Masks, in combination with eye protection devices, such as glasses with solid side shields, goggles, or chin-length face shields, should be worn whenever splashes, spray, spatter, or droplets of blood or OPIM may be generated, and eye, nose, or mouth contamination can be reasonably anticipated. Disposable gloves should be replaced as soon as practical after they have become contaminated, or as soon as feasible if they are torn, punctured, or their ability to function as a barrier is compromised. Hands should be washed after the removal of gloves used as PPE, whether the gloves are visibly contaminated.

Post-Exposure Evaluation and Follow-Up

All exposure incidents shall be reported, investigated, and documented via the Global Inspection Services accident investigation process. When the employee is exposed to blood or OPIM, the incident shall be reported to the Global Inspection Services Safety and Environmental Manager. When an employee is exposed, he or she will receive a confidential medical evaluation and follow-up, including at least the following elements:

- Documentation of the route of exposure, and the circumstances under which the exposure-occurred
- Identification and documentation of the source individual, unless it can be established that identification is infeasible or prohibited by state or local law
- The source individual's blood shall be tested as soon as feasible and after consent is obtained to determine HBV and HIV infectivity. When the source individual's consent is not required by law, the source individual's blood, if available, will be tested and the results documented
- When the source individual is already known to be infected with HBV or HIV, testing for the source individual's known HBV or HIV status need not be repeated

Results of the source individual's testing shall be made available to the exposed employee, and the employee shall be informed of applicable laws and regulations concerning disclosure of the identity and infectious status of the source individual.

Bloodborne Pathogens

Introduction

Bloodborne pathogens are microorganisms present in human blood which can cause disease in humans. These pathogens include, but are not limited to, hepatitis B virus (HBV) and human immunodeficiency virus (HIV). A Bloodborne pathogens program is necessary in all organizations where employees are exposed to blood or other potentially infectious materials (OPIM).

Exposure Control Plan

An OSHA-regulated employer with one or more potentially exposed employees should develop a written exposure control plan designed to eliminate or minimize exposure to Bloodborne pathogens. Many agencies, including OSHA, offer model exposure control plans to assist employers in developing this program. In general, the plan should include the following components:

- Universal Precautions procedures will be always observed: All body fluids will be considered potentially infectious.
- Eliminating or minimizing occupational exposure of employees to blood or certain other body fluids
- Complying with OSHA's Bloodborne Pathogens Standard, 29 CFR 1910.1030
- Assuring adequate protection for those employees who are designated first aid responders

The exposure control plan should be reviewed at least annually. In addition, whenever changes in tasks, procedures, or employee positions affect or create new occupational exposure, the existing plan should be reviewed and updated accordingly. The exposure control plan should be accessible to all employees in the workplace on all work shifts. The exposure control plan should include provisions for ensuring all employees with occupational exposure have received or declined the Hepatitis B vaccination. Employees declining the vaccination should sign the OSHA-mandated Hepatitis B Vaccine Declination Form. The link to this form is included at the bottom of the page.

Universal Precautions

All employees, not just those who are designated to administer first aid, should be trained in Universal Precautions. Universal Precautions is OSHA's required method of control to protect employees from exposure to all human blood and OPIM. The term, "Universal Precautions," refers to a concept of Bloodborne disease control which requires that all human blood and certain human body fluids be treated as if known to be infectious for HIV, HBV, and other Bloodborne pathogens. Body Substance Isolation (BSI) may also be used as an alternative to Universal Precautions, provided facilities using the method adhere to all other provisions of the standard. BSI is a control method that defines all body fluids and substances as infectious. BSI

incorporates not only the fluids and materials covered by the standard but expands coverage to include all body substances. Regardless of which method is used, employees should be trained on the engineering controls, work practice controls, and personal protective equipment that should be used to prevent exposure to blood and OPIM. These are discussed in the following sections.

Engineering and Work Practice Controls

- Removing contaminated PPE as soon as possible
- Cleaning and disinfecting contaminated equipment and work surfaces with a solution of 1/4 cup chlorine bleach per gallon of water
- Thorough hand washing with soap and water immediately after providing care or provision of antiseptic towelettes or hand cleanser where hand washing facilities are not available
- Use of leak-proof, labeled containers for contaminated disposable waste or laundry
- Barricading exposed areas

First Aid Training

First aid trainers are responsible to make sure that employees are trained in Bloodborne pathogen hazards and controls at the time the first aid training is provided. Training should include:

- Symptoms of Bloodborne diseases
- Modes of transmission of Bloodborne pathogens
- Recognition of tasks that may involve exposure
- Use and limitations of methods to reduce exposure, for example, use of plastic gloves, and other personal protective equipment (PPE)
- Types, use, location, removal, handling, decontamination, and disposal of PPE
- The basis of selection of PPE
- Hepatitis B vaccination efficacy, safety, method of administration, and benefits

Personal Protective Equipment

Appropriate personal protective equipment (PPE) should be made available to all employees who have reasonably anticipated exposure to blood or OPIM. PPE is appropriate only if it does not permit blood or OPIM to pass through to, or reach, the skin, employees' underlying garments, eyes, mouth, or other mucous membranes under normal conditions of use and for the duration of time that the PPE will be used. The types of PPE necessary will vary from one organization to another (i.e., an office building will likely need fewer items than a manufacturing facility), but usually include: eye and face protection, protective clothing, and gloves. Masks, in combination with eye protection devices, such as glasses with solid side shields, goggles, or chin-length face shields, should be worn whenever splashes, spray, spatter, or droplets of blood or OPIM may be generated, and eye, nose, or mouth contamination can be reasonably anticipated. Disposable gloves should be replaced as soon as practical after they have

become contaminated, or as soon as feasible if they are torn, punctured, or their ability to function as a barrier is compromised. Hands should be washed after the removal of gloves used as PPE, whether the gloves are visibly contaminated.

Post-Exposure Evaluation and Follow-Up

All exposure incidents shall be reported, investigated, and documented via the Global Inspection Services accident investigation process. When the employee is exposed to blood or OPIM, the incident shall be reported to the Global Inspection Services Safety and Environmental Manager. When an employee is exposed, he or she will receive a confidential medical evaluation and follow-up, including at least the following elements:

- Documentation of the route of exposure, and the circumstances under which the exposure-occurred
- Identification and documentation of the source individual, unless it can be established that identification is infeasible or prohibited by state or local law
- The source individual's blood shall be tested as soon as feasible and after consent is obtained to determine HBV and HIV infectivity. When the source individual's consent is not required by law, the source individual's blood, if available, will be tested and the results documented
- When the source individual is already known to be infected with HBV or HIV, testing for the source individual's known HBV or HIV status need not be repeated

Results of the source individual's testing shall be made available to the exposed employee, and the employee shall be informed of applicable laws and regulations concerning disclosure of the identity and infectious status of the source individual.

Cell Phone Policy

Effective November 1, 2010, in accordance with all Federal, State and Local governing bodies, Global Inspection Services has implemented a cell phone policy as described herein.

Global Inspection Services is aware that employees currently use their cell phones for business purposes while driving in their personal vehicle and using their personal cell phone or similar device. Due to research that indicates that cell phone use while driving is dangerous and may even approach the equivalent danger of driving while drunk, according to some studies, your company prohibits employee use of personal cellular phones, or similar devices, for business purposes related in any way to our company, while driving during normal business without utilizing some form of a hands-free device.

Below are some of the statistical data provided by the Highway Safety Association:

Handheld Cell Phones:

- 8 states (Calif., Conn., Del., Md., N.J., N.Y., Ore., and Wash.), D.C. and the Virgin Islands prohibit **all drivers** from using handheld cell phones while driving.

- Except for Maryland, all laws are **primary enforcement**—an officer may cite a driver for using a handheld cell phone without any other traffic offense taking place.
- **Text Messaging:** 30 states, D.C., and Guam ban text messaging for all drivers. 11 of these laws were enacted in 2010. 26 states, D.C., and Guam have primary enforcement. In the other four, texting bans are secondary.

This prohibition of cell phone or similar device use while driving includes receiving or placing calls, text messaging, surfing the Internet, receiving or responding to email, checking for phone messages, or any other purpose related to your employment; the business; our customers; our vendors; volunteer activities, meetings, or civic responsibilities performed for or attended in the name of the company; or any other company related activities not named here while driving during normal business hours. You may not use your cellular phone or similar device to receive or place calls, text messages, surf the Internet, check phone messages without at a minimum the use of a hands-free device, or receive or respond to email while driving if you are in any way doing activities that are related to your employment.

We recognize that other distractions occur during driving, however curbing the use of cell phones, while driving, is one way to minimize the risk, for our employees, of accidents. Therefore, you are required to stop your vehicle in a safe location so that you can safely use your cell phone or similar device without the use of a hands-free device at a minimum.

Employees who violate this policy could be subject to disciplinary action.

For more information, please log onto: http://www.ghsa.org/html/stateinfo/laws/cellphone_laws.html

Compressed Air Safety

General safety requirements for compressed air

The following precautions pertain to the use of compressed air in machine shops:

All pipes, hoses, and fittings must have a rating of the maximum pressure of the compressor. Compressed air pipelines should be identified (psi) as to maximum working pressure.

Air supply shutoff valves should be located (as near as possible) at the point-of-operation.

Air hoses should be kept free of grease and oil to reduce the possibility of deterioration.

Hoses should not be strung across floors or aisles where they are liable to cause personnel to trip and fall. When possible, air supply hoses should be suspended overhead, or otherwise located to afford efficient access and protection against damage.

Hose ends must be secured to prevent whipping if an accidental cut or break occurs.

Pneumatic impact tools, such as riveting guns, should never be pointed at a person.

Before a pneumatic tool is disconnected (unless it has quick disconnect plugs), the air supply must be turned off at the control valve and the tool bled.

Compressed air must not be used under any circumstances to clean dirt and dust from clothing or off a person' s skin. Shop air used for cleaning should be regulated to 15 psi unless equipped with diffuser nozzles to provide lessor pressure.

Goggles, face shields or other eye protection must be worn by personnel using compressed air for cleaning equipment.

Static electricity can be generated using pneumatic tools. This type of equipment must be grounded or bonded if it is used where fuel, flammable vapors or explosive atmospheres are present.

Safety Requirements for Operating & Maintaining Compressed Air Machinery:

All components of compressed air systems should be inspected regularly by qualified and trained employees. Maintenance superintendents should check with state and/or insurance companies to determine if they require their own inspection of this equipment. Operators need to be aware of the following:

Air receivers:

The maximum allowable working pressures of air receivers should never be exceeded except when being tested. Only hydrostatically tested and approved tanks shall be used as air receivers.

Air tanks and receivers should be equipped with inspection openings, and tanks over 36 inches in diameter should have a manhole. pipe plug openings should be provided on tanks with volumes of less than five cubic feet.

The intake and exhaust pipes of small tanks, like those used in garages, should be made removable for interior inspections.

No tank or receiver should be altered or modified by unauthorized persons.

Air receivers should be fitted with a drain cock that is located at the bottom of the receiver.

Receivers should be drained frequently to prevent accumulation of liquid inside the unit. Receivers having automatic drain systems are exempt from this Requirement.

Air tanks should be located so that the entire outside surfaces can be easily inspected. Air tanks should not be buried or placed where they cannot be seen for frequent inspection.

Each air receiver shall be equipped with at least one pressure gauge and an ASME safety valve of the proper design.

A safety (spring loaded) release valve shall be installed to prevent the receiver from exceeding the maximum allowable working pressure.

Only qualified personnel should be permitted to repair air tanks, and all work must be done according to established safety standards.

Air Distribution Lines:

Air lines should be made of high-quality materials, fitted with secure connections.

Only standard fittings should be used on air lines.

Operators should avoid bending or kinking air hoses.

Air hoses should not be placed where they will create tripping hazards.

Hoses should be checked to make sure they are properly connected to pipe outlets before use.

Air lines should be inspected frequently for defects, and any defective equipment repaired or replaced immediately.

Compressed air lines should be identified as to maximum working pressures (psi), by tagging or marking pipeline outlets.

Pressure regulation Devices:

Only qualified personnel should be allowed to repair or adjust pressure regulating equipment.

Valves, gauges, and other regulating devices should be installed on compressor equipment in such a way that cannot be made inoperative.

Air tank safety valves should be set no less than 15 psi or 10 percent (whichever is greater) above the operating pressure of the compressor but never higher than the maximum allowable working pressure of the air receiver.

Air lines between the compressor and receiver should usually not be equipped with stop valves. Where stop valves are necessary and authorized, ASME safety valves should be installed between the stop valves and the compressor.

The Safety valves should be set to blow at pressures slightly above those necessary to pop the receiver safety valves.

Blowoff valves should be located on the equipment and shielded so sudden blowoffs will not cause personnel injuries or equipment damage.

Case iron seat or disk safety valves should be ASME approved and stamped for intended service application.

If the design of a safety or a relief valve is such that liquid can collect on the discharge side of the disk, the valve should be equipped with a drain at the lowest point where liquid can collect.

Safety valves exposed to freezing temperatures should be located so water cannot collect in the valves. Frozen valves must be thawed and drained before operating the compressor.

Air Compressor Operation:

Air compressor equipment should be operated only by authorized and trained personnel.

The air intake should be from a clean, outside, fresh air source. Screens or filters can be used to clean the air.

Air compressors should Never be operated at speeds faster than the manufacturers recommendation.

Equipment should not become overheated.

Moving parts, such as compressor flywheels, pulleys, and belts that could be hazardous should be effectively guarded.

Compressed Air Equipment Maintenance:

Only authorized and trained personnel should service and maintain air compressor equipment.

Exposed, non-current-carrying, metal parts of compressor should be effectively grounded.

Low flash point lubricants should not be used on compressors because of its high operating temperatures that could cause a fire or explosion.

Equipment should not be over lubricated.

Gasoline or diesel fuel powered compressors shall not be used indoors.

Equipment placed outside but near buildings should have the exhausts directed away from doors, windows, and fresh air intakes.

Soapy water of lye solutions can be used to clean compressor parts of carbon deposits, but kerosene or other flammable substances should not be used. Frequent cleaning is necessary to keep compressors in good working condition.

The air systems should be completely purged after each cleaning.

During maintenance work, the switches of electrically operated compressors should be locked open and tagged to prevent accidental starting.

Portable electric compressors should be disconnected from the power supply before performing maintenance.

Confined Space Program

Introduction

It is the policy of Global Inspection Services that no employee shall enter a confined space, without prior written approval from management. Statistics compiled by the National Institute for Occupational Safety and Health (NIOSH) show that confined space incidents are more likely to result in fatalities than any other workplace emergency. Sixty to seventy percent of confined space fatalities are the result of failed rescue attempts. As a result, the Occupational Safety &Health Administration (OSHA) created a standard to protect the health and safety of confined space entrants (see 29 CFR 1910.146). This regulation, established in April 1993, outlines comprehensive safety and employee training requirements for confined space entry and work.

The following information outlines the methods used to determine if confined spaces are present at your facility and describes the major provisions for a Confined Space Entry Program.

Confined Space Characteristics

According to OSHA, a confined space is a space that:

- Is large enough and so configured that an employee can bodily enter and perform assigned work, and.
- Has limited or restricted means of entry or exit, and.
- Is not designed or intended for continuous human occupancy.

Permit-Required and Non-Permit-Required Confined Spaces

OSHA classifies confined spaces as either permit-required or non-permit-required. The distinction between the two is as follows:

A ***Non-Permit-Required Confined Space*** is a space that has all the characteristics of a confined space but does not contain or have the potential to contain any hazard capable of causing death or serious physical harm.

A ***Permit-Required Confined Space*** is a space that has all the characteristics of a confined space and meets any of the following conditions:

- Contains, or has a potential to contain, a hazardous atmosphere. Hazardous atmospheres may include insufficient oxygen concentration, presence of flammable gases and vapors, or the presence of potential toxic air contaminants such as silica or dust.
- Contains a material that has the potential for engulfing an entrant. Materials that might engulf entrants include grain, sand, water, or any other flowable substance that could restrict breathing.
- 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.
- Contains any other recognized safety or health hazard.

Workplace Evaluation

Each employer should evaluate all workplaces to determine if they contain confined spaces. If it is determined that confined spaces exist in the workplace, each space should be evaluated to determine if it is a permit-required confined space. The NIOSH decision tree on the next page can be used to determine if confined spaces exist, and whether they are permit required or non-permit required. If the workplace contains permit-required confined spaces, the employer should inform all exposed employees by posting danger signs at each confined space location. If the employer decides that its employees will not enter permit-required confined spaces, effective measures should be taken to prevent employees from entering the permit spaces. If the employer instead decides that employees will enter the permit space, a permit-required confined space program should be developed and implemented. This written program should be always available for inspection by employees.

Contractor Entry into Confined Spaces

If the client arranges to have employees of a contractor perform work that involves permit required confined space entry, the contractor should:

- Rescue personnel and equipment shall be readily available.
- Inform Global Inspection Services that the workplace contains permit spaces, and that entry is allowed only through the clients confined space entry program.
- Inform the client of hazards and previous experience related to the space the contractor will enter.
- Describe any precautions or procedures for working safely in the permit space.
- Coordinate entry operations with the contractor.
- Meet with the client and Global Inspection Services at the completion of the work regarding any hazards or issues that arose during entry into the space, or any new hazards that the contractor may have created in the confined space because of the work.

Permit System

Before any entry is authorized, the client should document that the procedures and practices necessary for a safe permit-required confined space entry have been completed. When all preparations have been made, the client may issue an entry permit. The entry supervisor should sign the entry permit to officially authorize entry.

The completed permit should be made available at the time of entry to all authorized entrants so that each entrant can confirm that the pre-entry preparations have been completed. The duration of a permit may not exceed the time required to complete the assigned task or job identified in the permit.

The entry supervisor should terminate entry and cancel the entry permit when:

- The entry operations covered by the entry permit have been completed, or.
- A condition that is not allowed under the entry permit arises in or near the permit space.

The client should retain each canceled entry permit for at least one year to facilitate the annual review of the permit-required confined space program. Any problems encountered during an entry operation should be noted on the permit so that appropriate revisions to the permit space program can be made.

Entry Permit

All entry permits issued should contain the following information:

1. The permit space to be entered.
2. The purpose of the entry.
3. The effective time and expiration time of the entry permit.
4. The names of all authorized entrants.
5. The names of persons currently serving as attendants.
6. The name of the individual currently serving as entry supervisor.

7. The signature of the entry supervisor who originally authorized entry.
8. The hazards of the space to be entered.
9. The measures used to isolate, eliminate, or control permit space hazards before entry (e.g., lockout, purging, ventilating, flushing).
10. The acceptable entry conditions.
11. The name of the individual who performed the atmospheric testing, the time testing was performed, and the results of any required initial and periodic tests.
12. The rescue and emergency services that can be summoned and the means for summoning those services.
13. The communication procedures used by authorized entrants and attendants to maintain contact during the entry.
14. Equipment, such as personal protective equipment, testing equipment, communications equipment, alarm system, and rescue equipment to be provided for the entry.
15. Any other information whose inclusion is necessary, given the circumstances of the confined space, to ensure employee safety.
16. Any additional permits, such as hot work, that have been issued to authorize work in the permit space.

An example may assist in the development of a confined space written program. See Procedures for Atmospheric Testing (Appendix A).

Employee Duties

Three groups of employees have duties in the confined space program. These are authorized entrants (the employees who enter the space), attendants (shall be stationed outside a confined space while it is occupied by workers.), and entry supervisors (the employees authorizing entry and overseeing entry operations). The specific duties of each of these groups are listed below.

Training

For a confined space program to be effective, employees should be trained appropriately. All affected employees should be trained or retrained on the confined space program:

- Before they are assigned to the duties of entrant, attendant, or entry supervisor.
- When changes in confined spaces render previous training obsolete.
- When changes in the equipment used render previous training obsolete.
- If the employer believes that previously trained employees do not have the understanding or skills outlined in their initial training.

For training to be effective and all employees to remain safe in and around confined spaces, all affected employees need to be not only trained in confined space entry, but also proficient in the knowledge contained

in the employer's written program. If even one employee is unsure of his or her duties under the program, the results can be catastrophic.

Confined space training should include, at a minimum:

- What a confined space is.
- Why a confined space program is necessary?
- The locations of all confined spaces in their facility
- Hazards associated with confined spaces.
- Safe entry practices.
- Rescue and emergency services.
- Working with contractors.
- Who is required to have confined space training?

At the end of the training, each affected employee should be able to:

- Demonstrate an understanding of the training.
- Demonstrate knowledge of confined spaces and their hazards.
- Demonstrate the skills necessary to perform safe confined space operations.

When employee training is complete, the employer should document the names of the employees who attended the training and the date(s) on which they were trained. Each employee should sign his or her name on a sign-off sheet at the conclusion of their training.

Testing Confined Space Atmospheres

Confined space atmospheres must be tested before entry is allowed. The atmosphere must be tested for oxygen content, flammability (LEL), any other suspected toxic contaminants. The tests must be conducted in the order listed.

Where entry is required to test the atmosphere, the individual conducting the initial test shall wear a SCBA (self-contained breathing apparatus) or airline positive pressure respirator with egress bottle.

All equipment used for atmospheric testing shall be calibrated and operationally checked prior to use according to manufacturer's specifications. The atmospheric tests and operational checks that precede the issuing of a permit should be as close as practical to the time the work is to begin and recorded on the entry permit. All persons associated with the confined space entry will witness equipment calibration before atmosphere is tested and witness the result of initial atmospheric monitoring.

The percentage of oxygen for unprotected entry into a confined space shall be no less than 19.5 percent and no greater than 22 percent. The oxygen level must be checked before the flammability test is conducted.

Entry will not be allowed if LEL is greater than 10 percent unless the confined space has been rendered inert.

Direct reading gas testing instruments are the only units approved for Confined Space Entry Jobs. Contact the Safety Coordinator if you have questions.

Those confined spaces that do not require respiratory protection based on the test results shall be continuously monitored with an oxygen meter during the performance of work. The area must be evacuated immediately if the oxygen content falls below 19.5 percent by volume if proper respiratory equipment is not being used. The area must also be evacuated immediately if the oxygen content rises above 22 percent by volume.

Continuous monitoring shall also be conducted for toxic gasses and combustible gasses (LEL) which may be released during work. Continuous monitoring for toxic and combustible gasses is mandatory on

all confined space work regardless of respiratory protection provided. The area must be evacuated if the combustible gasses rise above 10 percent LEL. The area must be ventilated to ensure the LEL is below 10 percent before re-entry is permitted. The confined space is continuously monitored because the LEL may rise above the 10 percent safe level.

If ventilation is required to evacuate the atmospheric area, all entrants will wear 4-gas monitors during the entire entry. These monitors will, at a minimum, check oxygen, LEL, hydrogen sulfide, and carbon monoxide. Atmospheric monitoring will match the potentially present hazards. All persons wearing these devices will have received training in device operation before being asked to wear the devices.

Contractor Safety

Introduction

The host employer must make sure that the contractor is fully informed and qualified to provide the required work safely. The training program is designed to guide the host employer toward the fulfillment of their obligations concerning screening, hiring, and monitoring the work of contractors.

Objectives

The objective of this course is to familiarize you with methods of selecting and hiring competent contractors to perform work in your workplace. In addition, the responsibilities of both the host employer and the contractor will be identified. We will also review general safe work practices and what OSHA requires of contractors and subcontractors regarding safe work practices.

Training Objectives

There are three main areas that a host employer must address regarding contractors and the work they perform. These areas are prequalification's of contractors, pre-job briefing and managing the worksite. Also, we will cover some of the special requirements related to specific OSHA requirements.

Contractors Responsibilities

A contractor has a major responsibility of setting reasonable timelines to safety complete the required work. Assess the time required to perform the requested work and be up front with the host employer about how long the job will take. Rushing to meet an unreasonable deadline had caused serious accidents, loss of life, loss of property and poor-quality workmanship that threaten the contract business and the contractor's reputation.

Many different OSHA standards including the Process Safety Management standard clearly outlines contractor responsibilities as well as the host employer's responsibilities. The contract employer must train each contract employee in safe work practices necessary to safely perform their job. Training must include the known potential fire, explosion, or toxic release hazards related to their job and he covered process including the applicable provisions of the emergency action plan,

The contractor must take all measures necessary to follow all local, state, and federal laws, the host employer rules and regulations as well as their own documented safety and health policies. Contractors must select subcontractors who are experienced and qualified to safely perform the needed work. Contractors must document that all rules, regulations, and host employer policies are known at the subcontracted employees.

Prequalification of Contractors

Once a contractor has been chosen, discuss whether they will be using subcontractors. Too often subcontractors are not considered in the selection process, and they are as much a liability to the host company as the original contractor. If the answer is yes, ask for and review the contractor's policy on selecting subcontractors. Do they screen and select according to similar criteria you use? Clearly communicate in writing the right to terminate the contract for violations of safety rules. Doing so provides added emphasis to your commitment to adhere to all rules and regulations.

In addition, the host employer should conduct a complete and comprehensive pre-job briefing with the contractor management team including worksite supervisors. This is critical to ensuring the project will be organized, efficient and safe. The project scope, timeline and ultimate goals should be clearly stated and agreed upon by all parties. A worksite "walk thru" should be conducted.

A hazard assessment of the work to be performed should be conducted. What hazards may exist? Who is responsible for controlling the hazards? Will the contracted work be performed during operations your facility and what measures need to be taken to safeguard these operations? If an incident occurs due to the contracted work, who is best trained to respond?

What are your rules and there regarding the use of powered industrial trucks, ladders, and self-propelled work platforms: guarding open holes, trenches, or excavations, working on a roof, fall protection, lifting or hosting with cranes, derricks, or hoists, performing blasting operations, or the use of compressed gas cylinders?

Coordinator

Consider appointing a company person or persons to act as coordinator on all shifts the contractors will be working. The coordinator would work closely with the contractor to monitor the day-to-day operations and assure compliance with your company policies and safety rules as well as the work in process. Company employees should be alerted to the presence of contracted employees and the potential hazards that may exist due to the work being conducted.

Managing the Worksite

As stated earlier the worksite should have regular audit and inspections conducted by the contractor. The audits should identify potential hazards and corrective action taken. These may include lockout activities, confined space entries, housekeeping activities, personal protective equipment compliance, proper safe procedures, barricading practices, and other relative safety issues.

The audit form should identify the auditor, date, and work area of the audit. Any hazards or non-compliance activities identified should be followed-up with specific corrective actions. If the hazard poses an imminent danger, the work should be stopped, and the issue resolved to ensure a safety of all involved. The host employer should require copies of all audits of the workplace and conduct a review with the contractor representative.

COVID-19

How do You Protect Yourself?

1. Know How It Spreads

- The best way to protect yourself is to get the Covid-19 vaccine.
- The best way to prevent illness is to avoid being exposed to this virus.
- The virus is thought to be spread mainly from person-to-person.
    - Between people who are in close contact with one another (within about 6 feet).
    - Through respiratory droplets produced when an infected person coughs or sneezes.
    - These droplets can land in the mouths or noses of people who are nearby or possibly be inhaled into the lungs.

2.Take Steps to Protect Yourself

- **Clean your hands often.**
    - Wash your hands often with soap and water for at least 20 seconds especially after you have been in a public place or after blowing your nose, coughing, or sneezing.
    - If soap and water are not readily available, use a hand sanitizer that contains at least 60% alcohol. Cover all surfaces of your hands and rub them together until they feel dry.

- Avoid touching your eyes, nose, and mouth with unwashed hands.

3.Avoid Close Contact

- Avoid close contact with people who are sick.
- Put distance between yourself and other people if COVID-19 is spreading in your community. This is especially important for people who are at higher risk of getting very sick.

There are various views on using masks, GIS suggests when near others indoors that you wear a mask but leaves it up to each individual employee currently to determine whether to wear a mask.

Driving Safety

Authorized Drivers

Only drivers authorized by Global Inspection Services will drive a company vehicle. Global Inspection Services requires all drivers of company vehicles must have a valid and current license to operate a company vehicle. All employees are required to follow all federal, state & local traffic laws.

Alcohol and Drug Use Policy

Alcohol use is involved in 40 percent of all fatal motor vehicle crashes, representing an average of one alcohol-related fatality every 30 minutes. It is estimated that three in every 10 Americans will be involved in an impaired driving-related crash some time in their life. Businesses pay a high price for alcohol and drug abuse; alcohol is a contributing factor in 39 percent of all work-related traffic crashes. Alcohol, certain prescription drugs, over-the-counter medications and illegal drugs can all affect a person's ability to drive safely due to decreased alertness, concentration, coordination, and reaction time.

Global Inspection Services has a vital interest in maintaining safe, healthy, and efficient working conditions for its employees. Therefore, the consumption of alcohol or illegal drugs by any employee during "duty hours" is prohibited. Duty hours consist of all working hours, including break periods and on-call periods, whether on or off company premises. The consumption of alcohol or illegal drugs while performing company business or while in a company facility is prohibited.

Seat Belt Use Policy

Global Inspection Services recognizes that seat belts are extremely effective in preventing injuries and loss of life. It is a simple fact that wearing your seat belt can reduce your risk of dying in a traffic crash by 45 percent in a car and by as much as 60 percent in a truck or SUV.

We care about our employees and want to make sure that no one is injured or killed in a tragedy that could have been prevented using seat belts. Therefore, all employees of Global Inspection Services must wear seat belts when operating a company-owned vehicle or any vehicle on company premises or on company business; and all occupants are to wear seat belts or, where appropriate, child restraints when riding in a company-owned vehicle or in a personal vehicle being used for company business. All

employees and their families are strongly encouraged to always use seat belts and the proper child restraints whenever they are driving or riding in any vehicle, in any seating position.

Company Accident and Traffic Violation Reporting Procedures:

Accident

1. Call 911.
2. Provide first aid to injured parties if qualified.
3. Wait for law enforcement. Do not move vehicle until authorized by law enforcement or the situation dictates otherwise.
4. Report accident to supervisor as soon as possible.
5. Provide accident documentation to supervisor upon return to office and file accident report.

Traffic Violation

Notify supervisor of any traffic violations. An annual traffic record will be required for each company driver.

Safe Driving Practices for Employees:

Stay Focused

Distracted driving is a factor in 25 percent to 30 percent of all traffic crashes. With hectic schedules and roadway delays, many employees feel pressured to multitask just to keep up with their personal and work-related responsibilities. Since drivers make more than 200 decisions during every mile traveled, it is critical for employers to stress that when driving for work, safe driving is their primary responsibility. Give driving you full attention. Avoid distractions such as adjusting the radio or other controls, eating, or drinking, and talking on a cell phone except while using a hands-free cell phone. Continually observe your roadway surroundings to be alert to situations requiring quick action. Take a rest break every two hours. Get out of the vehicle to stretch, take a walk, and get refreshed.

Avoid Aggressive Driving

It is easy to become stressed when driving, particularly during morning or evening commutes. Aggressive driving includes excessive speed, tailgating, failure to signal a lane change, running a red light and passing on the right. Remain calm on the roadway. Be patient and courteous to other drivers. Do not take other drivers' actions personally. Reduce stress by planning your route ahead of time, allowing plenty of travel time, and avoiding crowded roadways and busy driving times.

Secure Materials for Transport

Secure tools or equipment while being transported to prevent unsafe movement of materials. Loads will comply with manufactures and legal limits. Vehicles must be the correct size and designed for their intended use. During a crash or when making sudden maneuvers, loose objects can slide around or become airborne, injuring the driver and any passengers. Objects that could become a hazard should be secured or stored outside the passenger compartment.

Fatigued Driving

Fatigued or drowsy driving may be involved in more than 100,000 crashes each year, resulting in 40,000 injuries and 1,550 deaths. Sadly, these numbers represent only the tip of the iceberg since these crashes are

seriously under-reported. These days, it is more important than ever for employees to be well-rested, alert, and sober on the road so that they can defend themselves from drivers who do not make the same choice. Train employees to make smart decisions when they are behind the wheel, on and off the job.

VEHICLE SAFETY INSPECTION

Driver: _____

Inspected by: _____

Date: _____

Vehicle Year, Make, Model: _____

Vehicle Number: _____

Mileage: _____

EXTERIOR	**YES**	**NO**
Lights (tail, signal, brake): broken lens, burned out bulbs (L) (R) ----------	☐	☐
Headlights: broken lens, burned out bulbs, odd angle (L) (R) ----------	☐	☐
Side mirrors: broken, missing (L) (R) ----------	☐	☐
Tires: air pressure, worn, leak (L) (R) (F) (B) ----------	☐	☐
Body: dents, scratches, rust (L) (R) (F) (B) ----------	☐	☐
Windshield and windows: cracks, dirty (L) (R) (F) (B) ----------	☐	☐
Windshield wipers: worn blades, noises (L) (R) ----------	☐	☐
Cleanliness ----------	☐	☐
Leaks: fluid underneath vehicle ----------	☐	☐
INTERIOR		
Dashboard instruments: not working ----------	☐	☐
Air conditioner: not working ----------	☐	☐
Heater: not working ----------	☐	☐
Defrost: not working ----------	☐	☐

Horn: not working ---------- ☐ ☐

Rearview mirror: missing, adjustment ---------- ☐ ☐

Emergency equipment: spare tire, jack, fire extinguisher, first aid kit ---------- ☐ ☐

Seat belts: proper condition ---------- ☐ ☐

Cleanliness ---------- ☐ ☐

MECHANICAL

Steering: wheel alignment, excessive play ---------- ☐ ☐

	YES	NO
Engine: unusual noise, stalling hesitation, rough starting or running ----------	☐	☐
Brakes: noises, improper functioning ----------	☐	☐
Steering: wheel alignment, excessive play ----------	☐	☐
Transmission: noises, slow movement ----------	☐	☐

Electrical Safety

Introduction

Most electrical accidents are caused by a combination of three factors - unsafe equipment and/or installation, the environment, and unsafe work practices. There are various ways of protecting people from the hazards caused by electricity. These include insulation, guarding, grounding, mechanical devices, and safe work practices.

Electrical Safety: Qualified/Non-Qualified

This section addresses the safe working practices and the hazards faced by Global Inspection Services employees who observe work being done on exposed energized and de-energized parts or employees who come near enough to be exposed to the electrical hazards they present. Safe work practices will be employed to prevent Global Inspection Services employees from electric shock or other injuries resulting from either direct or in-direct electrical contacts when observing work being performed near or on equipment that may be energized. Global Inspection Services employees who face the risk of electric shock but are unqualified will be trained and familiar with electrically related safety practices. Employees will be trained in safety related work practices that relate to their job scope. GIS employees are not authorized to work on any energized electrical parts

1. Only a qualified electrician will perform electrical work or repairs.
2. Electrical components will be locked and tagged out before they are worked on except when necessary to locate a definite problem and then only qualified electricians perform this work.

3. Live electrical equipment and components will not be worked on without proper non-conductive tools.
4. AC light plants will be grounded immediately when set on location. All other skids with electrical power will have properly sized grounding conductors connected to the generator skid.
5. Switches will never be thrown “in” or “out” under loaded circuit. All lighting fixtures shall be kept in good repair. Broken or burned-out bulbs will be replaced as soon as possible, and vapor proof globes and guards will be kept in place over lights.
6. Drop cords and lights will have metal guards surrounding them unless this metal guard can become conductive.
7. All electrical cables will be protected from physical damage. Damaged or cut cables will be repaired, spliced, or replaced as soon as possible, broken, or defective portable cables, such as a bug blower or extension cords will be cut to shorter length or replaced.
8. Electrically powered hand tools will not be equipped with a trigger locking device for continuous running, and all should be properly grounded, or of the double insulated U.L. approved case design.
9. All 120-volt single-phase 15 and 20 ampere receptacle outlets on all jobsites, which are not part of the permanent wiring of the building or structure, shall be protected by an approved ground-fault circuit interrupter (GFCI).
10. Portable GFCI’s shall be tested and inspected before each use.
11. Fuse pullers will be always available for changing electrical fuses. Periodic checks for proper circuit grounds of all electric outlets will be performed.
12. All high voltage panes (above 440 volts) will be clearly marked “**DANGER- HIGH VOLTAGE**.”
13. Electrical apparatus and areas near electrical equipment will not be washed down with water.
14. Electrical hand tools will not be used while standing in water or outside during foul weather conditions.
15. Personnel rescuing a victim of electrical shock will first switch off the power causing the shock. If this is not possible, attempt to pull the victim away from contact with the live conductor using a dry stick, a dry rope, or other non-conductive material.
16. Jewelry and clothing that are conductive shall not be worn unless they are rendered non-conductive by covering, wrapping or other insulating means.
17. Any vehicular or mechanical equipment that can have its moving parts or its structure elevated near overhead lines, will keep a clearance of at least 20 ft. for lines containing 50kv. For every 10kv over 50kv, 4 inches will be added to the original 20 feet.
18. When an unqualified person is working on a line, he or she may not come close to any unguarded, energized overhead line than:

- For voltage to ground 50kv or below- 20 feet
- For voltage to ground over 50kv- 20 feet, plus an additional 4 inches added to the original 20 feet for every 10kv over 50 kV.

19. If work is going 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.
20. Only qualified persons (i.e., those permitted to work on or near exposed energized parts) may work on energized parts or equipment. These qualified people will be made familiar.

Training

All employees shall be trained in and be familiar with all electrical related safety practices which are necessary for their safety. The training received will be both in the classroom and in the field. The degree to which an employee must be trained will be determined by his/her job-specific risk of electrical-related injury.

1. The training for **qualified persons**, those authorized to work on or in the proximity of exposed energized parts, shall include, but not be limited to:
2. The skills and techniques necessary to distinguish exposed live parts from other parts of electric equipment.
3. The skills and techniques necessary to determine the nominal voltage of exposed live parts.
4. The clearance distances specified in # 18 above.
5. Special precautionary techniques, personal protective equipment, insulating and shielding.

Note

Only qualified persons may work on electric circuit parts or equipment that has not been de-energized. Whenever possible, employees are expected to de-energize equipment or lines prior to working on them.

The training for all other employees, **unauthorized persons**, will include:

1. A comprehensive understanding of the conductive properties of items in the vicinity of high voltage.
2. Safe operating practices while in the vicinity of equipment that is engaged in work on high-voltage power lines.

NOTE: Additional precautions, such as the use of barricades or insulation, shall be trained on and implemented to protect employees from hazardous ground potentials, which can develop within the first few feet or more outward from the grounding point.

3. All employees will be trained on and familiar with the clearance distances specified in #18 above, as well as any other electrical hazards relevant to their position.

Assured Equipment Grounding Conductor Program (GFCI)

It is the policy of Global Inspection Services to ensure that Contractors have an assured equipment grounding conductor program on construction sites covering all electrical cord sets, receptacles which are not a part of the permanent wiring of the building or structure, and equipment connected by cord and plug which are available for use or used by employees. This policy shall apply to all construction sites not equipped with ground fault circuit interrupters in accordance with OSHA standard 1926.400 (h)

Contractors will ensure their supervisors are designated to implement the assured equipment grounding conductor program:1926.32 (f) defines competent person as one who can identify existing and predictable hazards in the surrounding area or working conditions which are unsanitary, hazardous, or dangerous to employees, and who is authorized to take prompt corrective measures to eliminate them.

Supervisors will be responsible and accountable for the following:

Each electrical cord set, attachment cap, plug and receptacle of cord set, and any equipment connected by cord and plug, except cord sets and receptacles which are fixed and not exposed to damage, shall be visually inspected before each day's use for external defects, such as deformed or missing pins, or insulation damage,

and for indication of possible internal damage. Equipment found damaged or *defective* may not be used until repaired and should be marked accordingly.

Construction Supervisors are responsible for tests on all electrical cord sets, receptacles which are not a part of the permanent wiring of the building or structure, and cord and plug connected equipment repaired to be grounded. Tests shall be documented for assured equipment grounding conductor program and shall be on the job site for inspection by OSHA officials and any affected employee. Equipment that does not meet prescribed test shall not be put into service. The following tests shall be performed:

A. all equipment grounding conductors shall be tested for continuity and shall be electrically continuous.

B. each receptacle and attachment cap or plug shall be tested for correct attachment of the equipment grounding conductor. The equipment grounding shall be connected to its terminal.

In accordance with OSHA Construction Safety and health Standards 1926.21 Safety Training and

Education, supervisors shall attend such training sessions as the company may deem necessary.

A copy of this policy shall be at the job site for inspection. Management retains the authority to designate that certain jobs comply with regulation 1926.400 (h) by use of ground fault circuit interrupters in lieu of the program established *above.* A copy of the completed forms will be kept on each applicable job site for inspection purposes.

WRITTEN DESCRIPTION

ASSURED EQUIPMENT GROUNDING CONDUCTOR PROGRAM

I. Scope

This procedure describes the requirements to assure the installation and maintenance of equipment grounding conductors for temporary wiring on construction sites in accordance with paragraph (c) (30 of part 1910.309 of the Occupational Safety and Health Standard and paragraph (h) (3) of part 1926.400 of the Safety and Health regulations for construction.

II. Policy

Ground fault circuit interrupters (GFCl's) are not required for 120-volt, single phase, 15- and 20- ampere receptacles outlets where all the requirements of this procedure are implemented at the construction site. Employees shall not use any equipment which has not met the requirements of this procedure.

III. Job site Information

A. Name or description of construction site: _____

B. Employer complying with this procedure is: _____

C. Person designated to implement the procedure is: _____

IV. Requirements

Equipment grounding conductors shall be installed and maintained in accordance with this procedure.

A. **Installation** - Equipment grounding conductors shall be installed as follows:

a. All 120-volt, single phase, 15- and 20- ampere receptacles shall be of the grounding type and their contacts shall be grounded by connection to the equipment grounding conductor of the circuit supply the receptacle in accordance with the applicable requirements of the National Electrical Code.

b. All 120-volt cord sets (extension cords) shall have an equipment grounding conductor which shall be connected to the grounding contacts of the connector(s) on each end of the cord.

c. The exposed concurrent-carrying metal parts of the 120-volt cord and plug connected tools and equipment that are likely to become energized shall be grounded in accordance with the applicable requirements of the National Electrical Code.

B. Visual Inspection

Employees shall be instructed to visually inspect receptacle, flexible cord sets (extension cords), except those that are fixed and not exposed to damage, and equipment connected by cord and plug before each day's use for external defects such as deformed or missing pins or insulation damage and for indication **of** possible internal damage. Where there is evidence of damage, the damaged item shall be taken out of service and tagged until tested and any required repairs have been made.

a) All 120-volt, single phase, 15 and 20- ampere receptacles which are not a part of the permanent wiring of the building or structure, 120-volt flexible cord sets, and

120-volt cord and plug connected equipment required to be grounded shall be tested as follows:

b) All equipment grounding conductors shall be tested for continuity and shall be electrically continuous.

c) Each receptacle and attachment cap or plug shall be tested or correct attachment of the equipment grounding conductor. The equipment grounding conductor shall be connected to its proper terminal.

C. Testing Schedule

All required tests shall be performed:

a) Before first use.

b) Before equipment is returned to service following any repairs.

c) Before equipment is used after any incident which can be reasonably suspected to have caused damage (for example, when a cord set is run over)

d) At intervals not to exceed 3 months, except that cord sets and receptacle which are fixed and not exposed to damage shall be tested at intervals not exceeding 6 months.

D. Test Records

Test verification shall be by means of numeric or color-coded marking tape on the receptacle, cord set or equipment to identify that it has passed the test and to indicate the date (month or quarter) in accordance with section 5.0 Coding Scheme.

Environmental Policy

Global Inspection Services is dedicated to and committed to fulfilling the moral obligation we all must help protect the environment. Furthermore, Global Inspection Services will meet or exceed all regulatory and client requirements within the scope of our responsibilities. Damage to the environment is not a short term, but rather a long-term problem.

Environmental Responsibilities and Training

Employees will be taught the environmental regulations and pollution prevention practices that are **applicable** to their operating responsibilities. Employees are expected to act on their knowledge by performing their job in a way that complies with regulatory requirements and company policies, standards, guidelines, and procedures.

General Awareness

- All protected plant and animal wildlife will be protected from industrial or other development activities. It is illegal to harm, harass, feed, pursue, wound, capture, or possess an endangered species in any way. Global Inspection Services will refer to these protection parameters as provided by clients.
- Plants, animals, and artifacts, including but not limited to arrowheads, rocks, and fossils, must not be removed from ROW & leases.

- Consider nuisance impacts such as odors, smoke and dust and improve as appropriate.
- That all trash and liter should be collected and disposed of properly. Not allowing trash to become free and blow around.

Equipment Awareness

- Pollution control equipment should be maintained in proper working order.
- Vehicles, ATVs, and other equipment used should be inspected regularly for leaks that could contaminate the immediate area.
- Global Inspection Services will comply with all client air emission requirements.
- All drainage and sump systems must be regularly inspected.

Chemical Storage & Application

- All chemicals will be stored and disposed of properly. All chemical containers will be properly labeled.

Spills & Leaks

- Global Inspection Services will follow all client SPCC (Spill Prevention and Countermeasure) Plans. The Global Inspection Services Supervisor will ask client representatives about any special procedures needed for these plans.
- Global Inspection Services will assist in client spill investigations and reporting to the best of their ability.
- The first person to become aware of a spill will try to stop the spill if it can be done so safely. Global Inspection Services will approach all spill clean-up only with the proper training, proper containment equipment and applicable personal protective equipment. If provided by the client.
- Drip pans will be used to catch any leaks. Leaks will be repaired. Drip pans will be emptied until leaks are repaired.
- Damage to retainer walls around tank batteries should be reported to the appropriate operator representative.
- Global Inspection Services employees must be aware of NORM-contaminated wastes (Naturally Occurring Radioactive Materials). Because Global Inspection Services does not own any process that produces this type of waste, Global Inspection Services must rely on client information about possible exposures.
- Global Inspection Services employees will never remove contaminated or potentially contaminated products or waste from any clients' property. Global Inspection Services will assist the client in contacting those companies who are licensed and trained for contaminated waste removal.

Wetland Awareness

Global Inspection Services employees will with good conscience understand the environmental impact that construction activities could have on sensitive wetland areas.

Potential considerations for affected areas:

- Types of plant and animal species that occur in the area
- State and federally listed species
- Critical habitats for federal listed species
- Waterfowl refuges
- Wildlife management areas
- Caves
- Springs or seeps
- Sink holes
- Streams that may be affected by construction included those:
- That may be crossed.
- Parallel to the alignment and may be relocated; and
- Potentially affected only by sediment in runoff

Best Practices could include any of the following:

- Straw booms/bales
- Erosion control blankets
- Silt Fences
- Rock/gravel/riprap
- Check dams
- Surface roughing
- Seeding & vegetation
- Sediment basins
- Dewatering structures
- Timber brush mats for waterway crossings

Global Inspection Services will follow all Wetlands requirements as found within the Clean Water Act.

Global Inspection Services clients must inform Global Inspection Services management and employees of these types of environmental considerations.

Fall Protection

Introduction

The following Fall Protection Plan for small business construction projects was prepared using guidelines provided in 29 CFR 1926, Subpart M, Fall Protection, Appendix E. This fall protection plan is provided as a resource and not designed to address all work site scenarios and fall hazards. It is a set of policies and procedures designed to help identify and reduce fall hazards. The general approach is centered on a five (5) tiered hierarchy of fall protection controls, as outlined below.

1. The top priority is to **eliminate the fall hazard**, whenever feasible.
2. The second priority is to **install and use passive fall restraints** (e.g., guardrails and barriers) to prevent falls.
3. The third priority is to **use active fall restraints** to prevent falls.
4. The fourth priority is to **use fall arrest systems** to prevent severe injuries in the event of a fall.
5. The last resort is to **establish a controlled access zone** to notify and warn workers of fall hazards.

Occupational Safety and Health Administration (OSHA) regulations require the use of fall protection when construction workers are working at heights of 6 feet or greater above a lower level. It is recommended that at heights of 4 feet or greater be used when working near dangerous equipment, for example, working over machinery with open drive belts, pulleys or gears or open vats of degreasing agents or acid.

Each work site and job task can be unique and contain several fall hazards that must be addressed prior to the beginning work. Supervisors and workers are responsible for assessing these hazards and taking necessary corrective actions to reduce dangerous falls. All fall protection equipment shall be ANSI certified.

Site specific fall protection plans will be developed by a qualified person.

Scope

This Fall Protection Plan is a set of general policies for the following project or types of projects:

- Carpentry – framing and general
- Concrete and stonework
- Electrical work
- Machine and equipment installation work
- Painting and coating
- Plumbing and piping work
- Roofing work
- Scaffold work
- Sheet metal work
- Telecommunications work

The following Fall Protection Plan is a program prepared for the prevention of injuries associated with falls from heights greater than 6 feet above a lower level or 4 feet above a hazard. A Fall Protection Plan must be developed and evaluated on a site- by-site basis. It is recommended that builders discuss the written Fall Protection Plan with their OSHA Area Office prior to going on a jobsite.

Company Policy

Global Inspection Services is dedicated to protecting employees from on-the-job injuries. All employees have the responsibility to work safely on the job. The purpose of this plan is to supplement our existing safety and health program and to ensure that every employee recognizes workplace fall hazards and acts appropriately to address those hazards. A fall hazard is one associated with falls from heights

greater than 6 feet above a lower level or 4 feet above a hazard. The general approach is centered on a five (5) tiered hierarchy of fall protection controls, as outlined below.

Hierarchy of Fall Protection Controls

Priority	Control	Examples
First	Eliminate the fall hazard	Bring work to ground level; Use tools to eliminate work above ground level
Second	Passive fall restraint	Install physical barriers, such as guardrails or parapets, to prevent falls
Third	Active fall restraint	Use a restraint system (e.g., full-body harness, lanyard, and anchor) to prevent falls
Fourth	Fall arrest	Use a personal fall arrests system or safety net to minimize fall injuries
Fifth	Controlled access zones (CAZ) a last resort	When fall protection is not feasible, provide adequate training, on-site supervision, signage, and visible barriers to preclude workers from fall hazard zones

This Fall Protection Plan addresses the use of conventional fall protection at several areas on the project, as well as identifies specific activities that require non-conventional

means of fall protection. During the construction of buildings under 48 feet in height, it is sometimes infeasible, or it creates a greater hazard to use conventional fall protection systems at specific areas or for specific tasks. The areas or tasks may include, but are not limited to:

- Setting and bracing of roof trusses and rafters.
- Installation of floor sheathing and joists.
- Roof sheathing operations; and
- Erecting exterior walls.

In these cases, conventional fall protection systems may not be the safest choice for builders. This plan is designed to enable employers and employees to recognize the fall hazards associated with this job and to establish the safest procedures that are to be followed to prevent falls to lower levels or through holes and openings in walking/working surfaces.

Employee Training and Responsibilities

Each employee will be provided training in these fall protection procedures, and he/she will strictly adhere to them except when doing so would expose the employee to a greater hazard. If, in the employee's opinion, this is the case, the employee is to notify the competent person of their concern and have the concern addressed before proceeding.

Employer Responsibilities

On the job, it is the responsibility of the Competent Person to implement this Fall Protection Plan. Continual observational safety checks of work operations and the enforcement of the safety policy and procedures shall be regularly enforced. The crew supervisor or foreman is responsible for correcting any unsafe practices or conditions immediately.

It is the responsibility of the employer to ensure that all employees understand and adhere to the procedures of this plan and to follow the instructions of the crew supervisor or foreman. It is also the responsibility of the employee to bring to management's attention any unsafe or hazardous conditions or practices that may cause injury to either themselves or any other employees. The DESIGNATED COMPETENT PERSON must approve any changes to the Fall Protection Plan.

Fall Protection Systems to Be Used on The Job

Installation of roof trusses/rafters, exterior wall erection, roof sheathing, floor sheathing and joist/truss activities will be conducted by employees who are specifically trained to do this type of work and are trained to recognize the fall hazards. The nature of such work normally exposes the employee to the fall hazard for a short period. This Plan details how **Global Inspection Services** will minimize these hazards.

Eliminating Fall Hazards – Priority One

The top priority of the fall protection plan is to eliminate fall hazards whenever feasible. This includes moving tasks to ground level, as well as changing the workflow and job design to allow work to be performed at ground level.

Passive Fall Restraints – Guardrail Systems

When it is not feasible to eliminate a fall hazard, then physical barriers, such as guardrail systems, should be installed to prevent falls. A guardrail system must be durably constructed and meet OSHA design specifications.

Guardrail systems are barriers erected to prevent workers from falling to lower levels. If the employer chooses to use guardrail systems to protect workers from falls, the following provisions apply:

- Top rails, or equivalent guardrail system members, must be 42 inches plus or minus 3 inches above the walking or working level. When workers are using stilts, the top edge of the top rail, or

equivalent member, must be increased an amount equal to the height of the stilts. 29 CFR 1926.502(b)(1).

- Screens, midrails, mesh, intermediate vertical members, or equivalent intermediate structural members must be installed between the top edge of the guardrail system and the walking or working surface when there are no walls or parapet walls at least 21 inches high. 29 CFR 1926.502(b)(2).
- When midrails are used, they must be installed at a height midway between the top edge of the guardrail system and the walking or working level.
- When screens and mesh are used, they must extend from the top rail to the walking or working level and along the entire opening between top rail supports.
- When necessary, screens and/or mesh must be installed in a manner to prevent worker from falling underneath.
- When intermediate members (such as balusters) are used between posts, they must not be more than 19 inches apart.
- Other structural members (such as additional midrails and architectural panels) must be installed so that there are no openings in the guardrail system more than 19 inches wide.

Guardrail systems must be capable of withstanding a force of at least 200 pounds applied within 2 inches of the top edge, in any outward or downward direction, at any point along the top edge. 29 CFR 1926.502(b)(3).

- Midrails, screens, mesh, intermediate vertical members, solid panels, and equivalent structural members must be capable of withstanding a force of at least 150 pounds applied in any downward or outward direction at any point along the midrail or other member. 29 CFR 1926.502(b)(5).
- Guardrail systems must have a surface to protect workers from punctures or lacerations and to prevent clothing from snagging. 29 CFR 1926.502(b)(6).
- The ends of top rails and midrails must not overhang terminal posts, except where an overhang poses no projection hazard. 29 CFR 1926.502(b)(7).
- Steel and plastic banding cannot be used as top rails or midrails. 29 CFR 1926.502(b)(8).
- Top rails and midrails of guardrail systems must have a nominal diameter or thickness of at least 1/4 inch to prevent cuts and lacerations. 29 CFR 1926.502(b)(9).
- If wire rope is used for top rails, it must be flagged at not more than 6-foot intervals with high-visibility material. 29 CFR 1926.502(b)(9).
- When guardrail systems are used at hoisting areas, a chain, gate, or removable guardrail section must be placed across the access opening between guardrail sections during those times when hoisting operations are not taking place. 29 CFR 1926.502(b)(10).
- When guardrail systems are used at holes, they must be set up on all unprotected sides or edges. When a hole is used for the passage of materials, it must not have more than two sides with removable guardrail sections. When the hole is not in use, it must be covered or provided with a guardrail system along all unprotected sides or edges. 29 CFR 1926.502(b)(11) & (12).
- If guardrail systems are used around holes being used as access points (such as ladderways), gates must be used. Alternatively, the point of access must be offset to prevent workers from accidentally walking straight into the hole. 29 CFR 1926.502(b)(13).

- If guardrails are used on ramps and runways, they must be erected on each unprotected side or edge. 29 CFR 1926.502(b)(14).
- Manila, plastic, or synthetic rope used for top rails or midrails must be inspected as frequently as necessary to ensure its strength and stability. 29 CFR 1926.502(b)(15).

Active Fall Restraints

While fall restraint systems are not mentioned in Subpart M, OSHA recognizes a fall restraint system as a means of prevention. The system, if properly used, tethers a worker in a manner that will not allow a fall of any distance. This system is comprised of a body harness, an anchorage, connectors, and other necessary equipment. Other components typically include a lanyard, a lifeline, and other devices. For a restraint system to work, the anchorage must be strong enough to prevent the worker from moving past the point where the system is fully extended, including an appropriate safety factor.

OSHA suggested that, at a minimum, a fall restraint system must have the capacity to withstand at least 3,000 pounds or twice the maximum expected force that is needed to restrain the person from exposure to the fall hazard.

Fall Arrest Systems

A personal fall arrest system is a system used to safely stop (arrest) a worker who is falling from a working level. It consists of an anchorage, connectors, and a body harness. It also may include a lanyard, deceleration device, lifeline, or suitable combinations of these. Body belts (safety belts) are prohibited for use as part of a personal fall arrest system.

When employers choose to use a personal fall arrest system as a means of worker fall protection they must:

- Limit the maximum arresting force on a worker to 1,800 pounds when used with a body harness. 29 CFR 1926.502(d)(16)(ii).
- Be rigged so that a worker can neither free fall more than 6 feet nor contact any lower level. 29 CFR 926.502(d)(16)(iii).
- Bring a worker to a complete stop and limit the maximum deceleration distance a worker travels to 3.5 feet. 29 CFR 1926.502(d)(16)(iv).
- Have sufficient strength to withstand twice the potential impact energy of a worker free falling 6 feet or the free fall distance permitted by the system, whichever is less. 29 CFR 1926.502(d)(16)(v).
- Be inspected prior to each use for wear, damage, and other deterioration. Defective components must be removed from service. 29 CFR 1926.502(d)(21).

Personal Fall Arrest System Components

Snap hooks

Snap hooks must be the locking type and designed and used to prevent disengagement from any component part of the personal fall arrest system. 29 CFR 1926.502(d)(5).

Unless the snap hook is a locking type and designed for the following connections, snap hooks shall not be engaged:

- directly to webbing, rope, or wire rope.
- to each other.
- to a Dee-ring to which another snap hook or other connector is attached.
- to a horizontal lifeline; or
- to any object which is incompatibly shaped or dimensioned in relation to the snap hook, such that unintentional disengagement could occur by the connected object being able to depress the snap hook keeper and release itself. 29 CFR 1926.502(d)(6).

Horizontal Lifelines

On suspended scaffolds or similar work platforms with horizontal lifelines that may become vertical lifelines, the devices used to connect to a horizontal lifeline must be capable of locking in both directions on the lifeline. 29 CFR 1926.502(d)(7).

Horizontal lifelines must be designed, installed, and used under the supervision of a qualified person, as part of a complete personal fall arrest system that maintains a safety factor of at least two. 29 CFR 1926.502(d)(8).

Vertical Lifelines and Lanyards

Vertical lifelines and lanyards must have a minimum breaking strength of 5,000 pounds. 29 CFR 1926.502(d)(9). Lifelines must be protected against being cut or abraded. 29 CFR 1926.502(d)(11).

Self-retracting Lifelines and Lanyards

Self-retracting lifelines and lanyards that automatically limit free fall distance to 2 feet or less must be capable of sustaining a minimum tensile load of 3,000 pounds applied to the device with the lifeline or lanyard in the fully extended position. 29 CFR 1926.502(d)(12).

Self-retracting lifelines and lanyards which do not limit free fall distance to 2 feet or less, rip stitch lanyards, and tearing and deforming lanyards must be capable of sustaining a minimum tensile load of 5,000 pounds applied to the device with the lifeline or lanyard in the fully extended position. 29 CFR 1926.502(d)(13).

Ropes and Straps

Ropes and straps (webbing) used in lanyards, lifelines, and strength components of body belts and body harnesses must be made of synthetic fibers. 29 CFR 1926.502(d)(14).

Anchorages

Anchorages used to attach personal fall arrest systems must be designed, installed, and used under the supervision of a qualified person, as part of a complete personal fall arrest system which maintains a safety factor of at least two. Alternatively, the anchorages must be independent of any anchorage being used to support or suspend platforms and must be capable of supporting at least 5,000 pounds per worker attached or be capable of supporting at least twice the expected impact load. 29 CFR 1926.502(d)(15).

Rescue Plans and Equipment

Workers cannot stay suspended for long and are at risk of reduced blood flow, oxygen deprivation, brain damage, cardiac arrest, and death. According to the American National Standards Institute (ANSI) Standard Z359, rescue should be completed within six minutes of a fall arrest. All workers using fall arrest systems must be monitored and promptly rescued in the event of a fall. In addition to rescue equipment available onsite, use of self-rescue devices is recommended.

Fall arrest rescue equipment that need to be available onsite when fall arrest equipment are used include:

- Ladders
- Rescue poles
- Rescue ropes
- Rescue wrench
- Crane
- Aerial lift
- Scaffold
- Lifting or lowering device

Controlled Access Zones - A Last Resort

When using the Plan to implement the fall protection options available, workers must be protected through limited access to high hazard locations. Before any non-conventional fall protection systems are used as part of the work plan, a controlled access zone (CAZ) shall be clearly defined by the competent person as an area where a recognized hazard exists. The competent person shall communicate the demarcation of the CAZ in a recognized manner, through either signs, wires, tapes, ropes, or chains.

Global Inspection Services shall take the following steps to ensure that the CAZ is clearly marked or controlled by the competent person:

- All access to the CAZ must be restricted to authorized entrants.
- All workers who are permitted in the CAZ shall be listed in the appropriate sections of the Plan (or be visibly identifiable by the competent person) prior to implementation.
- The competent person shall ensure that all protective elements of the CAZ be implemented prior to the beginning of work.

Installation Procedures for Roof Truss and Rafter Erection

During the erection and bracing of roof trusses/rafters, conventional fall protection may present a greater hazard to workers. On this job, safety nets, guardrails and personal fall arrest systems will not provide adequate fall protection because the nets will cause the walls to collapse, while there are no suitable attachment or anchorage points for guardrails or personal fall arrest systems.

Ladders

On this job, requiring workers to use a ladder for the entire installation process will cause a greater hazard because the worker must stand on the ladder with his back or side to the front of the ladder. While erecting the truss or rafter the worker will need both hands to maneuver the truss and therefore

cannot hold onto the ladder. In addition, ladders cannot be adequately protected from movement while trusses are being maneuvered into place. Many workers may experience additional fatigue because of the increase in overhead work with heavy materials, which can also lead to a greater hazard.

Exterior Scaffolds

Exterior scaffolds cannot be utilized on this job because the ground, after recent backfilling, cannot support the scaffolding. In most cases, the erection and dismantling of the scaffold would expose workers to a greater fall hazard than erection of the trusses/rafters.

Walls Under 8 Feet Tall

On all walls eight feet or less, workers will install interior scaffolds along the interior wall below the location where the trusses/rafters will be erected. "Sawhorse" scaffolds constructed of 46-inch sawhorses and 2x10 planks will often allow workers to be elevated high enough to allow for the erection of trusses and rafters without working on the top plate of the wall.

Walls Over 8 Feet Tall

In structures that have walls higher than eight feet and where the use of scaffolds and ladders would create a greater hazard, safe working procedures will be utilized when working on the top plate and will be monitored by the crew supervisor. During all stages of truss/rafter erection the stability of the trusses/rafters will be always ensured.

Work from Top Plate Installing Trusses/Rafters

Global Inspection Services shall take the following steps to protect workers who are exposed to fall hazards while working from the top plate installing trusses/rafters. The following requirements must be followed:

- Only the trained workers will be allowed to work on the top plate during roof truss or rafter installation.
- Workers shall have no other duties to perform during truss/rafter erection procedures.
- All trusses/rafters will be adequately braced before any worker can use the truss/rafter as a support.
- Workers will remain on the top plate using the previously stabilized truss/rafter as a support while other trusses/rafters are being erected.
- Workers will leave the area of the secured trusses only when it is necessary to secure another truss/rafter.
- The first two trusses/rafters will be set from ladders leaning on side walls at points where the walls can support the weight of the ladder: and
- A worker will climb onto the interior top plate via a ladder to secure the peaks of the first two trusses/rafters being set.
- The workers responsible for detaching trusses from cranes and/or securing trusses at the peaks traditionally are positioned at the peak of the trusses/rafters. There are also situations where workers securing rafters to ridge beams will be positioned on top of the ridge beam.

Global Inspection Services shall take the following steps to protect workers who are exposed to fall hazards while securing trusses/rafters at the peak of the trusses/ridge beam:

- Only the trained workers will be allowed to work at the peak during roof truss or after installation:
- Once truss or rafter installation begins, workers not involved in that activity shall not stand or walk below or adjacent to the roof opening or exterior walls in any area where they could be struck by falling objects.
- Workers shall have no other duties than securing/bracing the trusses/ridge beam.
- Workers positioned at the peaks or in the webs of trusses or on top of the ridge beam shall work from a stable position, either by sitting on a "ridge seat" or other equivalent surface that provides additional stability or by positioning themselves in previously stabilized trusses/rafters and leaning into and reaching through the trusses/rafters.
- Workers shall not remain on or in the peak/ridge any longer than necessary to complete the task safely.

Roof Sheathing Operations

Workers typically install roof sheathing after all trusses/rafters and any permanent truss bracing is in place. Roof structures are unstable until some sheathing is installed, so workers installing roof sheathing cannot be protected from fall hazards by conventional fall protection systems until it is determined that the roofing system can be used as an anchorage point. At that point, employees shall be protected by a personal fall arrest system.

Trusses/rafters are subject to collapse if a worker falls while attached to a single truss with a belt/harness. Nets could also cause collapse, and there is no place to attach guardrails.

All workers will ensure that they have secure footing before they attempt to walk on the sheathing, including cleaning shoes/boots of mud or other slip hazards.

To minimize the time workers must be exposed to a fall hazard, materials will be staged to allow for the quickest installation of sheathing.

Global Inspection Services shall take the following steps to protect workers who are exposed to fall hazards while installing roof sheathing:

Once roof sheathing installation begins, workers not involved in that activity shall not stand or walk below or adjacent to the roof opening or exterior walls in any area where they could be struck by falling objects.

- The competent person shall determine the limits of this area, which shall be clearly communicated to workers prior to placement of the first piece of roof sheathing.
- The competent person may order work on the roof to be suspended for brief periods as necessary to allow other workers to pass through such areas when this would not create a greater hazard.
- Only qualified workers shall install roof sheathing.
- The bottom row of roof sheathing may be installed by workers standing in truss webs.

- After the bottom row of roof sheathing is installed, a slide guard extending the width of the roof shall be securely attached to the roof. Slide guards are to be constructed of no less than nominal 4" height capable of limiting the uncontrolled slide of workers. Workers should install the slide guard while standing in truss webs and leaning over the sheathing.
- Workers positioned on previously installed rows of sheathing may install additional rows of roof sheathing. A slide guard can be used to assist workers in retaining their footing during successive sheathing operations; and
- Additional slide guards shall be securely attached to the roof at intervals not to exceed 13 feet as successive rows of sheathing are installed. For roofs with pitches more than 9-in-12, slide guards will be installed at four-foot intervals.
- When wet weather (rain, snow, or sleet) are present, roof-sheathing operations shall be suspended unless safe footing can be assured for those workers installing sheathing.

When strong winds (above 40 miles per hour) are present, roof-sheathing operations are to be suspended unless windbreakers are erected. Installation of Floor Joists and Sheathing During the installation of floor sheathing/joists (leading edge construction), the following steps shall be taken to protect workers:

- Only trained workers will be allowed to install floor joists or sheathing:
- Materials for the operations shall be conveniently staged to allow for easy access to workers.
- The first-floor joists or trusses will be rolled into position and secured either from the ground, ladders, or sawhorse scaffolds.
- Each successive floor joist or truss will be rolled into place and secured from a platform created from a sheet of plywood laid over the previously secured floor joists or trusses.
- Except for the first row of sheathing which will be installed from ladders or the ground, workers shall work from the established deck; and
- Any workers not assisting in the leading-edge construction while leading edges still exist (e.g., cutting the decking for the installers) shall not be permitted within six feet of the leading edge under construction.

Erection of Exterior Walls

During the construction and erection of exterior walls, employers shall take the following steps to protect workers:

- Only the following trained workers will be allowed to erect exterior walls:
- A painted line six feet from the perimeter will be clearly marked prior to any wall erection activities to warn of the approaching unprotected edge.
- Materials for operations shall be conveniently staged to minimize fall hazards; and
- Workers constructing exterior walls shall complete as much cutting of materials and other preparation as possible away from the edge of the deck.

Additional Fall Protection Measures May Be Required

The Fall Protection Plan is a program designed to address common fall hazards. It does not address all fall hazards. In the case of special hazards or the use of fall protection techniques not described here, please refer to the applicable OSHA regulations in Title 29 of the Code of Federal Regulations.

Stairways

The rules covering stairways and their components generally depend on how and when stairs are used. Specifically, there are rules for stairs used during construction and stairs used temporarily during construction, as well as rules governing stair rails and handrails.

Stairways Used During Construction

The following requirements apply to all stairways used during construction:

- Stairways that will not be a permanent part of the building under construction must have landings at least 30 inches deep and 22 inches wide (76 x 56 cm) at every 12 feet (3.7 m) or less of vertical rise.
- Stairways must be installed at least 30 degrees —and no more than 50 degrees—from the horizontal.
- Variations in riser height or stair tread depth must not exceed 1/4 inch in any stairway system, including any foundation structure used as one or more treads of the stairs.
- Doors and gates opening directly onto a stairway must have a platform that extends at least 20 inches (51 cm) beyond the swing of the door or gate.
- Metal pan landings and metal pan treads must be secured in place before filling.
- Stairway parts must be free of dangerous projections such as protruding nails.
- Slippery conditions on stairways must be corrected.
- Workers must not use spiral stairways that will not be a permanent part of the structure.

Temporary Stairs

The following requirements apply to stairways used temporarily during construction.

- Except during construction of the stairway, do not use stairways with metal pan landings and treads if the treads and/or landings have not been filled in with concrete or other materials unless the pans of the stairs and/or landings are temporarily filled in with wood or other materials. All treads and landings must be replaced when worn below the top edge of the pan.
- Do not use skeleton metal frame structures and steps (where treads and/or landings will be installed later) unless the stairs are fitted with secured temporary treads and landings.

Note: Temporary treads must be made of wood (or other solid material) and installed the full width and depth of the stair.

Stair Rails

The following general requirements apply to all stair rails:

- Stairways with 4 or more risers or rising more than 30 inches (76 cm) in height— whichever is less—must be installed along each unprotected side or edge. When the top edge of a stair rail system also serves as a handrail, the height of the top edge must be no more than 37 inches (94 cm) nor less than 36 inches (91.5 cm) from the upper surface of the stair rail to the surface of the tread.
- Stair rails installed after March 15, 1991, must be not less than 36 inches (91.5 cm) in height.

- Top edges of stair rail systems used as handrails must not be more than 37 inches (94 cm) high nor less than 36 inches (91.5 cm) from the upper surface of the stair rail system to the surface of the tread. (If installed before March 15, 1991, not less than 30 inches [76 cm]).
- Stair rail systems and handrails must be surfaced to prevent injuries such as punctures or lacerations and to keep clothing from snagging.
- Ends of stair rail systems and handrails must be built to prevent dangerous projections, such as rails protruding beyond the end posts of the system. In addition,
- Unprotected sides and edges of stairway landings must have standard 42-inch (1.1 m) guardrail systems.
- Intermediate vertical members, such as balusters used as guardrails, must not he more than 19 inches (48 cm) apart.
- Other intermediate structural members, when used, must be installed so that no openings are more than 19 inches (48 cm) wide.
- Screens or mesh, when used, must extend from the top rail to the stairway step and along the opening between top rail supports.

Handrails

Requirements for handrails are as follows:

- Handrails and top rails of the stair rail systems must be able to withstand, without failure, at least 200 pounds (890 n) of weight applied within 2 inches (5 cm) of the top edge in any downward or outward direction, at any point along the top edge.
- Handrails must not be more than 37 inches (94 cm) high nor less than 30 inches (76 cm) from the upper surface of the handrail to the surface of the tread.
- Handrails must provide an adequate handhold for employees to grasp to prevent falls.
- Temporary handrails must have a minimum clearance of 3 inches (8 cm) between the handrail and walls, stair rail systems and other objects.
- Stairways with four or more risers or that rise more than 30 inches (76 cm) in height—whichever is less—must have at least one handrail.
- Winding or spiral stairways must have a handrail to prevent use of areas where the tread width is less than 6 inches (15 cm).

Midrails

Midrails, screens, mesh, intermediate vertical members, or equivalent intermediate structural members must be provided between the top rail and stairway steps to the stair rail system. When midrails are used, they must be located midway between the top of the stair rail system and the stairway steps.

Ladders

The following rules apply to all ladders:

- Maintain ladders free of oil, grease, and other slipping hazards.
- Do not load ladders beyond their maximum intended load nor beyond their manufacturer’s rated capacity.
- Use ladders only for their designed purpose.

- Use ladders only on stable and level surfaces unless secured to prevent accidental movement.
- Do not use ladders on slippery surfaces unless secured or provided with slip- resistant feet to prevent accidental movement. Do not use slip resistant feet as a substitute for exercising care when placing, lashing, or holding a ladder upon slippery surfaces.
- Secure ladders placed in areas such as passageways, doorways, or driveways, or where they can be displaced by workplace activities or traffic to prevent accidental movement. Alternatively, use a barricade to keep traffic or activity away from the ladder.
- Keep areas clear around the top and bottom of ladders.
- Do not move, shift, or extend ladders while in use.
- Use ladders equipped with nonconductive side rails if the worker or the ladder could contact exposed energized electrical equipment.
- Face the ladder when moving up or down the ladder.
- Use at least one hand to grasp the ladder when climbing.
- Do not carry objects or loads that could cause loss of balance and falling.

Routine Ladder Inspection

All ladders must be regularly inspected and repaired, at least quarterly, but inspection may be more often depending on the amount of use and type of work conditions. If ladders are used two or more days a week, then a monthly inspection and repair cycle is recommended. If ladders are used daily under harsh work conditions, then a weekly inspection and repair cycle is recommended.

Ladders Built on the Job Site (Jab-Made Ladders)

In addition, the following general requirements apply to all ladders, including ladders built at the jobsite:

- Double-cleated ladders or two or more ladders must be provided when ladders are the only way to enter or exit a work area where 25 or more employees work or when a ladder serves simultaneous two-way traffic.
- Ladder rungs, cleats and steps must be parallel, level and uniformly spaced when the ladder is in position for use.
- Rungs, cleats, and steps of portable and fixed ladders (except as provided below) must not be spaced less than 10 inches (25 cm) apart, nor more than 14 inches (36 cm) apart, along the ladder's side rails.
- Rungs, cleats, and steps of step stools must not be less than 8 inches (20 cm) apart, nor more than 12 inches (31 cm) apart, between center lines of the rungs, cleats, and steps.
- Rungs, cleats, and steps at the base section of extension trestle ladders must not be less than 8 inches (20 cm) nor more than 18 inches (46 cm) apart, between center lines of the rungs, cleats, and steps. The rung spacing on the extension section must not be less than 6 inches (15 cm) nor more than 12 inches (31 cm).
- Ladders must not be tied or fastened together to create longer sections unless they are specifically designed for such use.
- When splicing side rails, the resulting side rail must be equivalent in strength to a one-piece side rail made of the same material.

- Two or more separate ladders used to reach an elevated work area must be offset with a platform or landing between the ladders, except when portable ladders are used to gain access to fixed ladders.
- Ladder components must be surfaced to prevent snagging of clothing and injury from punctures or lacerations.
- Wood ladders must not be coated with any opaque covering except for identification or warning labels, which may be only on one face of a side rail.

Note: A competent person must inspect ladders for visible defects periodically and after any incident that could affect their safe use.

Specific Types of Ladders

- Do not use single-rail ladders.
- Use non-self-supporting ladders at an angle where the horizontal distance from the top support to the foot of the ladder is approximately one-quarter of the working length of the ladder.
- Use wooden ladders built at the jobsite with spliced side rails at an angle where the horizontal distance is one-eighth of the working length of the ladder. In addition, the top of a non-self-supporting ladder must be placed with two rails supported equally unless it is equipped with a single support attachment.

Stepladders

- Do not use the top or top step of a stepladder as a step.
- Do not use cross bracing on the rear section of stepladders for climbing unless the ladders are designed and provided with steps for climbing on both front and rear sections.
- Metal spreader or locking devices must be provided on stepladders to hold the front and back sections in an open position when ladders are being used.

Portable Ladders

- The minimum clear distance between side rails for all portable ladders must be 11.5 inches (29 cm).
- In addition, the rungs and steps of portable metal ladders must be corrugated, knurled, dimpled, coated with skid-resistant material, or treated to minimize slipping.
- Non-self-supporting and self-supporting portable ladders must support at least four times the maximum intended load; extra heavy-duty type 1A metal or plastic ladders must sustain 3.3 times the maximum intended load. To determine whether a self-supporting ladder can sustain a certain load, apply the load to the ladder in a downward vertical direction with the ladder placed at a horizontal angle of 75.5 degrees.
- When portable ladders are used for access to an upper landing surface, the side rails must extend at least 3 feet (.9 m) above the upper landing surface. When such an extension is not possible, the ladder must be secured and a grasping device such as a grab rail must be provided to assist workers in mounting and dismounting the ladder. A ladder extension must not deflect under a load that would cause the ladder to slip off its supports.

Defective Ladders

Ladders needing repairs are subject to the following rules:

- Portable ladders with structural defects—such as broken or missing rungs, cleats, or steps, broken or split rails, corroded components or other faulty or defective components—must immediately be marked defective or tagged with "Do Not Use" or similar language and withdrawn from service until repaired.
- Fixed ladders with structural defects—such as broken or missing rungs, cleats, or steps, broken or split rails or corroded components— must be withdrawn from service until repaired.
- Defective fixed ladders are considered withdrawn from use when they are immediately tagged with "Do Not Use" or similar language or marked in a manner that identifies them as defective or blocked—such as with a plywood attachment that spans several rungs.
- Ladder repairs must restore the ladder to a condition meeting its original design criteria before the ladder is returned to use.

Fixed Ladders (See OSHA Regulations)

Fixed ladders are not covered in this fall protection plan for construction. Please refer to the applicable OSHA regulations for fixed ladders, as necessary.

Scaffolds

The following is a summary of OSHA fall protection requirements for scaffolds and the following pertain primarily to fall protection measures as part of a fall prevention program. OSHA's scaffolding standard has several key provisions:

- Fall protection or fall arrest systems—Each employee more than 10 feet above a lower level shall be protected from falls by guardrails or a fall arrest system, except those on single-point and two-point adjustable suspension scaffolds. Both a personal fall arrest system and a guardrail shall protect each employee on a single-point and two-point adjustable suspended scaffold. 1926.451(g)(1)
- Guardrail height—The height of the toprail for scaffolds manufactured and placed in service after January 1, 2000, must be between 38 inches (0.9 meters) and 45 inches (1.2 meters). The height of the toprail for scaffolds manufactured and placed in service before January 1, 2000, can be between 36 inches (0.9 meters) and 45 inches (1.2 meters). 1926.451(g)(4)(ii)
- Crossbracing—When the Crosspoint of Crossbracing is used as a toprail, it must be between 38 inches (0.97 m) and 48 inches (1.3 meters) above the work platform. 1926.451(g)(4)(xv)
- Midrails— Midrails must be installed approximately halfway between the toprail and the platform surface. When a Crosspoint of Crossbracing is used as a midrail, it must be between 20 inches (0.5 meters) and 30 inches (0.8 m) above the work platform. 1926.451(g)(4)
- Footings—Support scaffold footings shall be level and capable of supporting the loaded scaffold. The legs, poles, frames, and uprights shall bear on base plates and mud sills. 1926.451(c)(2) Platforms—Supported scaffold platforms shall be fully planked or decked. 1926.451(b) • Guying ties, and braces—Supported scaffolds with a height-to- base of more than 4:1 shall be restrained from tipping by guying, tying, bracing, or the equivalent. 1926.451(c)(1)

- Capacity—Scaffolds and scaffold components must support at least 4 times the maximum intended load. Suspension scaffold rigging must at least 6 times the intended load. 1926.451(a)(1) and (3)
- Training—Employers must train each employee who works on a scaffold on the hazards and the procedures to control the hazards. 1926.454
- Inspections—Before each work shift and after any occurrence that could affect the structural integrity, a competent person must inspect the scaffold and scaffold components for visible defects. 1926.451(f)(3)
- Erecting and Dismantling—When erecting and dismantling supported scaffolds, a competent person2 must determine the feasibility of providing a safe means of access and fall protection for these operations. 1926.451(e)(9) & (g)(2)

Fall Protection Requirements for Scaffolds

The following guidelines do not cover scaffold construction. Instead, they cover general fall protection requirements as outlined under OSHA regulations.

- Employers must provide fall protection for each employee on a scaffold more than 10 feet (3.1 meters) above a lower level. 1926.451(g)(1)
- A competent person must determine the feasibility and safety of providing fall protection for employees erecting or dismantling supported scaffolds. 1926.451(g)(2)
- Fall protection includes guardrail systems and personal fall arrest systems. Guardrail systems are explained below. Personal fall arrest systems include harnesses, components of the harness/belt such as Dee-rings, and snap hooks, lifelines, and anchorage point. 1926.451(g)(3)
- Vertical or horizontal lifelines may be used. 1926.451(g)(3)(ii) through (iv)
- Lifelines must be independent of support lines and suspension ropes and not attached to the same anchorage point as the support or suspension ropes. 1926.451(g)(3)(iii) and (iv)
- When working from an aerial lift, attach the fall arrest system to the boom or basket. 1926.453(b)(2)(v)

Types of Fall Protection

The below chart illustrates the type of fall protection required for specific scaffolds.

Type of Scaffold	Fall Protection Required
Aerial lifts	Personal fall arrest system
Boatswains' chair	Personal fall arrest system
Catenary scaffold	Personal fall arrest system
Crawling board (chicken ladder)	Personal fall arrest system, or a guardrail system, or by a 3/4-inch (1.9 cm) diameter grabline or equivalent handhold securely fastened beside each crawling board
Float scaffold	Personal fall arrest system
Ladder jack scaffold	Personal fall arrest system
Needle beam scaffold	Personal fall arrest system
Self-contained adjustable scaffold when supported by ropes	Both a personal fall arrest system and a guardrail system
Single-point and two-point suspension scaffolds	Both a personal fall arrest system and a guardrail system
Supported scaffold	Personal fall arrest system or guardrail system

All other scaffolds not specified above	Personal fall arrest system or guardrail systems that meet the required criteria

Self-contained Adjustable Scaffolds Require Dual Protection

Each employee on a self-contained adjustable scaffold shall be protected by a guardrail system (with minimum 200-pound toprail capacity) when the platform is supported by the frame structure, and by both a personal fall arrest system and a guardrail system (with minimum 200-pound toprail capacity) when the platform is supported by ropes.

1926.451(g)(1)(iv)

Falling Object Protection

To protect employees from falling hand tools, debris, and other small objects, install toe boards, screens, guardrail systems, debris nets, catch platforms, canopy structures, or barricades. In addition, employees must wear hard hats. 1926.451(h)(1) & (2) and (3)

Enforcement

Constant awareness of and respect for fall hazards, and compliance with all safety rules are considered conditions of employment. The crew supervisor or foreman, as well as individuals responsible for safety and personnel, reserve the right to issue disciplinary warnings to employees, up to and including termination, for failure to follow the guidelines of this program.

Incident Investigations

All incidents that result in injury to workers, regardless of their nature, shall be investigated and reported. It is an integral part of any safety program that documentation take place as soon as possible so that the cause and means of prevention can be identified to prevent a reoccurrence

In the event that an employee falls or there is some other related, serious incident occurring, this plan shall be reviewed to determine if additional practices, procedures, or training need to be implemented to prevent similar types of falls or incidents from occurring.

Changes to Plan

The Designated Competent Person will approve any changes to the plan. A competent person shall review this plan as the job progresses to determine if additional practices, procedures, or training needs to be implemented by the competent person to improve or provide additional fall protection. Workers shall be notified and trained, if necessary, in the new procedures. A copy of this plan and all approved changes shall be maintained at the jobsite.

Fatigue Management

Purpose

To explain the how the risk management process is used to manage fatigue in the workplace.

Identifying Fatigue Hazards

The keyways to identify fatigue are understanding work and non-work factors that contribute to fatigue, recognizing physical and behavioral signs, and applying hazard identification processes.

Causes of fatigue		Signs of fatigue
Inadequate amount or lack of sleep quality sleep		Inability to concentrate and reduced alertness
Extended mental or physical effort		Slower response and reaction times
Environmental stresses e.g.: light, heat, noise		Impaired judgment and decision-making ability
Mediations such as those causing drowsiness		Extreme tiredness or drowsiness
Sleep disorders such as sleep apnea		Sore, red or watering eyes
Poor dietary habits		Wandering or disconnected thoughts
Shift work, especially night shift		Excessive yawning
Family, social, study and sporting commitments		Feeling irritable or restless
Personal problems e.g.: financial worries		Micro sleeps

Methods of identifying fatigue
Observing the signs of fatigue such as levels of alertness, reaction times, excessive yawning, etc.
Inspecting workplace rosters to identify shift arrangements that could potentially cause fatigue (see below)
Consulting with employees to find out if they feel regularly fatigued and what might be causing this
Analyzing incidents especially those occurring at the end of a shift or between 0200-0600 hours

Assessing Fatigue-Related Risks

Assessing the risks of fatigue can be difficult because people respond differently to situations that may contribute to fatigue. It is well established, however, that there are some factors that will contribute to fatigue in most individuals either because normal body rhythms that regulate sleep are disrupted or because there is inadequate time for rest and recovery.

There are potentially many work factors contributing to fatigue, but the main ones are:

• Total number of hours worked.

• Length of shifts.

• Length of the break between shifts.

• Number of breaks within a shift.

• Number of days free from work.

• Number of night shifts worked especially consecutive night shifts; and

• Number of times on call.

These factors have been used to develop a guide to assess the risks of fatigue in situations where work patterns, such as shift work, extended hours and on-call arrangements are involved. The guide is based on a 7-day work cycle but can be extended for use with longer work cycles. It can be used to assess the risk of fatigue in people or in work situations, such as rosters.

Risk Assessment Guide for Fatigue (Based on a 7-day work cycle)				
Less than 50 hours worked*		50-70 hours worked*		More than 70 hours*
Shift length of 10 hours or less		Shift length of up to 12 hours		Shift length exceeds 12hrs
Min 12hr break between shifts		8–12-hour break between shifts		Less than an 8hr break
No night shifts		Up to 3-night shifts		4 or more-night shifts
Short breaks taken during shift		Single break taken during shift		No breaks taken during shift
2 or more days free from work		1 day free from work		No days free from work
On-call no more than 3/7 days		On-call up to 5/7 days		on-call more than 5/7 days
Total number of ticks X1		Total number of ticks X2		Total number of ticks X3
Total points				**Low risk:** up to and including 11 points **Medium risk**: 12-17 points **High risk:** 18 or more points

*Includes overtime, extended hours, time spent when called back to work and hours worked in secondary employment

In assessing the risk of fatigue, the key thing to remember is that fatigue is cumulative. Isolated occurrences of a high-risk factor will not usually create a high risk of fatigue. It is expected that for a situation to be assessed as high risk, several high-risk factors will be present or that the work pattern be on-going.

Responsibilities

To ensure that the effects of fatigue do not impact on the safety, health, or well-being of Global Inspection Services employees, both managers and employees have responsibilities.

Managers and supervisors are responsible for:

- Applying a risk management approach in consultation with staff; and
- Ensuring systems of work that minimize the risk of fatigue are implemented (e.g., appropriate rosters, sensible overtime practices, adequate recuperation between shifts and appropriate shift length); and

- Providing opportunities for employees to obtain adequate rest from work: and
- Monitoring workloads and work patterns to ensure employees are not placed at risk from fatigue; and
- Consulting with employees when introducing shift work or new roster systems; and
- Providing information, instruction, and training about risks to health, safety or welfare of employees involved with shift work, extended hours, and on-call arrangements; and
- Ergonomic equipment will be made available and used to improve workstation conditions, i.e., lighting, anti-fatigue mats, lift assist devices and other ergonomic devices as deemed appropriate; and

Employees are responsible for and may receive initial and annual training on fatigue and controlling fatigue.

- Participating in risk management processes; and

- Using time off from work to recuperate in order to be fit for duty when the next shift commences; and
- Participating in education and training in order to gain an understanding of fatigue; and
- Avoiding behaviors and practices that contribute to fatigue and which could place self and others at risk (e.g., unauthorized secondary employment, not using time off work to recuperate); and
- Recognizing signs of fatigue that could place themselves or others at risk of harm, and reporting this to their manager or supervisor; and
- Not chronically using over-the-counter prescription drugs, and any product which may affect an employee's ability to perform their work safely; and
- Taking rest breaks to control fatigue and increase mental fitness.

Fire Protection / Fire Extinguisher

Almost all fires are preventable, and control measures can limit the losses if a fire does occur. A prevention program will involve employee training on material storage, inspections, and emergency action procedures. Employees of Global Inspection Services and their subcontractors will perform fire-fighting techniques on incipient stage fires ONLY. No Global Inspection Services employee is authorized to conduct firefighting beyond incipient stages.

Fire prevention and control principles include the following:

1. Dispose of all waste in proper containers and keep work area clean and orderly. Do not allow accumulation.
2. The use of flammable solvents as cleaning agents is prohibited.
3. The engine of all equipment being fueled shall be shut off before fueling operations begin.
4. Open flames shall not be used to locate leaks.
5. Smoking within 50 feet of operations, which constitutes a fire hazard, is strictly prohibited.
6. "NO SMOKING" signs will be posted and clearly visible around any area that constitutes a fire hazard.
7. All employees are responsible to know the location and operations of all fire extinguishers, hoses, and alarms.

8. All fire extinguishers will be properly mounted and marked as follows:
    - Mounted 3 ½ to 5 feet from top of extinguisher to floor
    - Not blocked by any equipment: free access at all times.
    - Marked properly and made clearly visible

1. All hoses and equipment must be properly grounded and bonded while being used around flammable materials.
2. Flammable materials must be stored in well-ventilated areas or in approved storage cabinets.
3. Perform welding/cutting operations and all other hot work in a safe location which is away from any fire hazard.
4. Keep all exits unobstructed.
5. Dispose of all cigarette butts, matches, and other hot items in proper containers.
6. Inspect all electrical cords before each use.
7. Do not overload electrical circuits or use frayed or defective electrical cords.
8. Drum dispensers should be of the self-closing type.
9. Routine inspections shall be performed for hazards and equipment maintenance.
10. Operations that generate dust or vapors must be performed in well-ventilated areas.
11. Heaters should be operated in areas free of combustibles and trash.
12. Have all fire extinguishers inspected monthly and records kept of each inspection. Furthermore, all fire extinguishers will be inspected and serviced annually by a third-party fire extinguisher service company. Both the annual and monthly inspections will be documented on tags attached to the fire extinguisher.
13. Monthly vision checks should include an inspection of the hose, nozzles, seals, gauge pressure, corrosion, and dents. An inspection record will be maintained at each fire extinguisher as required by law. If the condition of a fire extinguisher fails to meet the manufacturer's definition of a satisfactory extinguisher, it shall be removed from the work area and tagged "Do Not Use".
14. Promptly discover the fire and extinguish it before it grows out of control. Most fires start small and can initially be extinguished by a hand-held fire extinguisher. Never place yourself in a situation where you could be harmed while fighting a fire.
15. Stand at least 6 feet away and up wind of the fire while you attempt to extinguish it.
16. Aim the spray nozzle at the base of the fire where the fuel is located.
17. Remember to use the **PASS** method.
    - **P**ULL

- **A**IM
- **S**QUEEZE
- **S**WEEP

18. Remember the acronym **RACE**:
    - **R**ESCUE anyone that you can safely
    - **A**LARM everyone that there is a fire
    - **C**ONTAIN the fire by shutting all doors and windows, and by removing flammable items.
    - **E**XTINGUISH/**E**VACUATE, if possible, put out the fire in its incipient stage only, and then evacuate to the designated emergency staging area for a head count.
19. In areas where extinguishers are visibly obstructed, their locations shall be marked with signs or painted symbols that are high enough and legible enough to be recognized and seen.
20. Whenever an extinguisher is used for any amount of time, it shall be removed from service, taken out of view until recharged, and reported to a supervisor immediately. Once the pressure seal on a fire extinguisher is broken, the pressure will bleed down; therefore, any used fire extinguisher must be refilled and re-pressurized. No used extinguishers can be left lying about for any reason.
21. Whenever there is hot work being done, a sufficient number of portable fire extinguishers will be present to help in the event they are needed.
22. All persons will be trained on the proper use, function, and deployment of fire extinguishers. This shall be done during monthly training, and at least annually thereafter. Training will consist of the following:
    - Types and sizes of fire extinguishers
    - Types of fires.
    - Fires specific to Global Inspection Services tasks (over-heated equipment, oil, and gas fires)
    - Incipient stage firefighting and the hazards related to it
    - Fire tetrahedron
    - First aid for burns

First Aid

Duty to Have First Responders

OSHA's first aid standard states, "in the absence of an infirmary, clinic, or hospital in near proximity to the workplace which is used for the treatment of all injured employees, a person or persons should be trained to render first aid." In a letter of interpretation, OSHA defines "in close proximity" as follows:

- In areas where accidents resulting in suffocation, severe bleeding, or other life-threatening injury or illness can reasonably be expected, a 3–4-minute response time is required.
- In areas where a life-threatening injury is an unlikely outcome, a 15-minute response time is acceptable.

Global Inspection Services employees trained in First Aid/CPR, if necessary, will perform first responder duties on an injured victim within the scope of their training only. Those employees not trained in First Aid/CPR should ensure emergency medical care is notified only.

In many manufacturing and construction environments, the possibility exists for a life-threatening injury to occur. If an outside emergency response team would not be able to respond within 3-4 minutes, the company should require several employees per shift to be trained in first aid and CPR.

Definition of First Aid:

Immediate care given to a victim of an accident or sudden illness until a higher level of medical skill and care can be provided.

The following elements should be included in a first aid program:

- Self-treatment should not be permitted. Treatment and medical supplies should only be administered by designated first aid personnel. By requiring an employee to get first aid supplies from a designated employee, the first aid injury can be documented. In companies where "near miss" accidents are investigated, documenting a first aid injury may prevent a more serious injury from occurring in the future.
- The following information should be posted at several locations in the facility:
  - Names and departments of the first aid workers.
  - Name and telephone number of company physician.
  - Name and telephone number of nearest hospital and ambulance service. • First aid personnel should follow the written guidelines of the company physician when treating injuries.
- Within 24 hours, an injured employee should check with the first aid attendant to ensure the injury is responding favorably to treatment. If necessary, the worker should be referred to the company physician.
- The first aid area should be kept clean, and first aid supplies should be regularly replenished and updated.

First Aid

- Always use ***Universal Precautions***: assume every other person's blood or body fluids are contaminated and protect yourself accordingly.
- Always wash your hands before and after giving first aid. If there are no hand washing facilities available, hand sanitizer found in the first aid kit must be used.
- Use latex or similar type gloves when treating someone
- Wear goggles, if possible, to protect against splash hazard
- Be prepared to break ribs during CPR
- And breathing barriers are an excellent way to prevent contamination during CPR

Heart Attack

- Immediate notification of the EMS system is essential. Call 911.
- Treat for shock
- Try to keep the victim calm and make them as comfortable as possible.

Severe Bleeding

- Apply direct pressure to the wound with a dry, clean, sterile pad or gauze.
- If possible, have the victim apply the bandage. This helps control shock by giving the victim something to focus on, and it helps to keep the rescuer away from the victim's blood
- Keep the wound elevated above the heart if possible
- If bleeding will not stop, then apply pressure at the applicable pressure points. For injuries of the arm, find the brachial artery located along the upper arm bone on the inside if the bicep. For injuries of the leg, find the femoral artery located next to the pubic region where the leg and pelvis come together.

Have victim seek medical attention after first aid attempts were successful. If you cannot get blood to stop, then you may need to call 911.

Eyewash Bottles

The main purpose of eyewash bottles is to supply immediate flushing of the eyes until a self-contained or plumbed emergency eyewash can be reached. Eyewash bottles should not be used as the only method for employees to flush their eyes for the following reasons:

- Holding the eyelids open while handling the bottle can be very difficult.
- Bottles cannot flush both eyes simultaneously.
- The water supply lasts only for a short period of time, normally not long enough to completely flush the eyes.

If your facility uses eyewash bottles as the only method for an employee to flush their eyes, a plumbed or self-contained unit should be installed.

Heat Illness Prevention

Why is it important to prevent heat illness?

Heat illness can be a matter of life and death. Workers die from heat stroke every summer and every death is preventable.

When heat stroke doesn't kill immediately, it can shut down major body organs causing acute heart, liver, kidney and muscle damage, nervous system problems and blood disorders.

Having a serious injury or death occur at work affects everyone at a worksite.

Workers suffering from heat exhaustion are at greater risk for accidents since they are less alert and can be confused.

Before beginning work where heat illness is possible be sure to know your surroundings. Are there adequate areas of shade in a well-ventilated area; if not is there a building close by the work area that can provide a cooling atmosphere. Is there access to potable water on site, if not it shall be provided in sufficient quantities throughout the work shift.

How heat can affect you and what symptoms you should watch out for.

Heat exhaustion can often affect you before you even realize it, so it's important to be very aware of the signs.

Where does the heat come from that causes our bodies to overheat?

- Hot weather
- Humid weather
- Sun – you absorb more heat if you are in the sun
- Heat our bodies generate when we are physically active and doing hard work

Some of the signs you may notice if your body is getting too hot.

- Headache, dizziness, or fainting
- Weakness and wet skin
- Irritability or confusion
- Thirst, nausea, or vomiting

These are the early signs that you need to cool off, rest, and drink water to let your body recover. If you don't, you could develop some of the more serious effects of heat.

Working outdoors is hard work and you will feel sweaty and tired.

Workers need to drink water, take shade breaks, and rest to prevent heat problems.

If you feel better, you can go back to work, but you should still drink water frequently and take another break when you need to. If you don't feel better, talk to your supervisor right away.

Health effects of Heat

If you are working in the heat, especially if you're not drinking enough water or taking enough breaks, you may get **heat exhaustion**.

- You may get a headache, experience dizziness, or faint.
- You could get weak or have wet skin.
- You may become irritable or confused.
- You may be thirsty, nauseous, or vomit. People react differently, so you may have just a few of these symptoms, or most of them.
- If you start to feel confused, or if you vomit or become faint, you may be having a more serious response.

Workers may also develop what is called **heat stroke**.

- At this point, you may be confused, unable to think clearly, pass out, collapse, or have seizures (fits).
- You may stop sweating. Sweating is the main way our bodies cool off - so not sweating is a very serious emergency!

There have been cases where workers have seemed fine at lunch and a couple of hours later were found having seizures or unconscious. It can happen quickly. The best way to protect ourselves is to prevent heat exhaustion — by drinking plenty of water, taking breaks, and resting to cool off.

Not being used to working in heat is a big problem. Most of the people who died from heat stroke in the past few years were in their first few days on the job or were working during a heat wave. If you haven't worked in hot weather for a week or more, your body needs time to adjust. You need to take more breaks and not do too much strenuous work during your first weeks on the job.

Some health conditions can put you at greater risk of heat illness. These include diabetes, kidney and heart problems, pregnancy, and being overweight.

Supervisor Training

All supervisors will be trained in the prevention of heat related illness prior to supervising employees working in heat. All supervisors will be trained in the procedures to follow when an employee exhibits symptom consistent with possible heat illness including emergency response procedures.

Supervisors will consider ambient temperatures in assigning work tasks and scheduling breaks.

Supervisors will ensure that employees have access to drinkable potable water in quantities adequate for the entire work shift.

Supervisor Heat Illness Training

Preventing Heat-Related Illness and Injury

KNOW THE HAZARDS: Heat injuries happen when the body's natural methods for coping with heat are overwhelmed.

Heat illness and injury can affect all ages and levels of fitness.

Active physical exertion and/or hot weather conditions can trigger these dangerous physical responses.

You can be exposed to heat illness and injury indoors and outdoors, at home or at work.

Heat illness can affect people working in hot environments or wearing layers of protective clothing, even during cool weather.

Heat illnesses can be relatively mild such as heat rash or heat cramps, or serious such as heat exhaustion and heat stroke.

The onset and sequence of the symptoms can be subtle; you may not realize you're becoming ill.

These serious conditions can easily be avoided by simple avoidance measures and knowing how to spot the earliest symptoms.

Know the signs and how to react

Heat Cramps: Learn to recognize the symptoms in yourself and others so you can take appropriate action. Your quick response can keep the heat illness from becoming more serious.

Heat Cramps – Symptoms

- Painful cramps in the legs and/or stomach
- Caused by loss of the body's salt and moisture due to profuse sweating
- Heat cramps can also be symptoms of heat exhaustion.

Heat Cramps – How to React

- Have the person rest quietly in a cool, shaded area
- It is vital to rehydrate the person; have them drink cool (not ice-cold) water or a sports drink in small amounts at a time.
- Do not use drinks containing caffeine, alcohol, or large amounts of sugar
- Massage the cramping leg muscles and gently stretch them

Heat Exhaustion: A person experiencing heat exhaustion may become and may not know he or she is becoming seriously ill. It is vital to provide first aid immediately to prevent heat stroke.

Heat Exhaustion – Symptoms

- Profuse Sweating
- Pale of flushed complexion
- Extreme weakness or fatigue
- Slightly elevated body temperature
- Dizziness, confusion

- Clammy moist skin
- Nausea
- Rapid, shallow breathing

Heat Exhaustion – How to React

- Provide first aid immediately
- Have the person rest and rehydrate (as with heat cramps)
- Cool the person by wetting their skin and clothing with water and fanning them
- If the person refuses water, vomits, or loses consciousness, call 9-1-1 immediately
- **Left untreated, heat exhaustion can quickly progress to heat stroke, a life-threatening condition.**

Heat Stroke: The victim's body temperature can quickly rise to 107 degrees as the body's vital systems are disabled.

Heat Stroke – Symptoms

- Vomiting
- High body temperature
- Rapid, weak pulse
- Skin that is dry, hot, and red
- Rapid, shallow breathing
- Confusion, hallucinations

Heat Stroke – How to React

- Heat stroke is an emergency! Emergency services should be called at once
- Have the person rest lying down in a cool area until help arrives
- Move him or her to an air-conditioned environment is possible
- Have them drink cool water in small amounts
- Follow the process for cooling the person as with heat exhaustion. If possible, wrap the person in cool, wet sheets and fan him or her to accelerate cooling.
- **HEAT STROKE CAN BE FATAL – CALL 9-1-1 IMMEDIATELY!!!!**

Physical and Personal Factors

Physical factors that contribute to heat related illness should 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 being done
- 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.

High Heat Procedures

GIS shall implement high-heat procedures when the temperature equals or exceeds 95 degrees Fahrenheit. These procedures shall include the following to the extent practicable:

- (1) Ensuring that effective communication by voice, observation, or electronic means is maintained so that employees at the work site can contact a supervisor when necessary. An electronic device, such as a cell phone or text messaging device, may be used for this purpose only if reception in the area is reliable.
- (2) Observing employees for alertness and signs or symptoms of heat illness. The employer shall ensure effective employee observation/monitoring by implementing one or more of the following:
    - (A) Supervisor or designee observation of 20 or fewer employees, or
    - (B) Mandatory buddy system, or
    - (C) Regular communication with sole employee such as by radio or cellular phone, or
    - (D) Other effective means of observation.
- (3) Designating one or more employees on each worksite as authorized to call for emergency medical services and allowing other employees to call for emergency services when no designated employee is available.
- (4) Reminding employees throughout the work shift to drink plenty of water.
- (5) Pre-shift meetings before the commencement of work to review the high heat procedures, encourage employees to drink plenty of water, and remind employees of their right to take a cool-down rest when necessary.

(6) For employees employed in agriculture, the following shall also apply:
When temperatures reach 95 degrees or above, the employer shall ensure that the employee takes

a minimum ten-minute net preventative cool-down rest period every two hours. The preventative cool-down rest period required by this paragraph may be provided concurrently with any other meal or rest period required by Industrial Welfare Commission Order No. 14 if the timing of the preventative cool-down rest period coincides with a required meal or rest period thus resulting in no additional preventative cool-down rest period required in an eight-hour workday. If the workday will extend beyond eight hours, then an additional preventative cool-down rest period will be required at the conclusion of the eighth hour of work; and if the workday extends beyond ten hours, then another preventative cool-down rest period will be required at the conclusion of the tenth hour and so on. For purposes of this section, preventative cool-down rest period has the same meaning as "recovery period" in Labor Code Section 226.7(a).

Training

- All employees will be trained to recognize the signs and symptoms of heat illness and be allowed to call for emergency medical services when necessary.
- Specifically assign one or a small number of employees per crew to call for emergency medical services. A designated employee may be either supervisory or non-supervisory.
- Remind supervisors and employees to review high heat procedures in the pre-shift meetings
- Determine whether the training is required based on the predicted temperature in the area.
- Cover topics in pre-shift meetings including:
    - staying hydrated and taking cool-down rests
    - identifying the employees who should call for emergency medical services when needed, and how employees will be observed.
    - For employees working remotely, the employer may conduct pre-shift meetings by cell phone or radio.

Avoiding Heat Stress

Employees shall have access to potable drinking water at remote sites. It shall be in a quantity that all employees stay adequately hydrated throughout the employees work shift.

Supervisors will provide enough water so that each employee can drink at least one quart per hour, during the work shift, and will encourage employees to do so.

Supervisors will ensure there is access to a shaded area to prevent or recover from heat illness and where employees can take rest breaks.

Supervisors will monitor themselves and others by watching for the symptoms of heat illnesses and take proactive steps to protect themselves and others anytime they are active in very hot weather or involved in strenuous tasks that causes heat to build up.

Cold Weather Safety/Cold Stress

Anyone working in a cold environment may be at risk of cold stress. Cold stress can be encountered in our work environment. The following frequently asked questions will help workers understand what cold stress is, how it may affect their health and safety, and how it can be prevented.

How cold is too cold?

What constitutes extreme cold, and its effects can vary across different areas of the country. In regions that are not used to winter weather, near freezing temperatures are considered "extreme cold." A cold environment forces the body to work harder to maintain its temperature. Whenever temperatures drop below normal and wind speed increases, heat can leave your body more rapidly.

Wind chill is the temperature your body feels when air temperature and wind speed are combined. For example, when the air temperature is 40°F, and the wind speed is 35 mph, the effect on the exposed skin is as if the air temperature was 28°F.

Cold stress occurs by driving down the skin temperature and eventually the internal body temperature (core temperature). This may lead to serious health problems, and may cause tissue damage, and possibly death.

What are the risk factors that contribute to cold stress?

Some of the risk factors that contribute to cold stress are:

- Wetness/dampness, dressing improperly, and exhaustion
- Predisposing health conditions such as hypertension, hypothyroidism, and diabetes
- Poor physical conditioning

How does the body react to cold conditions?

In a cold environment, most of the body's energy is used to keep the internal core temperature warm. Over time, the body will begin to shift blood flow from the extremities (hands, feet, arms, and legs) and outer skin to the core (chest and abdomen). This shift allows the exposed skin and the extremities to cool rapidly and increases the risk of frostbite and hypothermia. Combine this scenario with exposure to a wet environment, and trench foot may also be a problem.

What are the most common cold induced illnesses/injuries?

- Hypothermia
- Frostbite
- Trench Foot

What is hypothermia?

Hypothermia occurs when body heat is lost faster than it can be replaced, and the normal body temperature (98.6°F) drops to less than 95°F. Hypothermia is most likely at very cold temperatures, but it can occur even at cool temperatures (above 40°F), if a person becomes chilled from rain, sweat, or submersion in cold water.

What are the symptoms of hypothermia?

- Mild symptoms:
    - An exposed worker is alert.
    - He or she may begin to shiver and stomp the feet to generate heat.

- Moderate to Severe symptoms:
    - As the body temperature continues to fall, symptoms will worsen, and shivering will stop.
    - The worker may lose coordination and fumble with items in the hand, become confused and disoriented
    - He or she may be unable to walk or stand, pupils become dilated, pulse and breathing become slowed,
    - and loss of consciousness can occur. A person could die if help is not received immediately.

What can be done for a person suffering from hypothermia?

- Call 911 immediately in an emergency; otherwise seek medical assistance as soon as possible.
- Move the person to a warm, dry area.
- Remove wet clothes and replace with dry clothes, cover the body (including the head and neck) with
- layers of blankets; and with a vapor barrier (e.g., tarp, garbage bag). Do not cover the face.
- If medical help is more than 30 minutes away:
    - Give warn sweetened drinks if alert (no alcohol) to help increase the body temperature. Never
    - try to five a drink to un unconscious person.
    - Place warm bottles or hot packs in armpits, sides of chest, and groin. Call 911 for
    - additional rewarming instructions
- If a person is not breathing or has no pulse:
    - Call 911 for emergency medical assistance immediately.
    - Treat the worker as per instructions for hypothermia, but be very careful and do not try to
    - Give an unconscious person fluids.
    - Check him/her for signs of breathing and for a pulse. Check for 60 seconds.
    - If after 60 seconds the affected worker is not breathing and does not have a pulse,
    - Trained workers may start rescue breaths for 3 minutes.
- Recheck for breathing and pulse, check for 60 seconds.
- If the worker is still not breathing and has no pulse, continue rescue breathing.

- Only start chest compressions per the direction of the 911 operator or emergency medical services*
- Reassess patient's physical status periodically.

*Chest compressions are recommended only if the patient will not receive medical care within 3 hours.

What is frostbite?

Frostbite is an injury to the body that is caused by freezing of the skin and underlying tissues. The lower the temperature, the more quickly frostbite will occur. Frostbite typically affects the extremities, particularly the feet and hands. Amputation may be required in severe cases.

What are the symptoms of frostbite?

- Reddened skin develops gray/white patches.
- Numbness in the affected part.
- Feels firm or hard.
- Blisters may occur in the affected part, in severe cases.

What can be done for a person suffering from frostbite?

- Follow the recommendations described above for hypothermia.
- Do not rub the affected area to warm it because this action can cause more damage.
- Do not apply snow/water. Do not break blisters.
- Loosely cover and protect the area from contact.
- Do not try to rewarm the frostbitten area before getting medical help; for example, do not place
- in warm water. If a frostbitten area is rewarmed and gets frozen again, more tissue damage
- will occur. It is safer for the frostbitten area to be rewarmed by medical professionals.
- Give warm sweetened drinks if the person is alert. Avoid drinks with alcohol.

What is immersion/trench foot?

Trench Foot or immersion foot is caused by prolonged exposure to wet and cold temperatures. It can occur at temperatures as high as 60°F if the feet are constantly wet. Non-freezing injury occurs because wet feet lose heat 25-times faster than dry feet. To prevent heat loss, the body constricts the blood vessels to shut down circulation in the feet. The skin tissue begins to die because of a lack of oxygen and nutrients and due to the buildup of toxic products.

What are the symptoms of trench foot?

- Redness of the skin, swelling, numbness, blisters

What can be done for a person suffering from immersion foot?

- Call 911 immediately in an emergency; otherwise seek medical assistance as soon as possible.
- Remove the shoes, or boots, wet socks.
- Dry the foot.

Employees will be trained on how to prevent and recognize cold stress illnesses and injuries and how to apply first aid treatment. Workers should be trained on the appropriate engineering controls, personal protective equipment, and work practices to reduce the risk of cold stress. Employees will receive initial training and annual refresher training thereafter. All consultants will be trained in 1st Aid/CPR.

Employers should use safe work practices. For example, it is easy to become dehydrated in cold weather. Employers, therefore, can provide plenty of warm sweetened liquids to workers. Avoid alcoholic drinks. If possible, employers can schedule heavy work during the warmer part of the day. Employers can assign workers to tasks in pairs (buddy system), so that they can monitor each other for signs of cold stress. Workers can be allowed to interrupt their work if they are extremely uncomfortable. Employers should give workers frequent breaks in warm areas. Acclimatize new workers and those returning after time away from work, by gradually increasing their workload, and allowing more frequent breaks in warm areas, as they build up a tolerance for working in the cold environment. Safety measures, such as these, should be incorporated into the relevant health and safety plan for the workplace.

Dressing properly is extremely important to preventing cold stress. The type of fabric worn also makes a difference. Cotton loses its insulation value when it becomes wet. Wool, silk, and most synthetics, on the other hand, retain their insulation even when wet. The following are recommendations for working in cold environments:

- Wear at least three layers of loose-fitting clothing. Layering provides better insulation. Do not wear
- light fitting clothing.
    - An inner layer of wool, silk or synthetic to keep moisture away from the body.
    - A middle layer of wool or synthetic to provide insulation even when wet.
- An outer wind and rain protection layer that allows some ventilation to prevent overheating.
    - Wear a hat or hood to help keep your whole body warmer. Hats reduce the amount of body heat
        - that escapes from your head.
        - Use a knit mask to cover the face and mouth (if needed).
        - Use insulated gloves to protect the hands (water resistant if necessary).
        - Wear insulated and waterproof boots (or another footwear).

Safety Tips for Workers

- Our consultants should know the symptoms of cold stress.
- Monitor your physical condition and that of your coworkers.
- Dress properly for the cold.
- Stay dry in the cold because moisture or dampness, e.g., from sweating, can increase the rate of
- Heat loss from the body.
- Keep extra clothing (including underwear) handy in case you get wet and need to change.
- Drink warm sweetened fluids (no alcohol).
- Use proper engineering controls, safe work practices, and personal protective equipment (PPE).
- Ensure all outside walkways are properly addressed if snow or ice or wet surfaces exist.
- Employees of the dangers of working around unstable snow and ice build-up.
- Cold weather supplies should be checked monthly for adequate supplies.

Gas Hazard Awareness

Gas Hazard Awareness Training will be conducted before initial assignment and annually thereafter for personnel that work in a Gas Hazard environment.

Training will include:

Gas Characteristics, Health Effects and Personal Protective Equipment

Section 20 of the Global Inspection Services, LLC safety handbook and the H 2S power point presentation address additional training in gas characteristics, health effects and personal protective equipment.

Documentation

All training will be documented. All training documentation will be kept at the corporate office in

Irving, Texas.

Personal Portable Gas Detectors and 4 gas monitors will be issued as required by the client.

Personal portable gas detectors shall be used in high gas hazard areas or as requested by the client. Gas Detector Calibration will be maintained by the user.

All gas monitors shall be calibrated per manufacturer's recommendations and have a current calibration sticker on the monitor.

Gas Systems for Welding

Employee Training

Employees in charge of the oxygen or fuel-gas supply equipment including generators, and oxygen or fuel-gas distribution piping systems will receive training on gas systems for welding prior to being placed in charge of welding operations.

Ventilation and Respirators

Any welding, cutting or burning of lead base metals, zinc, cadmium, mercury, beryllium or exotic metals or paints not listed here shall have proper ventilation or respiratory protection in place prior to the start of welding operations.

Fire Extinguishers/Fire Suppression Systems

A fire prevention and suppression procedure shall be established whenever any welding and cutting operations are taking place. All employees will be trained on the use of fire extinguishers and will have fire suppression equipment available and near welding operations.

Safe Handling of Compressed Gas

Welding fuel-gas cylinders shall be placed with valve end up whenever they are in use. Liquefied gases shall be stored and shipped with the valve end up.

"Cracking"

Before connecting a regulator to a cylinder valve, the valve shall 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 valve shall be opened while standing to one side of the outlet: never in front of it. A fuel-gas cylinder valve shall never be opened, cracked near other welding work or near sparks, flame, or other possible sources of ignition.

Compressed Gas Cylinders and Confined Spaces

Cylinders containing oxygen or acetylene, or other fuel or gas shall not be taken into confined spaces.

Tagging of Defective Cylinders

Cylinders having leaking fuse plugs or other leaking safety devices shall be plainly tagged, and the supplier shall be promptly notified of the condition and their instructions followed. A warning shall be placed near the cylinders prohibiting any approach to them with a lighted cigarette or other source of ignition. Oxygen tanks will not be stored within 50 feet of flammable gas tanks. All gas cylinders will have safety caps installed when not in use.

General Safety – Health Provisions

Job Sites, Materials and Equipment

Job sites, materials and equipment shall be inspected by a competent person. A competent person is defined as someone that has been trained and qualified as a person of knowledge in the specific task at hand. Someone who can recognize a hazard and has the authority to mitigate the hazard

Qualified person

Only qualified employees are allowed to operate equipment (see above notice in red).

Unsafe Conditions

Each employee will be instructed in the recognition and avoidance of unsafe conditions and the regulations applicable to his work environment or eliminate any hazards or other exposure to illness or injury.

All employees are given the responsibility and authority to stop work when employees believe that a situation exists that places them, their coworker(s), contracted personnel, or the public at risk or in danger; could adversely affect the safe operation or cause damage to the facility; or result in a release of radiological or chemical effluents to the environment above regulatory requirements or approvals; and provides a method to resolve the issue. Maintaining a diligent questioning attitude is vital to safe execution of work-scope and is a cornerstone to effective Conduct of Operations and Integrated Safety Management.

This procedure extends the authority to stop work to situations where an employee believes there is a need to clarify work instructions; or to propose additional controls.

More detailed information on stop work situations can be found in the Global Inspection Services, LLC safety handbook under the Stop Work Authority Section.

H2S: Hydrogen Sulfide

I. PHYSICAL PROPERTIES OF HYDROGEN SULFIDE (H2S)

A. Colorless gas at atmospheric temperature and pressure.

B. Heavier than air (SG=1.189 at 77° F; Air=1.0) Hydrogen sulfide is approximately 20% heavier than air)

C. Foul odor in small concentrations but causes paralysis of the olfactory nerve in higher concentrations in less than 60 seconds. ODOR THRESHOLD IS 0.13 PPM.

D. Extremely toxic ***(POISONOUS)***

E. ***H2S*** forms an explosive mixture with air between 4.3% and 46% by volume concentration. (Methane and air: 5-15%)

F. Critical temperature = 212°F

G. Critical pressure = 1306 psi

H. Ignition temperature =500° (260°C) (Methane =1000°F)

II. CHEMICAL PROPERTIES OF HYDROGEN SULFIDE (H2S)

A. Burns with a blue flame and produces sulfur dioxide (S02), a gas, which has a very irritating effect on the eyes and lungs. The S02 can cause serious injury, *even* possible death *above* 100 ppm.

B. ***H2S*** attacks most metals, especially in the presence of water, forming sulfides, which are usually insoluble precipitates. It is also corrosive to plastic, tissue, and nerves.

III. PHYSICAL PROPERTIES AND CHARACTERISTICS OF SULFUR DIOXIDE

A. Color: None

B. Flammable: No

C. Odor: Characteristic, pungent; gives ample warning of its presence. Odor threshold is approximately 3 ppm.

D. Effects on humans: Irritates eyes, throat, and upper respiratory tract. HYDROGEN SULFIDE, IN PROPER CONCENTRATIONS, CAN POSSIBLE KILL.

E. Sulfur dioxide is produced during the burning of ***H2S*** or mercaptan.

IV. DEFINITIONS OF H2S CONDITIONS

A. ***CONDITION GREEN H2S* less *than 10 ppm.*** This condition indicates that drilling and production operations are under control. There are no alarms. This condition is in effect until ***H2S*** is detected in parts larger than 10 ppm. The words "POSSIBLE DANGER" accompanies the condition green.

B. ***CONDITION YELLOW H2S concentrations are 10·50 ppm.*** This condition indicates that ***H2S*** concentration is 10 ppm or greater at some point on location and the well or production stream is

C. under-control. Personnel are notified of this condition by an intermittent audible alarm and a yellow flashing light. All non-essential personnel should proceed to the upwind safe briefing area. Remaining essential personnel must wear breathing apparatus. The words "MODERATE DANGER" accompanies the condition yellow.

D. ***CONDITION RED H2S levels greater than 50 ppm.*** This condition exists when ***H2S*** concentrations reach 50 ppm at any point on the location or loss of well control occurs. Personnel are notified of this condition by a continuous audible alarm and a red flashing light. All non-essential or all personnel, as appropriate, shall evacuate the location. Any remaining essential personnel must wear breathing apparatus.

V. TOXICITY OF VARIOUS GASES (for comparison)

Common Name	Chemical Formula	Specific Gravity	Threshold Limit	Hazardous Limit	Lethal Concentration
Carbon Dioxide	CO_2	1.52	1.52		5000 ppm
Sulfur Dioxide	SO_2	2.21	2 ppm TWA		2520 ppm
Hydrogen Sulfide	H_2S	1.18	10 ppm		800 ppm 5 Min. Human
Methane	CH_4	0.55	Simple Asphyxiant	Combustable above 5% in air	Simple Asphyxiant
Hydrogen Cyanide	HCN	.94	10 ppm	150 ppm/ 1hr	300 ppm
Chlorine	CL_2	2.45	1 ppm	4 ppm / hr	1000 ppm
Carbon Monoxide	CO	.97	50 ppm	400 ppm / 1hr	1000 ppm

VI. TOXIC EFFECTS OF HYDROGEN SULFIDE

CONCENTRATION	**EFFECTS**
% H_2S ppm	
➢ ~ 10 *ppm-*	*eye irritation*
➢ *~ 50-100 ppm -*	*conjunctivitis respiratory irritation, stinging of no nose &throat*
➢ *~ 100 ppm -(IDLH)*	*coughing, eye irritation - loss of sense of smell 2-15 minutes*
➢ *~ 500-700 ppm*	*loss of consciousness and death in* 30 - 60 *minutes*
➢ *~ 700-1000 ppm*	*Rapid unconsciousness and cessation of respiration and death*

VIII. SUBJECTIVE ODOR RESPONSES TO HYDROGEN SULFIDE

CONCENTRATION	EFFECTS
• 0.13ppm-	minimal perceptible odor
• 0.77 ppm-	faint but perceptible odor
• 4.6 ppm-	easily detectable moderate odor
• 27 ppm-	strong unpleasant odor, but not intolerable

CAUTION!! HYDROGEN SULFIDE CAN PARALYZE THE SENSE OF SMELL. DO NOT USE ODOR TO DETECT H2S.

IV. REGULATIONS: ACCEPTABLE CONCENTRATIONS

A. (REL): Recommended Exposure Limit (NIOSH) 10ppm

Reference NIOSH 2005-149)

B. (PEL-C) Permissible Exposure Limits Ceiling (OSHA) 20ppm - 50 ppm (10-minute maximum peak)

Reference NIOSH 2005-149)

C. (TWA) Time-Weighted Average is the employee's average airborne exposure in any 8-hour work shift of a 40-hour work week.

D. (IDLH) Immediately Dangerous to Life and Health

100 ppm.

A worker never waits until the ratio is IDLH level. Exit should have taken place long before according to current safety procedures as included in this training.

(Reference NIOSH 2005-149)

E. (TL*VIC)* Threshold Limit Value-Ceiling

The concentration that should not be exceeded during any part of the working exposure.

F. (TLVITWA) Threshold Limit Value/Time Weighted Average. Eight-hours

(ACGIH) 1-ppm

Reference: American Conference of General Industrial Hygienist

These limits are not fine lines between safe and dangerous concentrations.

A. Engineering Controls

1. Design of location - layout
2. Equipment inspections
    a. Valves
    b. Gauges
    c. Pressure vessels
    d. Venting devices
    e. Flare systems
    f. Enclosed facility
    g. Abandoned facility

h. Pyrophoric substances- Iron sulfide

i. Connections

j. Gathering lines

k. Pressure relief valves

l. Storage tanks

m. Monitoring instrumentation

n. Corrosion controls

o. Abandoned equipment

B. Contractors

1. Hazard Awareness
2. Training Authentication and Verification
3. Adequate Supervision

C*. Training*

1. Hydrogen Sulfide Certification
2. Hazard Communication
3. Confined Space Entry
4. Lockout/tagout
5. Personal Protective Equipment
6. Emergency Procedures
7. Safe Work Practices
8. Rescue Breathing and CPR
9. Permitting
10. Inspections

X. PHYSIOLOGICAL AFFECT (4 WAYS OF BODY ENTRY)

All employees must understand how a material gains entrance into the body and then into the bloodstream. A material cannot produce systemic injury unless it gains entry into the bloodstream.

A. Ingestion

Anything eaten or drunk gets into the intestine and may be absorbed into the blood and thereafter prove to be toxic. In general, most people associate the term "toxicity" with things taken by mouth. The problem of ingesting chemicals is not widespread in industry.

After ingestion, which is lower than inhalation toxicity, detoxification involves deposition in the liver, conversion to a nontoxic compound, transportation to kidney *via* the bloodstream, and excretion through the kidney and urinary tract.

B. Injection

A material can be injected into any the part of the body or directly into the bloodstream. The effects produced vary with the route of administration. Injection is not too important as route of worker exposure.

C. Skin absorption

Contact of a substance with skin results in four possible actions: (1) the skin can act as an effective barrier, (2) the substance can react with the skin and cause local irritation, (3) the substance can produce skin sensitization, and (4) the substance can penetrate the blood vessels under the skin and enter the bloodstream.

D. Inhalation

For industrial exposures to chemicals, the most important route of entry is this one. ***NEARLY ALL MATERIALS THAT ARE AIRBORNE CAN BE INHALED.***

The respiratory system is composed of two main areas (1) the upper respiratory tract airways - the nose, throat, trachea, and major bronchial tubes leading to the various lobes of the lungs; and (2) the alveoli where the actual transfer of gases across thin cell walls takes place. Only particles smaller than about 5 micrometers in diameter are likely to enter the alveolar sac.

The total amount of a toxic compound absorbed via the respiratory pathways depends upon its concentration in the air, the duration of the exposure, and pulmonary ventilation volumes, which increase with higher workloads.

A TOXIC SUBSTANCE THAT IS DETOXIFIED OR EXCRETED AT A RATE THAT IS SLOWER THAN THE RATE OF INTAKE OF THE SUBSTANCE BECOMES A CUMULATIVE POISON.

REMEMBER, TIME BECOMES VERY IMPORTANT BECAUSE A HALF-HOUREXPOSURE MIGHT PRODUCE ONE EFFECT, A FEW MINUTES EXPOSURE ANOTHER, AND 24 HOURS' EXPOSURE WOULD PRODUCE OTHER EFFECTS.

NOTE: CHRONIC EFFECTS OF AIR CONTAMINANTS ARE NOT LESS SERIOUS THAN ACUTE EFFECTS SIMPLY BECAUSE THEY RESULT FROM EXPOSURE TO LOWER Concentrations OF TOXIC MATERIALS.

XI. INDUSTRIAL SOURCES OF H2S

A. Origins

Sulfur is abundant is nature. It exists in the soil as sulfates. In this form, it is taken by plants and various microbes and used for the synthesis of a variety of compounds. The most important are sulfur-containing amino acids which are essential building blocks for protein molecules. The plant largely retains these or animal that ingests it.

On the death of a plant or animal, the sulfur Bacteria decompose compounds, and the sulfur is set free, mainly as hydrogen sulfide.

B. Hydrogen sulfide in industry

In most industrial operations, sulfur compounds are undesirable components that must be removed from the product.

1. Drilling rigs- some geographical locations are richer in sulfur deposits than others, but there is always a danger of drilling into pockets of gas that will escape through the drill hole. Rigs are constantly monitored for ***H2S***.
2. Naturally occurring- Mines, volcanoes, geothermal exploration
3. Decay or putrefaction of organic matter- fishing industry, tanneries, manure processing, municipal sewers, brewery industry, slaughterhouses, and landfill workers.
4. Chemical processes- by-product of another process, catalyst, pulp paper industry, asphalt roofing industry, felt makers, gold ore workers, miners, oil, and gas processing systems.
5. Construction- trenching, working in swampy areas.

XII. PERSONAL PROTECTIVE EQUIPMENT RESPIRATORY PROTECTION

All personnel will follow the personal protective equipment policies of Global Inspection Services. As applicable to the hazards assessment, proper eye, head, hand, foot, back, respiratory, and chemical protection clothing will be worn. An injury due to lack of PPE during a hydrogen sulfide exposure goes from bad to worse.

A. IF HYDROGEN SULFIDE IS PRESENT OR THERE IS A CHANCE OF IT BEING PRESENT, THEN RESPIRATORY PROTECTION MUST BE PRESENT. ALL EMPLOYEES MUST HAVE A THOROUGH WORKING KNOWLEDGE OF RESPIRATORY PROTECTION THAT IS AVAILABLE. "THOROUGH WORKING KNOWLEDGE" IS DEFINED AS THE ABILITY TO PROPERLY PLACE EQUIPMENT ON ONESELF AND FROM THE EQUIPPED POSITION, SAFELY WORK OR SAFELY PERFORMS A RESCUE.

B. The administration of the Respiratory Protection program resides with the Safety Department. The Safety Department is responsible for training all employees initially. After this, the respiratory protection program is administered at the job site. Supervisors are primarily responsible for job site administration and the Safety Department is available for assistance. Periodic inspections will be conducted to ensure policy compliance. In hydrogen sulfide jobs, a pre-job equipment inventory will be conducted for

respiratory protection equipment and all personnel will verify that the Hydrogen Sulfide respiratory protection conditions are understood.

C. Respiratory hazards can be classified as follows:

1. Oxygen deficiency
2. Gas and vapor contaminants

a. Immediately Dangerous to Life or Health (IDLH)

b. Not Immediately Dangerous to Life or Health (non-IDLH)

3. Particulate contaminants (aerosols including dust, fog, fume, mist, smoke, and spray)

a. IDLH

b. Non IDLH

4. Combination of gas, vapor, and particulate contaminants

a. IDLH

b. Non IDLH

D. Control of Hazards

In all ***H2S*** situations, the hazard should be controlled so there will not be a need for respiratory protection. THIS DOES NOT MEAN THAT SUDDEN RELEASE DOES NOT REQUIRE RESPIRATORY PROTECTION. Means of control include consideration of process encapsulation or isolation, use of less toxic materials in the process, suitable exhaust ventilation, filters, and scrubbers to control the effluents. REMEMBER, WITH ***H2S*** YOU CAN NOT RELY SOLELY ON ENGINEERING CONTROLS: RESPIRATORY PROTECTION IS REQUIRED.

E. The following types of protection are the only types that are allowed in hydrogen sulfide environments:

1. Positive pressure SCBA (SHOULD NOT BE USED AS A WORKING UNIT- RESCUE AND INITIAL DETECTION OR MEASUREMENT ONLY)

2. Positive pressure combination airline and auxiliary SCBA

3. 5-, 10- or 15-minute Escape pack (ESCAPE ONLY)

All the *above* must *have* full-face pieces.

DANGER!!

AIR-FILTERING TYPE CARTRIDGES WILL NOT PROTECT YOU FROM HYDROGEN SULFIDE. BREATHING AIR MUST BE SUPPLIED TO THE WORKER. HYDROGEN SULFIDE DISPLACES OXYGEN (OXYGEN IS NOT THERE).

4. All the above equipment must be NIOSH/MSHA APPROVED

(National Institute of Occupational Safety and Health/Mine Safety and Health Administration). Specific label that will be attached to the equipment determines approval.

F. Employee H2S Monitors

- When the presence of hydrogen sulfide gas may exist at greater than 10 ppm in the wellbore, formation, facilities or production stream, the management is responsible for ensuring that the Company's personnel are properly trained and qualified in accordance

with, ANZI Z390.1. Personal monitoring devices must be set to alarm at 10 ppm, so the contractor and subcontractor personnel is alerted to vacate the area. The ***H2S*** monitors shall be calibrated per the manufacturer's specifications. At a minimum personal ***H2S*** monitors shall be "bump" tested at least monthly.

G. Each individual site will have site-specific respiratory plans. Within these plans, the quantity and location of the equipment must be listed, and all employees must be trained.

H. All employees will understand how to properly don and doff the respiratory equipment available. Each person must demonstrate this knowledge to the supervisor and the supervisor must be satisfied.

I. Personnel assigned job-related tasks that require routine respiratory protection will be medically evaluated per 29 CFR 1910.134. Persons that are simply monitoring areas for ***H2S*** or use the respirator for escape purposes do not have to have this medical evaluation.

J. Personnel breathing equipment shall be strategically located so that this equipment is quickly and easily available.

K. Breathing equipment shall be stored in a convenient, clean, and sanitary location.

L. All breathing equipment shall be checked before and after each use and inspected at least monthly to ensure that it is in proper working order.

M. If breathing equipment is to be rented, the rental company must provide proof that the equipment meets the most current applicable standards.

N. Face piece restrictions- Persons are not to change out mask until they are properly sanitized. Persons that will work in hydrogen sulfide areas must not have facial hair because the facial hair interferes with the seal of the mask. Personnel shall not wear eyeglasses with temple bars that extend through the sealing edge of the face piece. A SEAL MUST **BE** MAINTAINED THROUGH **FIT** TESTING CERTIFICATION AND BY INDIVIDUALLY TESTING THE EQUIPMENT BEFORE USE.

O. The air supply shall meet requirements set forth in 29 CFR 1910.134. Breathing air must meet Grade D specifications.

P. Breathing equipment shall be put on in a safe area prior to either beginning a rescue operation or entering a hazardous environment.

Q. If the area is labeled IDLH by this policy, then a standby attendant trained in rescue techniques and with suitable rescue equipment, including self-contained breathing apparatus (SCBA) shall be provided. NIOSH considers 300 ppm to be the IDLH concentration for hydrogen sulfide. NIOSH considers 100 ppm to be the IDLH concentration for sulfur dioxide.

R. Rescue equipment must match the job site specifics.

S. All employees must understand the self-contained breathing apparatus air duration. Not all persons will use the exact amount of breathing air.

T. All employees will understand how to properly inspect breathing equipment and as stated this will be done before and after use.

U. It is recommended that all employees receive a quantitative fit test with the breathing equipment they are to use before ever being exposed to the hazard.

V. When confronted with a situation that requires rescue, always go to the safe zone, and put on breathing equipment before you return to a potentially dangerous area. Remove the victim to the safe area and then, after you are sure that the area is safe, remove your mask and administer first aid. Always practice proper victim removal procedures such as isolating the neck from possible movement.

XIII. DEFINITION, PROCEDURES, AND CONTENTS OF "SAFE ZONE"

A. "Safe Zone" is defined as ... an area(s) at the ***H2S*** location where an employee can evacuate to and once there, be safe from hydrogen sulfide or byproduct harms. Also, an area where rescue, first aid, and emergency breathing equipment is available to render emergency aid. Examples of equipment that should be included are stretchers, rescue rope and harnesses, emergency breathing equipment, SCBA, first aid kit, and other equipment, as the job specifics require. These areas should be labeled with a readable sign that reads "Safe Area" or "Safe Zone".

B. There must be at least two safe zones established at all sites. One, if possible, should be the common entryway but this may be precluded due to wind direction. Another one should be located on the opposite side if possible.

C. Always, these areas are located upwind from the ***H2S*** source.

D. Upwind is determined by wind direction indicators that should be at every site. (Windsocks, brightly colored flags) These indicators should be so located that all persons know the locations and have easy visibility. In absence of an indicator, trees or grass may be used for wind direction indication. Be constantly aware of wind direction.

E. Per site specifications, all employees should be trained as to the location of the safe zones and if these locations change, all employees should be immediately notified (within 2 minutes) of the new location.

F. Equipment should not be parked in a manner that would preclude access to the zone or make the sign not visible.

XIV. AUDIBLENISUAL ALARMS

A. All employees should be aware of what alarms, both audible and visual, are present and will be used.

B. Types of alarms include flashing lights, brightly colored green, yellow and red flags, sirens, personal monitors, and hand-held electronic monitors.

C. All employees must understand what the alarms look and sound like and once recognized what to do.

D. AN ALARM IS NEVER IGNORED. ONCE YOU HEAR OR SEE AN ALARM, PROCEED DIRECTLY TO THE SAFE ZONE AND AS YOU ARE DOING THIS REMEMBER WHERE YOUR CO-WORKERS WERE LOCATED. ONCE IN THE SAFE ZONE, ACCOUNT FOR EVERYONE AND DO NOT PROCEED BACK INTO THE WORK AREA UNTIL YOU HAVE ON RESPIRATORY PROTECTION AND A WAY TO MONITOR THE GAS LEVELS.

E. All entry ways to a potential hydrogen sulfide area must be marked with either a green, yellow, or red sign or flag and the sign must state "POTENTIAL ***H2S*** HAZARD: AUTHORIZED, TRAINED PERSONNEL ONLY". The color flag or sign used is chosen based on what level of hydrogen sulfide is present. The levels were presented at the inception of this training. <u>All persons must obey all safety signs and markers.</u>

F. Contractors and/or subcontractors must understand, before any work is started, host employers' rules and regulations concerning safe zones and audible/visual alarms.

XV. EMERGENCY AND FIRST AID PROCEDURES

A. Practice the "buddy system". Before each day's work in a potential hydrogen sulfide area, account for one other person. The supervisor can assign buddies, or you can choose your own.

B. No rescue is ever attempted in a hazardous area unless you have on the proper respiratory protection. Even if someone goes down, get on respiratory protection first before you go back. TWO PEOPLE DOWN IS MUCH WORSE THAN ONE.

C. Rescue line and harnesses should be used when a person goes into a ***H2S*** area for a rescue. Rescue lines and harnesses will be kept in the safe zone.

D. When rescuing a person from an ***H2S*** exposure, try not to put unnecessary force on the person's head or neck. Attempt to support the head of the person. *Remove* the person from the danger area and then apply rescue breathing and/or first aid.

E. Rescue breathing- This section will be accompanied by a hands-on condensed demonstration of rescue breathing and CPR. THIS **WILL** NOT BE A COMPLETE CPR CLASS BUT **WILL** GIVE YOU SOME KNOWLEDGE OF HOW TO PERFORM RESCUE BREATHING AND CPR (cardiopulmonary resuscitation).

1. Call for help. Send someone for help.
2. Tilt head back
3. One breath *every* 5 seconds (12 breaths a minute is the equivalent)
4. Check pulse at minute intervals.
5. **If** pulse goes away, do CPR (chest compressions)
6. Keep doing this until a qualified person relieves you or you are exhausted.

NOTE: Death from asphyxia can be prevented if artificial respiration is started immediately and maintained until the hydrogen sulfide concentration in the bloodstream is lowered and breathing returns to normal.

F. Protect yourself from blood-borne pathogens while rendering first aid. This means to always remember universal precautions. Always assume that any blood or body fluids you encounter are contaminated and protect yourself with all necessary protective barriers. Render first aid to the best of your ability.

XVI. CONTINGENCY PLAN

1. A contingency plan is designed to identify potential emergencies and their impact of operating personnel and the public. It must conform to all local, state, and federal regulations regarding notifications, precautions, evacuations, and other requirements. (Refer to 40 CFR Part 264, Subpart D, 29 CFR Part 1910.120, 29 CFR 1910.38 for EPA and OSHA Requirements)

2. Scope of the plan

It should contain emergency response procedures that provide an organized and immediate action plan for alerting and protecting operating personnel and the public. They are site specific and list all local emergency procedures only.

3. Availability

The contingency plan shall be made available to all personnel responsible for implementation, regardless of their normal location assignment. Supervisors should contact company personnel for availability.

4. Information contained shall include (but limited to)

   A. Emergency procedures:

      1. Responsibilities of personnel
      2. Immediate action plan
      3. Telephone numbers and communication methods
      4. Locations of nearby residents, businesses, parks, schools, churches, roads, medical facilities, etc. must be listed in the plan
      5. Evacuation routes and roadblock locations
      6. Safety equipment and available supplies (i.e., number and location of breathing equipment, etc.)

   B. Characteristics of ***H2S*** and Sulfur Dioxide

   C. Facility Descriptions, Maps, and Drawings

      1. Plants
      2. Wells, tank batteries, gas-conditioning facilities, flow lines, etc.
      3. Water injection stations

4. Compression facilities

D. Training and Drills

1. Responsibilities and duties of essential personnel
2. On-site or classroom drills
3. Informing nearby residents on protective measures in emergency situations, as appropriate
4. Training and attendance documentation
5. Briefing of public officials on issues such as evacuation or *shelter-In-place* plans

E. Rates of Exposure (ROE)

Note: Class has had exercise in ROE determination in previous section

5. Emergency Telephone Numbers listed in plan should include but are not limited to:

A. Emergency Services

1. Ambulances
2. Hospitals
3. Medical personnel
4. Helicopter services
5. Veterinarians

B. Government Agencies

1. Local Emergency Planning Committee
2. National Response Center
3. State and Local Law Enforcement Agencies
4. Civil Defense
5. Fire Departments
6. Other applicable governments agencies

C. Operator and Contractors

1. Operator personnel
2. Contractor personnel
3. Applicable service companies

Hand & Power Tools

Almost all of us use hand tools at work and at home. It's estimated that about 8%of industrial accidents involve the unsafe use of hand tools (both handbook and power). These accidents result from using the wrong tool for the job (or using the right tool incorrectly), failing to wear personal protective equipment, or failing to follow approved safe practices. There are specific precautions to be taken with each type of tool. Please see below for important safety precautions.

- All tools, whether owned by company or employee, must be maintained in a safe condition, and inspected regularly. Replace defective tools and tag-out damaged equipment.
- Do not modify tools. Safety guards must NOT be removed, restrained, or bypassed.
- Use tools for designed purposes only. Get the right tool for the job.
- Do not remove guards and/or handles from grinders. Do not operate a grinder without proper training.
- Be sure power tools are turned off before connecting to an energy source. De-energize equipment before servicing or changing components.
- If there is any potential for fire or explosion, intrinsically safe tools must be used.
- Air operated tools should be chosen, and compressed gas is never used to operate these tools.
- Except for UL double-insulated tools, the frames of portable electric tools must be grounded, either through a 3-way plug or separate wire.
- Tools used in or near wet locations must be plugged into a ground-fault protection circuit.
- Never use one wrench as a cheater for a second wrench.
- Never step or jump on wrenches when additional force is required. Get the proper tool.
- An air hose is not to be used to blow particles off clothing, hair, or skin.
- Do not use tools, as a pry bar.
- Do not throw tools.
- Guards or shields must be always in place and operable while tool is being operated.
- Electric cords to power tools must be in good condition. Air hoses used for tools should be secured with devices such as whip checks or lanyards to prevent accidental separation. Hoses under pressure will be secured at end connections to prevent separation or whipping.
- Do not operate power tools unless you are properly trained.
- Be aware of twisting/kick-out forces with certain tools. Maintain solid footing and remain alert.
- Employees will be issued and are required to wear any PPE that is considered necessary to protect them from the potential hazards of the tool or environment (i.e., falling, flying, abrasive, or splashing objects, or harmful dust, fumes, mists, vapors, or gases). Compliance is mandatory.
- Carry tools in appropriate pouches and/or sheaths.
- Use proper securing devices to hold material in place.
- Do not place sharp or pointed tools in pockets.
- Hold and carry tools by designated handles.
- De-energize all power tools when moving or repairing.
- Keep cutting tools sharp and lubricated.
- Do not wear loose jewelry or clothing around rotating equipment. Tie long hair back and ensure shirttails are tucked in.

- During work operations, idle tools will be placed in secure spots where they do not become a tripping or falling hazard.
- Tools will be secured in the rear of vehicle where they do not become a projectile during vehicle collisions.
- Tools will not be stored in the rear of vehicles where they obstruct the drivers' vision.
- Report damaged tools for appropriate repair. Do not use broken tools.
- Handles will not be taped or painted.

Any tool which is not in compliance with any applicable requirement of this program is prohibited and must be identified as unsafe by tagging and/or locking the controls to render it inoperable. If this is not practical or feasible, the tool must be physically removed from its place of operation.

HAZCOM: Hazard Communication

Global Harmonized System

Introduction

The purpose of the Hazard Communication Program, also known as Right-To-Know, is to ensure employers and employees are informed about the potential hazards of materials used within the workplace. A written Hazard Communication Program is necessary to comply with the OSHA hazard communication standard 1910.1200.

The Global Harmonized System (GHS) itself is not a regulation or a standard. The GHS Document establishes agreed hazard classification and communication provisions with explanatory information on how to apply the system. The elements in the GHS supply a mechanism to meet the basic requirement of any hazard communication system, which is to decide if the chemical product produced and/or supplied is hazardous and to prepare a label and/or Safety Data Sheet as appropriate. Regulatory authorities in countries adopting the GHS will thus take the agreed criteria and provisions and implement them through their own regulatory process and procedures rather than simply incorporating the text of the GHS into their national requirements. The GHS Document thus provides countries with the regulatory building blocks to develop or modify existing national programs that address classification of hazards and transmittal of information about those hazards and associated protective measures. This helps to ensure the safe use of chemicals as they move through the product life cycle from "cradle to grave."

The requirements are as follows:

- Employers must ensure that each container of hazardous chemicals in the workplace is labeled with appropriate physical and health warning information.
- Employers must maintain copies of the safe data sheets (SDS) for each hazardous chemical in the workplace and ensure that they (SDS) are always readily accessible to all employees.
- Employers must provide employees with information and training on hazardous chemicals in their work area at the time of their initial assignment and whenever a new hazardous substance is introduced into their work area.
- Employers must develop and implement a written hazard communication program for their workplace.

- Employees working on multiple sites are required to know of all chemical hazards at each location.

Objective

The objective of the Hazard Communication (HAZCOM) program is to ensure that all employees are trained and made aware of all hazardous substances with which they work, for both routine as well as non-routine tasks. The program is also to acquaint them with the danger to their health and safety from the potential hazards of exposure to such substances in the workplace.

Purpose

The purpose of HAZCOM is to develop uniform standards in the receipt, labeling, marking, handling, storage, use and protective measures in accordance with good safety practices, OSHA regulations and state requirements of all hazardous chemicals purchases or shipped off the site.

Identifying Hazardous Chemicals in the Workplace

The first step in developing a hazard communication program is to compile a list of hazardous chemicals in the workplace. The list will also serve as an inventory of every chemical for which you should maintain an SDS. The best way to prepare a comprehensive list is to survey the workplace. Purchasing records may also help, and certainly employers should establish procedures to ensure that SDSs are received before using any material in the workplace.

The broadest possible perspective should be taken when performing the initial survey. Sometimes people think of “chemicals” as being only liquids in containers. OSHA’s hazard communication standard covers chemicals in all physical forms – liquids, solids, gases, vapors, fumes, and mists – whether they are contained or not. The hazardous nature of the chemical and the potential for exposure are the factors that determine whether a chemical is covered. If it’s not hazardous, it’s not covered. If it is hazardous, it should be included on the list.

Employee Training

Employees are to attend a training session on hazardous chemicals in their work area at the time of their initial work assignment. The training session will cover the following:

- An overview of the Hazard Communication requirements.
- A review of the chemicals presents in their workplace operations.
- The location and availability of a written Hazard Communication program, a list of hazardous chemicals and Safety Data Sheets.
- Methods and observation techniques that may be used to detect the presence or release of hazardous chemicals in the work area.
- The physical hazards of the chemicals in the work area, including signs and symptoms of exposure and any medical condition known to be aggravated by exposure to the chemical.
- How to lessen or prevent exposure to hazardous workplace chemicals by using good work practices, personal protective equipment, etc.
- Emergency procedures to follow if employees are exposed to hazardous chemicals.

- An explanation of the hazard communication program, including how to read labels and Safety Data Sheets to obtain appropriate hazard information.

Labels and Other Forms of Warning

Chemical manufacturers, importers, and distributors are responsible for appropriately labeling every container of hazardous chemicals with the identity of the material, appropriate hazard warnings, and the name and address of the producer or other responsible party. As the employer, you can rely on the labels provided by the supplier. If the material is subsequently transferred from a labeled container to another secondary container, you should label the secondary container as well. The only exception to this labeling requirement is if the chemical is intended for immediate use by the employee who performs the transfer and no other employees will have access to the secondary container (e.g., a maintenance employee empties a small amount of degreaser from a 5-gallon drum to a small secondary container for immediate use and no other employees are within the building or room.)

The primary information to be obtained from a label is the identity of the material and appropriate hazard warnings. The identity is any term which appears on the label, the SDS, and the list of chemicals, and thus

links these three sources of information. The identity used by supplier may be a common or trade name ("Black Magic Formula"), or a chemical name (1, 1, and 1 – trichloroethane.) The hazard warning is a brief statement of the hazardous effects of the chemical ("flammable," "causes lung damage"). Labels frequently contain other information, such as precautionary measures ("do not use near open flame") but this information is provided voluntarily and is not required by the standard. Labels should be legible, in English (although employers can translate into other languages if they so choose), and prominently displayed. There are no specific requirements for size or color.

What is an SDS

An SDS is, based on the provisions in HazCom 1994, there are currently several different styles and formats in use in the United States, the most common being the 8 section OSHA SDS and the 16 section ANSI standard SDS. OSHA's adoption of GHS via HazCom 2012, on the other hand, mandates the use of a single GHS format for safety data sheets, a format which features 16 sections in a strict ordering. Another change, thanks to GHS, is the renaming of safety data sheets to simply safety data sheets, or SDSs.

Safety Data Sheets

The Hazard Communication Standard has been revised by OSHA to align with the Globally Harmonized System of Classification and Labeling of Chemicals (GHS), the result of which will include substantial changes to the SDS. Chemical manufacturers and importers are required to obtain or develop a Safety Data Sheet for each hazardous chemical they produce or import. Distributors are responsible for ensuring that their customers are provided a copy of these SDSs. Employers should have an SDS for each hazardous chemical they use.

Each SDS must be in English. If your facility has employees who do not speak English, the SDSs should be translated into the applicable language(s). If you do not receive an SDS with your initial shipment of a

chemical, you should contact the supplier and request one. Also, if you receive one that is obviously inadequate, you should request one that is appropriately completed.

The role of the SDS is to provide detailed information on each hazardous chemical, including its potentially hazardous effects, its physical and chemical characteristics, and recommendations for appropriate protective measures. If you are not familiar with Safety Data Sheets and chemical terminology, a glossary of SDS terms may be helpful. In general, most employers using hazardous chemicals will primarily be concerned with SDS information regarding hazardous effects and recommended protective measures. Although all the information on the SDS is important, focus on the sections of the SDS that are applicable to your situation.

SDSs should be readily available to employees when they are in their work area and during all shifts. This may be accomplished in many ways, so it is up to you to decide which method is appropriate in your workplace. Some employers keep the SDSs in a binder in a central location, such as the supervisor's office or the jobsite trailer. Others, particularly in workplaces with large numbers of chemicals, computerize the information and provide access at computer terminals. As long as employees can get the information when they need it, any approach may be used.

In order to ensure that you have a current SDS for each chemical, and that you provide employee access, your written program should include the following information:

- Designation of person(s) responsible for obtaining and maintaining the SDSs.
- How your facility maintains SDSs (e.g., in binders in the work area or at computer terminals), and how employees can obtain access to them during their shift.
- Procedures to follow when the SDS is not received at the time of the first shipment; and,
- Description of alternatives to actual data sheets in the workplace (e.g., chemical safety telephone hotlines), if used.

For employers using hazardous chemicals, the most important aspect of the written program in terms of SDSs is to ensure that someone is responsible for obtaining and maintaining the SDSs for every hazardous chemical in the workplace. The list of hazardous chemicals required to be maintained as part of the written program will serve as an inventory. As new chemicals are purchased, the list should be updated. Many companies have found it convenient to include on their purchase order the name and address of the person designated in their company to receive SDSs.

Identifying Hazardous Materials

Materials are evaluated based on three primary categories: Health, Flammability, and Reactivity. Each chemical is given a numerical hazard level for each category, from the highest hazard level of four to the lowest level of zero. Hazard levels can be determined with the use of NFPA 704®, the chemical's Safety Data Sheet, or the chemical manufacturer. This information can be communicated using a hazard sign as shown below:

Hazard statements are standardized and assigned phrases that describe the hazard(s) as determined by hazard classification. An appropriate statement for each GHS hazard should be included on the label for products possessing more than one hazard. The assigned label elements are provided in each hazard

chapter of the Purple Book as well as in Annexes 1 & 2. Figure 4-11 illustrates the assignment of standardized GHS label elements for the acute oral toxicity categories.

Figure 4.9

GHS Pictograms and Hazard Classes		
		
▪ Oxidizers	▪ Flammables ▪ Self-Reactive ▪ Pyrophoric ▪ Self-Heating ▪ Emits Flammable Gas ▪ Organic Peroxides	▪ Explosives ▪ Self-Reactive ▪ Organic Peroxides
		
▪ Acute toxicity (severe)	▪ Corrosives	▪ Gases Under Pressure
		
▪ Carcinogen ▪ Respiratory Sensitizer ▪ Reproductive Toxicity ▪ Target Organ Toxicity ▪ Mutagenicity ▪ Aspiration Toxicity	▪ Environmental Toxicity	▪ Irritant ▪ Dermal Sensitizer ▪ Acute toxicity (harmful) ▪ Narcotic Effects ▪ Respiratory Tract ▪ Irritation

Figure 4.10

Transport "Pictograms"		
		
Flammable Liquid Flammable Gas Flammable Aerosol	**Flammable solid Self-Reactive Substances**	**Pyrophoric (Spontaneously Combustible) Self-Heating Substances**

Other GHS label elements include:

- **Precautionary Statements and Pictograms:** Measures to minimize or prevent adverse effects.
- **Product Identifier (ingredient disclosure):** Name or number used for a hazardous product on a label or in the SDS.
- **Supplier identification:** The name, address and telephone number should be provided on the label.
- **Supplemental information:** non-harmonized information.

Precautionary Statements and Pictograms

Precautionary information supplements the hazard information by briefly providing measures to be taken to minimize or prevent adverse effects from physical, health or environmental hazards. First aid is included in precautionary information. The GHS label should include appropriate precautionary information. Annex 3 of the GHS Purple Book includes precautionary statements and pictograms that can be used on labels.

Annex 3 includes four types of precautionary statements covering: prevention, response in cases of accidental spillage or exposure, storage, and disposal**.** The precautionary statements have been linked to each GHS hazard statement and type of hazard. The goal is to promote consistent use of precautionary statements. Annex 3 is guidance and is expected to be further refined and developed over time.

Product Identifier (Ingredient Disclosure)

A product identifier should be used on a GHS label, and it should match the product identifier used on the SDS. Where a substance or mixture is covered by the UN Model Regulations on the Transport of Dangerous Goods, the UN proper shipping name should also be used on the package.

The GHS label for a substance should include the chemical identity of the substance (name as determined by IUPAC, ISO, CAS, or technical name). For mixtures/alloys, the label should include the chemical identities of all ingredients that contribute to acute toxicity, skin corrosion or serious eye damage, germ cell mutagenicity, carcinogenicity, reproductive toxicity, skin or respiratory sensitization, or Target Organ Systemic Toxicity (TOST), when these hazards appear on the label. Where a product is supplied exclusively for workplace use, the Competent Authority may give suppliers discretion to include chemical identities on the SDS, in lieu of including them on labels. The Competent Authority rules for confidential business information (CBI) take priority over the rules for product identification.

Supplier Identification

The name, address and telephone number of the manufacturer or supplier of the product should be provided on the label.

Supplemental Information

Supplemental label information is non-harmonized information on the container of a hazardous product that is not required or specified under the GHS. In some cases, this information may be required by a Competent Authority, or it may be additional information provided at the discretion of the

manufacturer/distributor. The GHS provides guidance to ensure that supplemental information does not lead to wide variation in information or undermine the GHS information. Supplemental information may be used to provide further detail that does not contradict or cast doubt on the validity of the standardized hazard information. It also may be used to provide information about hazards not yet incorporated into the GHS. The labeler should have the option of providing supplementary information related to the hazard, such as physical state or route of exposure, with the hazard statement.

How are multiple hazards handled on labels?

i. Where a substance or mixture presents more than one GHS hazard, there is a GHS precedence scheme for pictograms and signal words. For substances and mixtures covered by the UN Recommendations on the Transport of Dangerous Goods, Model Regulations, the precedence of symbols for physical hazards should follow the rules of the UN Model Regulations. For health hazards the following principles of precedence apply for symbols:

   (a) if the skull and crossbones applies, the exclamation mark should not appear;
   (b) if the corrosive symbol applies, the exclamation mark should not appear where it is used for skin or eye irritation;
   (c) if the health hazard symbol appears for respiratory sensitization, the exclamation mark should not appear where it is used for skin sensitization or for skin or eye irritation.

   If the signal word 'Danger' applies, the signal word 'Warning' should not appear. All assigned hazard

statements should appear on the label. The Competent Authority may choose to specify the order in which they appear.

Is there a specific GHS label format / layout?

The GHS hazard pictograms, signal word and hazard statements should be located together on the label. The actual label format or layout is not specified in the GHS. National authorities may choose to specify where information should appear on the label or allow supplier discretion.

For additional information on HAZCOM or GHS review 29 CFR 1910.1200 and the Global Harmonized System of Classification and Labeling of Chemicals (United Nations Purple Book)

Hazard Identification & Risk Management

Purpose:

The purpose of Global Inspection Services Hazard & Risk Management Procedure is to provide guidance in relation to hazard identification, risk assessment and risk control in the workplace.

Definitions:

Hazard Identification

Is the process used to identify all the possible situations in the workplace where people may be exposed to injury, illness, or disease.

Risk Assessment

Is the process used to determine the likelihood that people may be exposed to injury, illness or disease in the workplace arising from any situation identified during the hazard identification process.

Risk Control

Is the process used to identify all practicable measures for eliminating or reducing the likelihood of injury, illness, or disease in the workplace, to implement the measures and to continually review the measures to ensure their effectiveness.

Hazard Identification

Hazards in a workplace can arise from several sources including:

- Poor workplace design.
- Hazardous tasks being performed in the workplace.
- People being exposed to hazardous substances, dangerous goods, processes, or environment.

The hazard identification process is designed to identify all situations where people may possibly be exposed to injury, illness and disease arising from all sources including the above.

Prior to the introduction of any substances, processes, or work practices in the workplace, it is essential for the hazard identification process to be carried out to identify whether there is any potential for injury, illness or disease associated with such introduction.

A hazard identification process will have been carried out on any substances, processes or work practices that have the potential to cause a risk to health and safety that currently exist at Global Inspection Services. Employees should familiarize themselves with the potential hazards and any eliminating or minimizing requirements.

Employees undertaking hazard identification should have the necessary training, or experience, or should seek assistance from a director or other subject expert in the business to ensure they look for:

Mechanical hazards including, but not limited to

- **"**drawing in" points
- impact and crushing areas
- impact and crushing areas
- cutting areas
- entanglement areas
- stabbing points
- abrasion areas
- flying particles

Non-mechanical hazards including but not limited to:

- ergonomic hazards including handbook handling
- electrical shocks and burns
- chemical burns, toxicity, flammability
- noise
- vibration
- radiation
- mist, dust, fumes

- any protrusions which could cause Injury
- suffocation
- engulfment
- biological hazards, viral
- slipping, tripping, and falling hazards
- falling objects
- high pressure fluid
- high temperature objects
- working in very hot or cold conditions

Global Inspection Services employees and/or sub-contractors will be actively involved in the hazard identification process by following the above criteria when identifying potential hazards.

Risk Assessment

The purpose of risk assessment is to determine whether there is any likelihood of injury, illness or disease associated with each of the potentially hazardous situations identified in the hazard identification process by considering:

- Whether any person (employees and visitors) would be exposed to the identified situations under all possible scenarios (e.g., during installation, commissioning, erection, operation, inspection, maintenance, repair, service, and cleaning of plant).
- What existing measures are in place to protect the health and safety of people who may be exposed; and
- How adequate the existing measures are for protecting the health and safety of people who may be exposed.

If the likelihood that anyone will be exposed to a situation under all possible scenarios is nil, then there is no risk and no additional risk control measures are required.

The adequacy of existing control measures should be considered if there is the potential that someone may be exposed to a particular situation. Existing control measures should not be regarded as adequate simply because an incident hasn't occurred. This particularly applies where the existing control measures are only administrative controls (e.g., training, safety procedures, safety signs, and supervision) or personal protective equipment (e.g., safety gloves, safety glasses).

These types of control rely heavily on human behavior in doing the right thing and any deviation in behavior (e.g., employees not following the safety procedures because some person or situation is distracting them) could cause injury, illness, or disease.

Risk Control

Where a risk assessment necessitates risk control measures, these should be undertaken in accordance with the relevant employees and using the “Hierarchy of Control". The ‘‘Hierarchy of Control” is designed to eliminate the risk, or if that is not reasonably practicable, to reduce the risk so far as is reasonably practicable, if the current measures are found to be inadequate and there is a likelihood that injury, illness or disease will result from a particular situation.

Hierarchy of Control

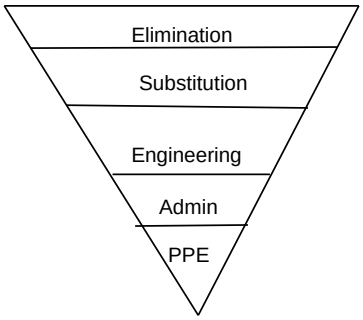
1. Elimination of hazard.

2. Substitution of hazardous processes or materials with safer ones.

3. Engineering controls.

4. Administrative controls; and

5. Personal protective equipment.



“Reasonably practicable" means practicable having regard to:

●The likelihood of a hazard or risk occurring (i.e., the probability of a person being exposed to harm).

●The degree of harm that would result if the hazard or risk occurred (i.e., the potential seriousness of injury or harm).

●What the person concerned knows, or ought to reasonably know, about the hazard or risk and any ways of eliminating or reducing that hazard or risk.

●The availability and suitability of ways to eliminate or reduce the hazard or risk; and

●The cost of eliminating or reducing the hazard or risk.

Employees involved in the hazard identification and risk management process will be trained in the initially and annually in the processes.

Illness & Injury Recordkeeping

Global Inspection Services, LLC will keep records of fatalities, injuries, and illnesses. Each fatality, injury and illness that is work-related, and a new case, and meets one or more of the general recording criteria will be recorded.

OSHA 300 Log and OSHA 301 Incident Report

Each recordable injury or illness must be entered on an OSHA 300 Log and 301 Incident Report within 7 calendar days of receiving information that a recordable injury or illness has occurred.

The OSHA 300 Log will be examined by a company executive and certified that they reasonably believe, based on their knowledge of the process by which the information was recorded, that the annual summary is correct and complete.

A copy of the annual summary will be posted in the office of Global Inspection Services, LLC in a conspicuous place where notices to employees are posted. The annual summary will not be altered, defaced, or covered by other materials.

The annual summary will be posted no later than February 1st of the year following the year covered by the records and shall be kept in place until April 30th

Retention

The OSHA 300 log, annual summary, and OSHA 301 Incident Report forms will be retained for five (5) years following the end of the calendar year these records cover.

Incident Investigation & Reporting

When is an investigation required?

Any accident or other incident that results in injury requiring medical treatment or did not involve injury to a worker or involve a minor injury that did not require medical treatment but had the potential for causing serious injury, or was an incident required by regulation will be investigated.

Definitions

Accident: a sudden or unforeseen event attributable to any factor which caused an injury to a person while he or she was carrying out the duties of their job or material damage occurred.

Incident: an event or a situation attributable to any factor which could cause an injury or illness to an employee or material damage occurred.

Injury: an injury arising out of or in the course of an accident, or a disease suffered by an employee because of the work environment activities performed in the course of employment.

Occupational Illness: any abnormal, debilitating condition of the body, or mind other than a physical injury arising out of any accident, suffered by an employee as a result of the work environment or physical activities performed in the course of employment.

Workplace: any place in or at which an employee is required to be present in the course of work.

First Aid: when an employee, as the result of an accident in the workplace, must receive on-site first aid assistance.

Health Care: when an employee as the result of an accident in the workplace must seek medical attention beyond first aid (e.g., doctor, hospital)

Lost Time: when an employee loses time from work beyond the date of the accident (i.e., typically the next day or next shift after the accident).

Critical Injury: when a "critical injury" occurs, which is defined under OSHA as an injury of a serious nature that:

- Places life in jeopardy.
- Produces unconsciousness.
- Results in substantial loss of blood.
- Involves the fracture of a leg, arm, but not a finger or toe.
- Involves the amputation of a leg, arm, hand, or foot, but not a finger or toe.
- Consists of burns to a major portion of the body.
- Causes the loss of sight in an eye.

Property damage: when there is significant property damage, a value of at least $200 is suggested as a general guideline to be used by a supervisor, although many other factors could impact on the need and level or investigation and reporting.

Incident/accident reporting requirements

In the event of a fatality or if three or more employees are hospitalized from the same event OSHA must be notified within 8 hours.

Global Inspection Services senior management must be notified immediately of any event which cause personal injury or damage to company equipment.

All investigation material should be completed and submitted to management of Global Inspection Services within 24 hours of the incident. All material that is received will be turned over to the client within 24 hours.

Investigation and Reporting Responsibilities

Management

- Ensuring that their supervisors know and fulfill the duties and responsibilities outlined in OSHA.
- Ensuring that their supervisors are competent in the skills and procedures that address accident response.
- Receive and review copies of "Incident Investigation Report" that have occurred in areas

of their influence.

- Ensuring that appropriate action is taken following an accident/incident or occupational illness to eliminate or reduce the hazards.

Employee Responsibilities

Employees include all full-time, part-time, seasonal, and casual employees.

The employee must:

- Immediately, or as soon as possible following the occurrence of an accident, report To his/her supervisor or designate. This includes accidents such as cuts, puncture wounds needle sticks, sprains, burns as well as back pains and repetitive strain.
- Immediately report to his/her supervisor or designate any "incidents" or "near misses".
- Assist with the investigation and completion of the "Incident Investigation Report" when requested.

Supervisors Responsibilities

The supervisor must:

- Ensure that the victim gets immediate medical attention, if required.
- Arrange for transportation if the injured worker requires transportation to home or doctor but does not require an ambulance.
- Secure the area to ensure that evidence is not disturbed before an investigation is completed, where circumstances and severity warrant.
- Obtain the names of any witnesses.
- Complete and the sign the "Incident Investigation Report" as soon as they become aware and fax, email or hand deliver to Management.
- Clear and precise details are essential, especially, if a claim is being filed.

Evidence Initial Identification/Assessment of Evidence

An incident investigation should answer the who, where, when, what, why, and how relating to the incident.

- Preserve the scene in its original state.
- Identify witnesses and interview witnesses.
- Gather all evidence.
- Photograph evidence.

- Complete “Incident Investigation Report”
- Submit final findings to management.

Evidence Collection, Preservation, and Security of Evidence

Collect all evidence pertaining to the accident/incident determined through the initial assessment and identification process.

It is important to preserve the evidence in its initial form contamination of the initial evidence can change the outcome of the findings of the accident/incident.

It is imperative that the evidence be secured in a manner that keeps it integrity.

Witness Interviews and Statements

During the investigation of the accident/incident statements will be taken from any witnesses of the accident/incident and documented in the “Incident Investigation Report”.

The interviews and statements should help answer the who, where, when, what, why and how regarding to the incident.

Corrective Actions

Recommendations of corrective actions to prevent similar incidents from occurring will be documented in the “Incident Investigation Report”. Once it is known why an incident occurred, determine how to prevent recurrence.

- Improve workplace inspection and maintenance programs.
- Repair or replace equipment.
- Install safeguards.
- Establish or revise safe work procedures.
- Train/retrain person(s).
- Improve supervision.

Follow-Up

After an investigation, the employer must without undue delay undertake any corrective action required to prevent recurrence of similar incidents and must prepare a report of the action taken. Operations that are similar in nature to the occurrence of the incident will be reviewed to proactively prevent a similar incident. It will be communicated to impacted employees the findings of the incident so that the probability of the incident reoccurrence will be lessened.

Injury/Incident Report Number	Employee Full Name	EID/SSN

Employee Contact Information

Date:	Home Number

Incident Location	Cell Number

Employee Location

Employee Job Title	Client Name

Supervisor

Employee Home Address

Street	City	State	Zip

Date of Accident	Time of Accident	Date Reported	Vehicle Accident Y ☐ N ☐ Vehicle Towed Y ☐ N ☐

Location of Incident

Street	City	State	Zip

Time Shift Began	Witness Name

General Description of Accident. List any unsafe conditions, acts, or procedures that may have contributed to the accident:

Was Doctor Seen?	Doctor Name

Doctors Address

Street	City	State
Zip		

Hospital Visit yes ☐ no ☐	Was Employee Hospitalized overnight? yes ☐ no ☐	Date of Hospitalization

Hospital Name

Hospital Address

Street	City	State	Zip

Part or Parts of body Injured

Employee Description of Accident:

Employee Name (Print)	Date
Employee Signature	Date
Safety Supervisor	Date

Please contact your safety supervisor upon Incident or Accident. No matter how minor the injury may be, notify your Safety Supervisor and your Chief. Your Safety Supervisor will notify your Project Manager upon the matter. Please fill out the above form with the correct information.

Additional Comments:

Ionizing Radiation

Exposure of Individuals to Radiation in Restricted Areas

No GIS employer shall possess, use, or transfer sources of ionizing radiation in such a manner as to cause any individual in a restricted area to receive in any period of one calendar quarter from sources in the GIS's possession or control a dose more than the limits specified in table A below:

TABLE A

	Rems per calendar quarter
Whole body: Head and trunk; active blood-forming organs; lens of eyes; or gonads	**1-1/4**
Hands and forearms; feet and ankles	**18-3/4**
Skin of whole body	**7=1/2**

GIS may permit an individual in a restricted area to receive doses to the whole body greater than those permitted in table A, so long as; during any calendar quarter the dose to the whole body shall not exceed 3 rems; and the dose to the whole body, when added to the accumulated occupational dose to the whole body, shall exceed 5 (N-18) rems, where "N" equals the individuals age in years at his last birthday; and GIS maintains adequate past and current exposure records which show that the addition of such a dose will not cause the individuals to exceed the amount authorized in the table above**. Dose to the whole body** shall be deemed to include any dose to the whole body, gonad, active blood-forming organs, head and trunk, or lens of the eye.

Evaluation of Radiation Hazards

GIS will evaluate as necessary radiation hazard incidents to the production, use, release, disposal, or presence of radioactive materials or other sources of radiation under a specific set of conditions. When appropriate, the evaluation will include a physical survey of the location materials and equipment, and measurements of levels of radiation or concentrations of radioactive materials present.

Monitoring Equipment

GIS shall supply appropriate personnel monitoring equipment, such as film badges, pocket chambers, pocket dosimeters, or film rings, and shall require the use of such equipment by each employee who enters a restricted area under such circumstances that he receives, or is likely to receive, a dose in any calendar quarter in excess of 25 percent of the applicable value specified in Table A and each employee under 18 years of age who enters a restricted area under such circumstances that he receives, or is likely to receive, a dose in any calendar quarter in excess of 5 percent of the applicable value specified in Table A and each employee who enters a high radiation area.

Radiation Postings

Radiation symbols shall consist of the conventional radiation caution colors (magenta or purple on yellow background) and be the conventional three-bladed design.

Each radiation area shall be conspicuously posted with a sign or signs bearing the radiation caution symbol and the words: **CAUTION RADIATION AREA**. High radiation areas shall conspicuously post a sign or signs bearing the radiation symbol and the words: **CAUTION HIGH RADIATION AREA**. Each airborne radioactivity area shall be conspicuously posted with a sign or signs bearing the radiation cautio symbol and the words: **CAUTION AIRBORNE RADIOACTIVITY AREA**.

Instruction to Employees in Radiation Areas

All individuals working in or frequenting any portion of a radiation area shall be informed of the occurrence of radioactive materials or of radiation in such portions of the radiation area; shall be instructed in the safety problems associated with exposure to such materials or radiation and in precautions or devices to minimize exposure limits as low as possible (ALARA). They must also be instructed in the applicable provisions for the protection of employees from exposure to radiation or radioactive materials and shall be advised of reports of radiation exposure which employees may request a copy of.

Warning Signals

All employees whose work may necessitate their presence in an area covered by warning signals shall be made familiar with the actual sound of the signal-preferably as it sounds at their work location.

Recordkeeping

GIS shall maintain records of the radiation exposure of all employees for whom personnel monitoring is required and advise each of its employees of his/her individual exposure on at least an annual basis.

Ladder Safety

Every year, many employees are seriously injured falling off ladders at work. These injuries include dislocated limbs, broken bones, head injuries and in a few cases some workers even die from their injuries.

Often these accidents occur because:

- The ladder moves, falls over, or is set up improperly
- The worker slips on the rungs, overreaches, or carries objects while climbing the ladder
- The worker stands on the top of the ladder
- The ladder is cracked, broken, or in need of repair

Use the rules and resources to follow so you will stay safe and working!

1. Safety climbs that are installed on ladders attached to equipment must be used. Safety climbs have safety belt attachments that allow personnel to climb without detaching their safety belts after each step.
2. Ladders must be maintained in good condition. When portable ladders are used on hard surfaces, they must be equipped with nonskid footing or securely fastened to prevent slipping. The top of the ladder should be secured, or another person should hold the ladder. The base of the ladder should

be placed away from the wall by about one foot for every four feet in height. Ladders will extend three feet past point of contact; if this is not feasible, the ladder must be secured at the top to a rigid support that will not deflect.

3. All permanent ladders must be securely fastened at both top and bottom. Long ladders should also be secured at intermediate points.
4. Ladders should be closely inspected when purchased or installed and re-inspected at least twice a year. Check the condition of the ladder before it is used and correct any defects. The combined weight of the employee and load should not exceed the load limit of the ladder. Remove any oil, grease, or slippery material from the ladder and from the shoes.
5. Wooden and fiberglass ladders must not be painted. Wooden ladders should be coated with clear varnish or shellac or treated with boiled linseed oil.
6. Ladders must not be placed in front of doors that open toward the ladder unless the door is locked or guarded.
7. When climbing or descending a ladder, a person should face the ladder and hold the side rails, not the rungs. Climbers should not carry tools or other encumbrances in their hands. A tool belt or pouch should be used for holding small tools, and a hand line should be used to raise or lower heavy or bulky objects. When a climbing belt is supplied, the person ascending or descending the ladder must use it.
8. When working from a ladder, never extend farther than the arm's length to reach work. When working on a portable ladder, move the ladder to avoid the possibility of an accident.
9. No more than one person should be on a ladder at the same time where possible. If a job requires more than one person, a second ladder or a scaffold should be considered.
10. Never work on an unsecured ladder in windy conditions.
11. A person should not stand on the top two steps or the spreader of a stepladder.
12. A stepladder should not be used as a straight ladder (i.e., used while still folded).
13. It is a good safety practice for someone to hold or steady a stepladder for a person working near its top.
14. Ladder rungs, cleats, and steps shall be parallel, level, and uniformly spaced, when the ladder is in position for use.
15. Ladders must be placed on a stable and level surface.

All ladders will be inspected by a competent person for visible defects prior to use and on a periodic basis and after any occurrence that could affect their safe operation. Any ladder that is deemed defective by the competent person is to be tagged and removed from the premises.

- Defective portable ladders must be repaired or destroyed. Damaged ladders cannot be given to employees or other personnel. Damaged ladders placed in the trash must be rendered useless.

- When performing electrical work that requires the use of a ladder, use a wooden or approved fiberglass ladder. Metal (aluminum) ladders cannot be used.
- When raising a ladder, make sure it will not contact an electrical line.
- Extension ladders should properly overlap between sections.
- Ladders must not be used as scaffold members or for any purpose for which they are not intended.
- Unsecured portable ladders should not be left standing unattended.
- Always use an approved ladder or stool to reach articles high above the floor. Never use a swivel chair or other makeshift device to reach high places.

Lockout/Tagout

Introduction

Workers performing service or maintenance on machinery may be exposed to injuries caused by the unexpected startup of machinery or equipment or the release of stored energy in the equipment. The best way to prevent employee injuries caused by the inadvertent activation of machines or equipment is to implement a Hazardous Energy Control (Lockout/Tagout) Program.

The required components of a lockout program are procedures, devices and hardware, energy isolation, notification of employees, periodic inspections, and training and communication.

Do You Need a Hazardous Energy Control Program?

The control of hazardous energy (lockout/tagout) standard applies to the control of energy during servicing and maintenance of machines and equipment. Normal production operations, with very limited exceptions, that expose an employee to dangerous moving parts are not covered by the lockout/tagout standard.

The lockout/tagout standard applies to production operations only if:

- An employee is required to remove or bypass a guard or other safety device.
- An employee is required to place any part of his or her body into the “point of operation” of the machine or where an associated danger zone exists during the machine’s operating cycle.

Lockout/tagout procedures are not required when any of the following are being performed:

- Routine, repetitive, and integral operation of equipment for production (such as minor tool changes or adjustments), provided work is performed using alternative methods to provide effective employee protection.
- Cord and plug connected equipment where energy can be removed by unplugging the cord from the energy source as long as the plug remains under the exclusive control of the employee performing the servicing or maintenance.
- Hot-tap operations where continuity of service is essential and shutting down the equipment is impractical.

Important: All exceptions to lockout/tagout procedures must continue to provide effective protection for employees.

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 in order 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.

An employee may only become an authorized employee after he or she:

- Successfully completes necessary training on lockout/tagout procedures.
- Understands the purpose and function of the lockout/tagout program.
- Demonstrates the knowledge and skill required for application, use, and removal of energy control devices.
- Understands and recognizes hazardous energy sources, their potential, and methods and means necessary for their control or isolation.

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 hand operated electrical circuit breaker; a disconnect switch; a hand 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, gravity or other energy producing source.

Hot Tap

A procedure used in the repair, maintenance, and service activities, which involve welding on a piece of equipment (pipelines, vessels, or tanks) under pressure, to install connections or appurtenances. It is commonly used to replace or add sections of pipeline without the interruption of service for air, gas, water, steam, and petrochemical distribution systems.

Lockout

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

Lockout Device

Is a method that utilizes a positive means such as a lock, to hold an energy isolating device in the safe position to prevent the energizing of equipment. Including blind 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, and 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 energizing or startup of the equipment or release of hazardous energy.

Tagout

The placement of a tagout device on an energy-isolating device, in accordance with an established procedure, to indicate that the energy isolating device and the equipment being controlled may not be operated until the tagout device is removed.

Tagout Device

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

Devices and Hardware

Lockout and tagout devices may include locks, tags, chains, hasps, wedges, key blocks, self-locking fasteners, or other devices obtained for isolating, securing, or blocking machines or equipment from their energy sources. All lockout devices should be individually identified, used only for lockout

purposes, and should be the only devices used for controlling energy. In addition, lockout and tagout devices should be:

- **Durable** – Able to withstand the exposed environment for the duration of their use. Tagout devices should be designed so exposure to wet and damp conditions will not cause the tag to deteriorate or the message on the tag to become illegible.
- Tags should also be designed to stand up to corrosive environments where acid and alkali chemicals are handled and stored.
- **Standardized** – Lockout devices should be standardized within the facility by color, shape, or size. Tagout devices should be designed with a standard print and format.
- **Substantial** – Substantial enough to prevent removal without the use of excessive force or unusual techniques, such as bolt cutters. Tagout devices should be substantial enough to prevent accidental removal. A non-reusable nylon cable tie provides an effective means of attachment.
- **Identifiable** – Each device should indicate the identity of the employee applying the device. This can be accomplished on locks by engraving the employee's number into the lock or affixing a placard to the lock with employee information.
- **Informative** – Tag out devices should warn against the hazardous conditions that may occur if the machine or equipment is energized. The tag should also include one of the following statements:
    - Do Not Operate
    - Do Not Start
    - Do Not Open
    - Do Not Close
    - Do Not Energize

Written Energy Control Procedures

Written procedures should clearly and specifically outline the following:

- Equipment name and location.
- Energy source(s).
- The intended use of the procedure.
- Steps for shutting down, isolating, blocking, and securing machines or equipment to control hazardous energy.
- Steps for the placement, removal and transfer of lockout devices and the responsibility for them.

- Requirements for testing the machine or equipment to make sure all energy sources are controlled.

Whenever possible, pictures of the equipment associated with the energy control procedure should be added to the written procedure. For example, if a piece of production equipment requires the electricity to be locked out at an electrical disconnect box, pictures of the equipment and location of the disconnect box will assist employees in the proper shutdown procedures.

If the facility contains equipment that is unable to accept a lockout device, a tagout device **and** additional safety measures should be used which provide an equivalent amount of protection to workers. Possible safety measures include:

- Removal of a valve handles to reduce the likelihood of inadvertent activation.
- Removal of an isolating circuit element such as a fuse.
- Blocking of a control switch
- Using tools designed to accept lockout devices, such as gate valve covers, ball valve lockouts, fuse lockouts, and wall switch lockouts.

Whenever possible, a lockout device should be used in conjunction with a tagout device.

Lockout/tagout is by far the best protection for workers performing maintenance or service on a piece of equipment.

Exceptions to Lockout/Tagout

According to OSHA, if all the following exceptions can be documented for a particular piece of equipment, lockout/tagout procedures are not required.

- The machine or equipment has no potential for stored energy or residual energy or reaccumulation of stored energy after shutdown, which could endanger employees.
- The machine or equipment has a single energy source, which can be readily identified or isolated.
- The isolation and locking out of that energy source will completely de energize and deactivate the machine or equipment.
- The machine or equipment is isolated from that energy source and locked out during servicing or maintenance.
- A single lockout device will achieve a locked-out condition.
- The lockout device is under the exclusive control of the authorized employee performing the service or maintenance.
- The servicing or maintenance does not create hazards for other employees.
- The employer, in utilizing this exception, has no accidents involving the unexpected activation or re-energizing of the machine or equipment during service or maintenance.

Method of Hazardous Energy Control

OSHA requires that employers follow a series of steps to ensure that the lockout of hazardous energy is performed safely and effectively. The following actions should be completed in sequence:

1. **Preparation for shutdown.** Before an employee turns off a machine or piece of equipment, the authorized employee should have knowledge of the type and magnitude of the energy, the hazards of the energy, and the methods to control the energy. The authorized employee should notify all affected employees in the area that the equipment will be shut down and locked out, and that the affected employee(s) will be notified when the servicing or maintenance is complete.
2. **Machine or equipment shutdown.** The machine or equipment should be turned off using the normal shutdown procedures, such as depressing the stop button. Shutdown should be completed as to eliminate any hazards to employees as a result of the equipment stoppage.
3. **Machine or equipment isolation.** All energy isolating devices that are needed to control the energy to the machine or equipment should be identified as to isolate the machine or equipment from the energy sources. If the written procedures are accurate, identifying the energy sources should be much easier.
4. **Lockout or tagout device application.** An authorized employee should affix lockout or tagout devices to each energy-isolating device. The lockout and tagout devices should effectively hold the energy isolating devices in a “safe” or “off” position.
5. **Stored energy.** All potentially hazardous stored or residual energy should be relieved, disconnected, restrained, or otherwise rendered safe. Stored energy is common in springs, elevated machine members, rotating flywheels, and hydraulic, pneumatic, gas, steam, or water pressure systems.
6. **Verification of isolation**. Before beginning work on the locked-out machine, the authorized employee should verify that isolation and de-energizing has been accomplished. This can be accomplished by pressing the normal on-off controls to make sure all hazardous energy has been removed.

Group Lockout

When a group of workers is assigned to repair a machine covered under the lockout standard, each employee should affix a personal lockout device to the group lockout device when he or she begins work and should remove the device when he or she stops working on the machine.

One authorized employee should be made responsible for all employees working under the protection of a group lockout device. The authorized employee should observe any dangerous exposures to the workers and make appropriate decisions regarding their safety.

Shift Changes

When work on a machine continues for more than one shift, oncoming employees should place his/her lockout device on the energy isolation device before the off-going employee removes his/her lockout device. At no time should the machine being worked on be without lockout protection.

Removal of Lockout/Tagout Devices

The authorized employee should follow several steps prior to the removal of the lockout device from the machine. These include:

- Verify that the work area in and around the machine has been cleared of all nonessential items, such as the tools or parts used for the repair. Also, verify that all components of the machine are intact and, in the configuration, needed to safely run the machine.
- Verify that all employees are away from the equipment and notify affected employees that the devices will be removed.

Once these requirements are met, everyone may remove his or her own lockout device from the machine or equipment.

Outside Contractors

Whenever outside personnel are contracted to repair machines covered by the lockout standard, they must be informed of the energy control procedures for each machine. The on-site employer and the outside contractor should inform each other about the particulars of their individual lockout procedures.

Periodic Inspections

At least annually, all lockout/tagout procedure should be reviewed. An authorized employee who does not use the specific lockout procedure should inspect the procedure for adequacy and compliance with the lockout standard. If any deviations or inadequacies are identified, steps should be taken to update the procedure to compliance. If the inspecting employee is even slightly unsure of the proper procedures, the energy control procedure should be updated. The inspection should include a review, between the consultant and each authorized employee, of that employee's responsibilities under the energy control procedure being inspected. If a tagout-only system is in place for the inspected procedure, the machine's operators should also be included in the review.

Annual inspections should be documented with the following information:

- The machine or equipment on which the procedure is being inspected.
- The date of the inspection.
- The employees included in the inspection.
- The person performing the inspection.

TRAINING AND COMMUNICATION

Employees should be trained to ensure that they understand the purpose and function of the energy control program. In this training, employees should acquire the knowledge and skills required for the

safe application, usage, and removal of the energy controls. Training requirements for each employee classification are listed below:

- **Authorized employees.** Authorized employees (i.e., those who implement the procedure) should be trained to recognize the types and magnitudes of hazardous energy sources in the workplace, the methods used to isolate and control the energy, and removal of energy control devices.
- **Affected employees**. Affected employees (i.e., those who operate or work around the machine being locked out) should be trained on the purpose and use of the energy control procedure.
- **All other employees**. Employees whose work operations may be in an area where energy control procedures are in use should be trained on the procedure and instructed never to attempt to restart or reenergize a machine that has been locked out or tagged out.

Retraining on the lockout policy should be provided for all authorized and affected employees whenever there is:

- A change in employees' job assignments.
- A change in machines.
- Equipment or processes that may present a new hazard.
- A change in energy control procedures.

Retraining should also occur whenever a periodic inspection reveals, or whenever the employer believes, that an employee is performing the energy control procedures inadequately. The retraining should reestablish the employee's proficiency in the procedure and introduce new or revised control procedures if necessary.

Manual Lifting

Purpose

The purpose of the GIS Manual Material Handling Program is to apply ergonomic principles and sound decision-making to the workplace to reduce the number of manual lifts thus decreasing workplace injuries and, where possible, increasing productivity, quality, and efficiency. A proactive material handling approach focuses on making changes when risk factors have been identified, as well as incorporating automated material handling into the design phase of new facilities, equipment, tools, and scheduling changes.

All employees are required to follow the minimum procedures outlined in this program. Any deviations from this program must be immediately brought to the attention of the Program Administrator.

Scope

GIS strives to provide all employees with a safe and healthy workplace. This Manual Material Handling Program is integrated into our company's written safety and health program and is a collaborative effort that includes all employees. The Program Administrator is responsible for the program's implementation, management, and recordkeeping requirements.

Program Responsibilities

Management: The management of GIS is committed to the safe handling of all materials. Management supports the efforts of the Manual Material Handling Program Administrator by pledging financial and leadership support for the identification and control of material handling risk factors.

Material Handling Program Administrator: The Program Administrator will report directly to upper management and be responsible for this program. All evaluations, controls and training will be coordinated under the direction of the Program Administrator in collaboration with management. The Program Administrator will monitor the results of the program and determine additional areas of focus as needed. The Program Administrator will also:

- Ensure that those performing worksite evaluations and training are properly trained
- Ensure that control measures are implemented in a timely manner
- Schedule manager, supervisor and employee training and maintain records to include date, name of instructor, topic and materials used
- Follow-up with any material handling strategy and/or solutions
- Monitor the program on a quarterly basis and provide an annual review
- Assist in selection of appropriate material handling equipment and tools

Department Managers and Supervisors: Managers and supervisors of GIS will:

- Remain accountable for the health and safety of all employees within their departments through the active support of this program
- Attend material handling training on the recognition and control of work-related material handling risk factors; this is a supplemental component to our Ergonomics program
- Ensure that employees in their areas have received the appropriate training
- Ensure that safe material handling practices and principles are considered daily and when conducting worksite evaluations
- Ensure that recommended controls are implemented and/or used appropriately through active follow-up
- Provide employees with and ensure the proper use of appropriate tools, equipment, parts, and materials
- Maintain clear communication with managers and employees
- Make assistance available to employees who manually handle or lift items weighing 50 pounds or greater

Employees: Every employee of GIS is responsible for conducting himself/herself in accordance with this policy and program. All employees will:

- Use two-wheeled trucks, four-wheeled carts, roller conveyors, pallet jacks, or any other material handling equipment in the manner established by managers and supervisors
- Ensure that equipment is properly maintained in good condition and when not, report it immediately
- Provide feedback to managers and supervisors regarding the effectiveness of design changes, new tools, or equipment
- Attend training as required and apply the knowledge and skills acquired during training to their jobs, tasks, processes, and work activities
- Use proper lifting and material handling techniques as outlined in this policy
- Limit manual lifting or handling tasks to objects less than 50 pounds
- Get assistance whenever manually handling or lifting materials that are 50 pounds or greater
- Report injuries within 24 hours of their occurrence

Employee involvement is an essential element to the success of this program. Employee participation in the program will occur only during company time. Employees that identify lifting hazards or other safety hazards will immediately notify their supervisor. If a supervisor is not available, they are to contact the Safety Manager or Program Administrator.

Manual Material Handling Risks

Material Handling Equipment. Additional tools and equipment are required when lifting or handling material weighing over 50 pounds. Manual material handling equipment should be used only for its designed task and maintained in good condition. The manual material handling equipment available at GIS includes:

- Two-Wheel Trucks: Do not overload these trucks; load a maximum of 200 pounds. Make sure hand trucks are stored in a vertical position when not in use.
- Four-Wheel Carts: Load material evenly on carts to prevent tipping and view obstruction. Push rather than pull carts, unless specially designed to be pulled.
- Roller Conveyor: Keep hands and feet away from pinch points and make sure that rollers extend beyond the load.
- Pallet Jacks (manual or powered): Use a jack properly rated for the load. Place the jack on a level, stable, and clean surface. Avoid metal-to-metal contact (jack to surface being lifted) by using wooden shims.

Housekeeping. Material handling and storage areas must be kept free of excess materials that create hazards (i.e., fire, explosions, slips, trips, or infestation by insects or rodents.)

Aisles and Passageways. Where mechanical handling equipment is used, 10-foot safe clearances shall be allowed for aisles, at loading docks, through doorways, and wherever turns or passage must be

made. Aisles and passageways shall be kept clear and in good repair, with no obstruction across or in aisles that could create a hazard.

Permanent aisles and passageways are marked with yellow lines. Clearance signs and warning of clearance limits are posted throughout the facility where headroom is below 10 feet. All equipment is marked indicating the working load it will safely support. Do not overload any piece of equipment.

The following is a list of materials/items that are commonly handled manually at GIS and the equipment that must be used to handle the material. The list does not cover every lifting occurrence in the workplace. If the task you are about to perform is not listed, contact your supervisor to determine the safest way to handle the material/item.

Material to be lifted or moved	**Equipment to be used**

Employee Training

Training is intended to enhance the ability of managers, supervisors, and employees to recognize work-related material handling risk factors and to understand and apply appropriate control strategies. Training in the recognition and control of these risk factors will be given as follows:

- To all new employees during orientation
- To all employees assuming a new job assignment requiring manual material handling
- When new jobs, tasks, tools, equipment, machinery, workstations, or processes are introduced
- When high exposure risk factors have been identified

The minimum training requirements for all managers, supervisors and employees will include the following elements:

- An explanation of GIS material handling program and their role in the program
- Knowledge of job tasks that require manual material handling
- An understanding of the basics of ergonomics
- The methods used by GIS to minimize work-related risk factors

Training should include the following topics:

Mechanical aids for carrying or moving loads are to be used whenever possible to minimize manual material handling. These mechanical aids include hand trucks, carts, dollies, rolling conveyors, wheelbarrows, etc. When designing or modifying storage areas, store heavy items on shelves between knee and shoulder level and avoid storing items on the floor. Also, lighter items should be stored on top shelves. Whenever possible, decrease the object container size, change container shape and/or add handles to aid in handling.

Even when mechanical aids are used to move materials, some lifting cannot be avoided. Before you lift, remember the following:

- Use manual material handling devices (hand dollies, carts, lift tables, forklifts) where defined by the company and wherever possible in all other situations
- Wear supportive shoes
- When possible, push and pull rather than lift and lower
- Reduce the size of the material to keep it light, compact, and easy to grasp
- Try to have most workplace deliveries placed at hip height
- Always keep objects in the comfort zone (between hip and shoulder height)
- Keep all loads close to and in front of the body
- Keep the back aligned while lifting

- Keep elbows near 90 degrees
- Avoid slopes
- Avoid uneven floors
- Maintain the center of balance
- Let the legs do the actual lifting
- Decide on the route to take
- Check the route for any problems or obstacles such as slippery or cluttered floors

Unloading objects should be done the same way as loading objects, but in the reverse order as follows:

- Slowly bend your knees to lower the load
- Keep your back straight and the weight close to the center of your body
- Allow enough room for fingers and toes when the load is set down
- Place the load on a bench or table by resting it on the edge and pushing it forward with your arms and body
- Secure the load to ensure that it will not fall, tip over, roll or block someone's way

One-arm loads are used when carrying items such as pails or buckets. Lifting and carrying one-arm loads should be performed as follows:

- Bend at the knees and waist, keeping your back straight
- Reach for the load
- Grasp the handle of the load firmly
- Lift with your legs, not your shoulders and upper back
- Keep your shoulders level while switching hands regularly to reduce overexerting one side of the body

Team lifts are used when objects are too heavy, too large, or too awkward for one person to lift. Team lifts should be performed as follows:

- Work with someone of similar build and height, if possible
- Choose one person to direct the lift (e.g., "lift on the count of three")
- Lift with your legs and raise the load to the desired level at the same time
- Always keep the load at the same level while carrying
- Move smoothly and in unison

- Set the load down together

Overhead loads should be eliminated, if possible, but, if necessary, should be conducted as follows:

- When lifting or lowering objects from above the shoulders, lighten the load whenever possible
- Stand on something sturdy such as a step stool or platform to decrease the vertical distance

When lowering objects from above the shoulders, grasp the object firmly, bring the load as close to your body as possible, slide it down slowly and proceed with your move

No Weapons Policy

You are prohibited from carrying a weapon while performing your job, whether you are on company property at the time or not. This applies even if you are licensed to carry a handgun. Furthermore, this policy prohibits weapons at any company-sponsored functions such as parties or picnics.

Prohibited weapons include any form of weapon or explosive restricted under local, state, or federal regulation. This includes all firearms, illegal knives or other weapons covered by the law. (Legal, chemical-dispensing devices such as pepper sprays that are sold commercially for personal protection are not covered by this policy.)

An exception is only allowed if the company has given you written consent to carry a weapon while performing specific tasks on its behalf. This includes police officers or guards who are performing security services for the company.

If you have a question about whether an item is considered a weapon under this policy, please check with your manager or personnel contact. You are expected to verify ahead of time that an item is not defined as a weapon under this policy before having it in your possession while on duty. You will be held responsible if it is a prohibited item.

This policy applies to all associates; contract and temporary associates; and visitors on company property, including customers and contractors.

Direct any questions or report possible violations of this policy to your manager or your safety manager.

Noise Exposure

Introduction

Excessive noise can destroy the ability to hear and may also put undue stress on other parts of the body, including the heart. There is no cure for the physical damage noise causes to the body, so prevention of excessive noise exposure is the only way to avoid health damage. The physical damage done by noise depends mainly on how loud it is and on the length of time you are exposed to it.

To deal with noise and hearing conservation in the workplace, OSHA developed standard 1910.95 “Occupational Noise Exposure”. This standard requires employers to provide a work environment free from identifiable noise hazards. It also requires employers to implement a Hearing Conservation Program if a worker’s exposure cannot be limited to noise levels averaging 85 decibels (dBA) or less for

an 8-hour workday. Although your operations may produce noise more than 85 dBA, the duration of employee exposure to that noise must be considered to determine if a hazard exists.

Determining Exposure Levels

Positively determining if your operations expose workers to levels of noise more than the OSHA limit requires the use of noise sampling devices such as a noise dosimeter or sound level meter. These instruments will provide the measurements necessary for determining “average” daily employee noise exposures. The following chart briefly outlines the maximum permissible noise exposures according to the OSHA regulation.

Table 1: Permissible Noise Exposures

Hours / Day	Sound Level in dBA
16	85
12	87
10	88
8	90
6	92
4	95
3	97
2	100
1.5	102
1	105
.5	110
.25	115

Note: Exposure to impulsive or impact noise should never exceed 140 dBA

Effects of Noise on the Body

The human body begins to react to noise above 70 dBA with physical, mental, and emotional effects. The big problem with noise is that its effects are not generally immediate. Hearing deteriorates little by little, getting worse with time. Once deterioration begins, there is no treatment or cure. The damage is irreparable.

Effects of Noise on Hearing

A traumatic noise, like an explosion, can cause a sudden and permanent hearing loss.

Exposure to intense noise, even for short periods of time, can cause temporary hearing loss.

Usually, the hearing returns to normal after a period of time. Permanent hearing damage can also occur after repeated, lengthy exposure to high intensity noise. This damage is irreparable because the nerve cells contained within the ear have been destroyed. Permanent hearing damage should be suspected if you experience any of the following symptoms:

- Buzzing or other unusual noises in the ear that usually appear in quiet surroundings or when going to sleep
- Inability to hear low/high frequency sounds

- Difficulty hearing and understanding a conversation in person or over the phone
- All sound is muffled

Hearing Conservation Program

A Hearing Conservation Program is required if, after applying all administrative and engineering controls, the average noise exposure levels for all employees are not below 85 decibels (dBA) for an 8-hour workday. It is advisable to have a single person in charge of the program to maintain consistent and complete documentation. The following topics outline the elements of a hearing conservation program.

Training Program

This employer will institute a training program for all employees who are exposed to noise at or above an 8-hour time weighted average of 85 decibels and will ensure employee participation in such program.

The training program will be repeated annually for each employee included in the hearing conservation program. Information provided in the training program will be updated to be consistent with changes in protective equipment and work processes. Each employee will be informed of the following:

- The effects of noise on hearing.
- The purpose of hearing protectors, the advantages, disadvantages, and attenuation of various types, and instructions on selection, fitting, use, and care.
- The purpose of audiometric testing, and an explanation of the test procedures.
- Access to information and training materials. This employer will make available to affected employees or their representatives' copies of this standard practice instruction and 29 CFR 1910.95 and will also post a copy in the workplace.

Hearing Protection

Employees should be given the opportunity to select hearing protection from a variety of suitable styles and types. A minimum of two types of hearing protection must be offered (i.e., earplug and earmuff). Annual training is required for all affected employees in the proper use of and limitations of hearing protection and effects of noise on hearing. Work areas where hearing protection is required should be clearly identified.

Selecting the right type of hearing protection depends on the type of noise and working conditions that your employees are exposed to. One of the most important points to consider is the length of time your employees will be wearing the hearing protection. The more comfortable they are and the easier they are to use, the longer your employees will wear them.

Fitting Hearing Protection

Foam Earplugs

Always wash your hands prior to inserting earplugs. Roll the earplug between your fingers to squeeze it into as small a diameter as possible. Pull your ear upwards and sideways and place the earplug in the auditory canal. Hold the earplug in this position until it has fully expanded.

Earmuffs

Align the height of the ear cup to completely cover the entire ear. Brush excess hair back and out as much as possible from beneath the ear cushion. Be certain that the ear cushions seal tightly against the head, with no interference from objects such as respirator bands or arms of glasses, to obtain the best performance.

Training

Hearing Conservation Program training should occur annually for all employees included in the program. The information provided should be updated to be consistent with changes in hearing protection and work processes. The training should consist of, at a minimum, the following:

- The effects of noise on hearing
- The purpose of hearing protection
- The advantages, disadvantages, and attenuation of various types of hearing protection
- Instructions on selection, fitting, use and care of hearing protection
- The purpose of audiometric testing and an explanation of the test procedures

Conclusion

The goal of the Hearing Conservation Program should be to eliminate hearing loss due to workplace noise exposures. This will mean annual reviews of the program to ensure that employees are following the steps outlined during training and the audiometric data is evaluated.

The success of a Hearing Conservation Program requires input from employees, managers, and owners to ensure all facets of the program are followed.

Training

There is an annual training program for employees in the hearing conservation program that will provide updated information consistent with changes in hearing protection and work processes. The training will contain at least the following information:

- The effects of noise on hearing at work and at home
- The purpose of the hearing protection, the advantages/disadvantages of using hearing protection and selection (i.e., availability, ear infections, inadequate fit, limitations, etc.)
- How to properly fit, care for, and use their hearing protection
- Purpose of audiometric tests and an explanation of the testing procedures

Permit to Work

Safe Work Permit

Risk Assessment

A risk assessment shall be conducted to identify and assess hazards. Proper controls must be implemented to mitigate identified hazards.

Why is a Safe Work Permit Issued?

A Safe Work Permit is issued for all high-risk and non-routine tasks. When performing low risk/routine tasks the authorized permit issuer must be consulted to determine if a Safe Work Permit is needed. Deviations from a work permit may apply in the event of an emergency.

When is a Safe Work Permit Issued?

A Safe Work Permit shall be issued and executed before work on a task begins. In certain situation's it may not be reasonably practical to issue the permit prior to work beginning. Any such exceptions shall be authorized by the site supervisor.

Roles, Responsibilities and Signatures

A **Permit Requestor** is an individual requesting a Safe Work Permit; identifies hazards and proposed controls. They shall not issue Safe Work Permits to themselves.

A **Permit Issuer** is an individual approving use of a Safe Work Permit; ensures site preparations are complete and informs individuals affected by the work.

A **Permit Holder** is an individual who is responsible for obtaining the Safe Work Permit and ensuring work is carried out in accordance with conditions of the Work Permit.

Safe Work Permit Review

Before the beginning of each shift, a thorough review of any active Safe Work Permits shall be completed.

Safe Work Permit Assessment

If the work scope changes, then the current Safe Work Permit must be closed and a new Safe Work Permit must be issued in situations where new, previously unidentified hazards arise, the Safe Work Permit will be suspended and reviewed.

Personal Protective Equipment

General

Personal protective equipment is designed to be a front line of defense for the employee where engineering controls cannot eliminate a hazard. The purpose of PPE is to shield and isolate the employee from potential hazards that could not be controlled by any other means.

General PPE includes the following,

1. Hard Hat
2. Safety Glasses
3. Steel Toe Boots
4. Fire Retardant Clothing
5. Gloves

Hazard Assessment

A hazard assessment must be conducted to determine the proper personal protective equipment to be worn or utilized per job assignment. Global Inspection Services generally requires, on all jobs, hard hats, gloves, steel-toe foot protection, earplugs, and safety glasses. The Global Inspection Services supervisor over the job will conduct the hazard assessment during the pre-job safety meeting to determine if additional protective equipment is needed, such as, but not limited to, fire retardant clothing, respiratory Global Inspection Services protection, or special gloves per SDS requirements. The pre-job safety meeting roster/check-off sheet serves as the hazard assessment documentation and must include Global Inspection Services Supervisor (as hazard assessment certifier) name, signature, and date of assessment. Every Global Inspection Services jobsite must have a documented hazard assessment, and all personnel are required to wear the PPE that is determined to be necessary. Global Inspection Services always requires engineering practices to be implemented to control hazards before PPE will be relied upon to control any hazards.

Compliance

To ensure that Global Inspection Services not only protects its employees, but also stays in compliance with current regulations, the following PPE plan will be utilized:

- Conduct a hazard assessment to identify potential hazards and insure that affected employees are equipped with the appropriate protective equipment.
- Provide PPE training based on the findings of the hazard assessment.
- If PPE is damaged or defective, it shall not be used. A replacement must be provided, or repairs made before the employee can return to work.
- Employee-owned PPE must be inspected before it can be used on the jobsite. In addition, employee-owned PPE used on a jobsite will be governed by this program; it will be used, maintained, and inspected according to the same guidelines that company-owned PPE will be.

Personal Protective Equipment is required to protect employees from hazards of process or environment. PPE will protect body parts from inhalation, absorption, or physical contact.

Training

Each employee that will be required to utilize PPE must be trained in the following areas regarding the PPE they are to use:

- What PPE is needed for his/her job and why it is needed.

- When PPE is to be worn.
- The limitations of their PPE.
- How to put on, take off and adjust their PPE; and
- How to properly maintain, clean and dispose of their PPE.
- Proper fitting of PPE

Training is conducted at new hire orientation (before the employee is exposed to a hazard). Retraining is required in the following situations:

- when changes in the workplace dictate a change of PPE
- when changes in the workplace make the former training obsolete
- when the provided and/or available PPE itself changes
- when an employee cannot properly use and/or demonstrate an adequate knowledge of his/her assigned PPE.

All training and retraining must be documented; the name(s) of the person(s) trained, the date of training, the training topic, and the instructor's name must be recorded.

Hardhats

Hardhats are designed to offer the user protection from vertical and horizontal impact and limited electrical protection. All hardhats must be ANSI Z-89 approved.

Hardhats need to be inspected often to ensure that the liner is not damaged, that the dome has not sustained sun damage, that it is not cracked, or that any modifications have been made. That dome should not be brittle or soft, and there should be no holes whatsoever anywhere on the hardhat.

The application of too many hardhat stickers hinders the wearer from making a complete and thorough inspection.

Do not carry or hide anything inside the hardhat where it can hinder the shock absorption effect of the liner.

The hardhat should be worn with the visor facing forward and the hardhat level on the head. It must not be worn backward or tilted to the side. If you are to use a winter liner, do so in accordance with the manufacturers' guidelines. Chinstraps should be considered when working at heights under windy conditions.

Clean hardhats with mild soap and water and avoid using gasoline, kerosene or any other such solvent.

The following is a chart used to determine ANSI classifications:

Old ANSI Designation	Application	New ANSI Designation
A	Protects against falling objects and insulates against 2,200 Volts	G
B	Protects against falling objects and insulates against 20,000 Volts	E
C	Protects against falling objects and offers no electrical protection	C

Eye and Face Protection

All safety glasses must be approved ANSI Z-87.1-1989 type—designated Z87. Eye and face protection shall be worn where any of the following hazards are present:

- Flying particles.
- molten metals.

Safety glasses are the most basic form of eye protection available. Their effectiveness is limited to the hazards they are designed to protect against. They are designed to protect the user from flying objects or particles. Side shields are always required. Inspect regularly for scratches on the lenses and continual proper fit.

Foot Protection

ANSI Z-41 approved footwear is the only acceptable footwear allowed. Some hazards that might be encountered in the working environment are, but not limited to:

- Falling object
- Rolling objects
- Piercing objects
- Chemicals
- Electricity

The most commonly used form of footwear used will be the steel-toed work boot. Steel toes are designed to protect against falling objects that might crush the toes.

Fire Retardant Clothing

GIS has revised their PPE requirements to comply with the current industry standards such as National Fire Protection Association (NFPA) OSHA memorandum setting forth guidelines regarding the use of FRC's for all individuals working in the oil & gas industry. Therefore, the use of FRC's will be required for individuals working with certain clients in their field locations, maintenance shops or yards effective January 2011

FRC's shale meet the minimum Hazard Risk Category (HRC) ranking of HRC 1 which provides a minimum protection.

- Sleeves shall be rolled down
- Buttons shall be fastened, and the zippers shall be zipped
- Be the outer layer of clothing.

The requirements for meeting these needs will be mandated based upon each client's expectations for the certain type, whether that is coveralls, clothing etc.…

PSM: Process Safety Management

Applicable OSHA Standards: 29 CFR 1910.119

1. **Purpose & Scope**

1.1. This example Process Safety Management (PSM) Program complies with OSHA standard 29 CFR 1910.119, Process Safety Management of Highly Hazardous Chemicals; Explosives and Blasting Agents.

1.2. Because Global Inspection Services, LLC may be a contractor working inside of a PSM facility, it will abide with all such PSM contractor requirements. Under this program, Company employees will be trained in the concepts and requirements of PSM.

1.3. This program is included here for informational purposes only, and as a typical example of PSM development and implementation in client facilities.

1.4. Actual client PSM Program requirements apply to all employees and contractors working within the client-controlled work locations.

2. **Contractor Safety Responsibilities Under a PSM Program**

2.1. The contract employer will assure that each contract employee is trained in the work practices necessary to safely perform his/her job.

2.2. The contract employer will assure that each contract employee is instructed in 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.

2.3. The contract employer will document that each contract employee has received and understood the training required by this paragraph. The contract employer will prepare a record which contains the identity of the contract employee, the date of training, and the means used to verify that the employee understood the training.

2.4. The contract employer will assure that each contract employee follows the safety rules of the facility including safe work practices required by OSHA. This includes procedures for lockout/tagout, confined space entry, opening process equipment or piping and controls over entrance to facility.

2.5. The contract employer will advise the employer of any unique hazards presented by the contract employer's work, or of any hazards found by the contract employer's work.

2.6. The example program follows.

3. **Preface of Example PSM Program**

3.1. Safety, health, and environmental responsibilities must be managed by line management as they manage their other responsibilities including production, quality, cost, and personnel relations. The same basic management techniques are used to manage safety, health, and environmental requirements as for production and quality management.

3.2. These include planning, organizing, leading, and controlling assigned responsibilities.

Responsibility for protecting people, property, and the environment begins with the ranking facility manager and extends through all levels of the line management organization including employees.

3.3. Each person in the line organization from the ranking manager to the employees has specific safety, health, and environmental responsibilities that they cannot delegate to others. They must effectively discharge their personal responsibility for protecting people, property, and the environment to achieve a safe and healthful working environment.

3.4. One important part of the overall safety and health program involves the prevention of unwanted releases of hazardous chemicals into locations which could expose employees and others to serious hazards as well as the environment and people in the surrounding community.

3.5. This Process Safety Management (PSM) Program describes the management system for protecting people, property, and the environment from catastrophic releases of highly hazardous chemicals in the workplace. This is accomplished by systematically evaluating the process(es) using approaches to assess the effectiveness of the process design, technology, operations, maintenance, non-routine activities, procedures, emergency preparedness, training, and other process elements. These are described in more detail throughout this PSM program.

3.6. This PSM Program complies with OSHA standard 29 CFR 1910.119, Process Safety Management of Highly Hazardous Chemicals; Explosives and Blasting Agents issued on

3.7. February 24, 1992, and which became effective on May 26, 1992.

4. **Introduction**

4.1. The major objective of this Process Safety Management (PSM) program is to prevent unwanted releases of hazardous chemicals into locations which could expose employees and others to serious hazards including those in the surrounding community.

4.2. The PSM program involves a systematic approach to evaluating the entire process, including the design, technology, operation, maintenance, procedures, emergency plans, training programs, and other pertinent process elements. A proactive identification, evaluation and mitigation or prevention of chemical releases is utilized.

4.3. The necessary expertise, experience, judgment, and proactive initiative is provided within the line organization or obtained from outside resources as needed to assure an effective PSM program. There are continuing efforts to strengthen and improve the process safety knowledge and expertise within the line organization.

4.4. Alternative avenues of decreasing the risks associated with highly hazardous chemicals in the workplace are considered, including the reduction in the inventory of the highly hazardous chemicals, and dispersing hazardous chemical storage locations where one location will not cause a release in another location.

4.5. The PSM program describes how employees are involved in the programs, how process hazard analyses are conducted, preparation of operating procedures and practices, training, contractors, pre-startup safety, mechanical integrity, managing change, incident investigation, emergency preparedness, and compliance audits.

5. Process Safety Management System

5.1. The facility's process safety management system is a part of the facility's safety, health, and environmental program. The Central Safety and Health Committee (CSHC), chaired by the ranking manager, serve as the decision-making and policy-setting body. All department heads reporting to the ranking manager serve on the CSHC as members and chair safety and health task groups. There are usually eight task groups including:

5.1.1. Safety Activities

5.1.2. Rules and Procedures

5.1.3. Education and Training

5.1.4. Health and Environment Inspections and Audits

5.1.5. Fire and Emergency

5.1.6. Accident Investigation

5.1.7. Housekeeping

5.2. A brief description of the CSHC and each task group and how they are involved in the PSM program follows.

6. Central Safety and Health Committee

6.1. The CSHC meets monthly for about an hour to manage the overall safety, health, and environmental program. Group chairmen will report on his or her task group reviews, audits, findings, conclusions, and recommendations at each meeting.

6.2. CSHC task group meeting minutes are maintained. When recommendations are accepted, they are assigned to specific individuals for follow-up, for completion, and for resolving by specified time periods.

6.2.1. Task Groups

6.2.1.1. Each task group is composed of supervisory and employee members who represent their assigned departments. Usually there are an equal number of supervisors and employees on each task group. In some cases, task group members chair safety and health teams, such as one Inspections and Audits task group member chairing a Process Hazards Analysis (PHA) team. This team conducts and/or manages the PHAs.

6.2.2. Safety Activities

6.2.2.1. Task groups promote the overall safety, health, and environmental program to ensure that it effectively protects people, property, and the environment. Task groups help communicate the importance of the PSM program to employees and the surrounding community and solicit employee participation.

6.2.3. Rules and Procedures

6.2.3.1. The Rules and Procedures task group coordinates all facility safety rules and procedures to ensure that the rules and procedures are known, understood, and followed. They manage the preparation and maintenance of the rules and procedures including the PSM procedures and program information. Also, one member of the group serves on the process safety management compliance audit team.

6.2.4. Education and Training

6.2.4.1. This task group coordinates all facility safety, health, and environmental training programs to ensure high quality training and good comprehension. The PSM training programs are coordinated by this group, including management, supervisors, employees, and contractors.

6.2.5. Health and Environment

6.2.5.1. All facility health and environmental program activities are coordinated by this task group, including the hazard communication program, respiratory protection program, hearing conservation program, and bloodborne pathogens program. One member chairs an ergonomics team and another, an environmental team. The task group cooperates with the process hazards analysis team in conducting process analyses.

6.2.6. Inspections and Audits

6.2.6.1. This task group manages all facility safety, health, and environmental inspections, including OSHA required inspections and audits. They determine what should be inspected, when the inspections should be conducted, who should inspect, and how the inspections should be performed. One member of the task group chairs the Process Hazards Analysis (PHA) team. Details concerning the PHA team are provided following this section.

6.2.7. Fire and Emergency

6.2.7.1. The fire and emergency task group coordinates all facility emergency plans, including the Employee Emergency Action Plan, the Fire Prevention Plan, and emergency response. This group also manages the Emergency Preparedness requirements of the process safety management program.

6.2.8. Accident Investigation

6.2.8.1. All facility accident and incident investigations are managed by this task group. This group appoints a process incident investigative team. They also review all accident and incident reports, including process incident investigations.

6.2.9. Housekeeping

6.2.9.1. This task group coordinates all facility housekeeping activities, including routine audits. Recommendations for improving housekeeping and orderliness are made as needed.

6.2.10. Process Hazards Analysis (PHA) Team

6.2.10.1. The PHA team of the facility's Inspection and Audits task group conducts the required process hazard analyses per the OSHA Process Safety Management standard. The PHA team leader is a member of the Inspections and Audits task group and meets each month with the task group. When PHA team reports are completed, the team leader accompanies the Inspections and Audits task group.

6.3. Chairman to the CSHC meeting and presents a verbal report of the PHA findings, conclusions, and recommendations.

6.4. The PHA team leader is fully knowledgeable in the proper implementation of the PHA methodology used and is impartial in the evaluation. Other full and part-time team members provide the team with expertise in areas such as process technology, process design, operating procedures, and practices, including how the work is performed, alarms, emergency procedures, instrumentation, maintenance procedures, both routine and non-routine tasks, including how tasks are authorized, procurement of parts and supplies, safety and health, and other relevant subjects as needed. One team member must be familiar with the process being analyzed.

6.5. The PHA team has an intimate knowledge of the standards, codes, specifications, and regulations applicable to the process being analyzed.

6.6. See the Process Hazards Analysis Section of the Process Safety Management program for more details concerning PHA methodology.

6.7. Employee Participation

6.7.1. Employees participate in process safety management by serving on task groups and teams. Also, employees are consulted concerning the various aspects of the process safety management program.

7. **Process Safety Information**

7.1. A compilation of written process safety information is provided for each facility process to enable managers, supervisors, and employees to identify and understand the process hazards. This pertinent process safety information is also provided the process hazards analysis (PHA) Team. This information includes, but is not limited to:

7.1.1. Hazards of highly hazardous chemicals used and processed,

7.1.2. Process technology, and

7.1.3. Process equipment

7.2. Highly Hazardous Chemicals Information

7.2.1. Information pertaining to highly hazardous chemicals provided managers, supervisors, employees, and the PHA team includes, but not limited to:

7.2.1.1. Toxicity,

7.2.1.2. Permissible exposure limits,

7.2.1.3. Physical data,

7.2.1.4. Reactivity,

7.2.1.5. Thermal and chemical stability, and

7.2.1.6. Hazardous effects of inadvertent mixing of different materials.

7.2.2. Most of the above information is provided by Safety Data Sheets.

7.3. Process Technology Information

7.3.1. The process technology information provided to enable managers, supervisors, employees, and the PHA team to identify and understand the process hazards includes, but is not limited to:

7.3.1.1. Block flow diagrams or process flow diagrams,

7.3.1.2. Process chemistry, maximum intended inventory, safe upper and lower limits of temperature, pressure, flows, compositions, and

7.3.1.3. Evaluations of consequences of deviations, including those affecting employee safety and health.

7.3.2. In those cases where the original process technical data no longer exists, the data is developed during the initial PHA.

7.4. Process Equipment Information

7.4.1. Some of the process equipment information available to managers, supervision, employees, and the PHA team include, but is not limited to:

7.4.1.1. Materials of construction,

7.4.1.2. Piping and instrument diagrams,

7.4.1.3. Electrical classification,

7.4.1.4. Relief system design and design basis,

7.4.1.5. Ventilation system design, design codes and standards employed, material and energy balances for processes built after May 26, 1992, and

7.4.1.6. Safety systems (i.e., interlocks, detection, or suppression systems).

7.4.2. Documents are maintained showing that the process equipment complies with recognized and generally accepted good engineering practices. Also, documents are provided that show existing equipment designed and constructed in accordance with codes, standards, or practices that are no longer in general use, is designed, maintained, inspected, tested, and is operating in a safe manner.

7.4.3. Where process technology requires a design, which departs from applicable codes and standards, documents are provided which show that the design and construction is suitable for the intended purpose.

8. **Process Hazards Analysis (PHA)**

8.1. Process Hazards Analysis (PHA) is one of the most important elements of the Process Safety Management (PSM) program. It is an organized and systematic effort to identify and analyze the significance of potential hazards associated with the processing or handling of highly hazardous chemicals.

8.2. The PHA provides information to assist management and employees in making decisions for improving safety and reducing the consequences of unwanted and unplanned releases of hazardous chemicals. A PHA analyzes potential causes and consequences of fires, explosions, releases of toxic or flammable chemicals and major spills of hazardous chemicals.

8.3. Each PHA focuses attention on equipment, instrumentation, utilities, human actions (routine and non-routine), external factors that might impact the process. These considerations assist in determining the hazards and potential failure points or failure modes in processes.

8.4. PHAs are conducted initially and updated at least every 5 years. Each PHA is conducted appropriately for the complexity of the process being evaluated, and to properly identify, evaluate, and control the hazards involved.

8.5. The priority for conducting PHAs is determined and documented based on the:

8.5.1. Extent of process hazards,

8.5.2. Numbers of potentially affected employees,

8.5.3. Age of the process, and

8.5.4. Operating history of the process.

8.6. PHAs completed after May 26, 1987, which meet the requirements of OSHA standard 29 CFR 1910.119, will updated, and revalidated 5 years after the last analysis.

8.7. The PHA methodology utilized depends on many factors, including the existing process knowledge, operating experience, process changes, process size and complexity. One or more of the following methodologies may be used.

8.7.1. “What-if?” Method,

8.7.2. Checklist method,

8.7.3. A combination of “what-if?” And checklist methods,

8.7.4. Hazard and operability study (hazop),

8.7.5. Failure mode and effects analysis (fmea),

8.7.6. Fault tree analysis (fta), or

8.7.7. An appropriate equivalent methodology.

8.8. The application of a PHA to a particular process may involve the use of different methodologies for various parts of the process. For example, a process involving a series of unit operations of varying sizes, complexities, and ages may use different methodologies and PHA team members for each operation. When this is done, the PHA findings and conclusions are integrated into one final study and evaluation.

8.9. In some cases, a PHA checklist is used to perform PHA, such as for standard boiler or heat exchanger evaluations.

8.10. Generic PHAs are also used for batch type processes where there are only small changes of monomer or other ingredient ratios, and the chemistry is documented for the full range and ration of batch ingredients. Also, for large continuous processes having several different operations, some PHAs are conducted on each segment of the process and then integrated into one final report.

8.11. Each PHA addresses the following items:

8.11.1. Hazards of the process,

8.11.2. Previous incident(s) with catastrophic consequences,

8.11.3. Engineering and administrative controls including detection methodologies for early warning of releases such as process monitoring and control instrumentation with alarms, detection hardware, etc.

8.11.4. Consequences of failure of engineering and administrative controls,

8.11.5. Facility siting,

8.11.6. Human factors, and

8.11.7. Qualitative evaluation of a range of possible safety and health effects of failure of controls on employee's safety and health.

8.12. PHAs are performed by a PHA team with expertise in engineering and process operations, including at least one employee having experience and knowledge specific to the process being evaluated. Also, one team member must be knowledgeable in the specific process hazard analysis methodology used.

8.13. As previously addressed, the PHA team leader is a member of the Central Safety and Health Committee's Inspections and Audits task group. The team leader meets monthly with the Inspections and Audits task group and reports on the team's plans and progress.

8.14. The PHA team has the major responsibility for coordinating the overall facility Process Safety Management Program.

8.15. PHA Report Follow-up

8.15.1. All PHA reports are prepared by the PHA team, the ranking line manager of the process analyzed, the Inspections and Audits task group, and the Central Safety and Health Committee. The Central Safety and Health Committee (CSHC) chairman (ranking manager of the facility) assigns specific individuals to be responsible for completing and/or resolving all PHA report recommendations. The PHA team leader maintains a log of all recommendations and reports to the CSHC chairman monthly concerning the status of all unresolved recommendations.

8.15.2. The actions to be taken as the result of PHA report recommendations, including a schedule for completion, are communicated by the PHA team leader to the process managers involved, maintenance, and other employees whose work assignments are in the process and who may be affected by the recommendations or actions.

8.16. The PHAs are updated and revalidated by the PHA team at least every 5 years after completion of the initial PHA to assure that the PHA is consistent with the current process.

8.17. All PHAs and updates or re-validations are retained for the life of the process.

9. **Operating Procedures**

9.1. Operating procedures have been developed and implemented which describe tasks to be performed, dates to be recorded, operating conditions to be maintained, samples to be collected, and safety and health precautions to be taken.

9.2. The procedures are thoroughly reviewed and approved to ensure they are technically accurate. Employees assist in the preparation of the procedures and verify that they are understandable to employees. All operating procedures are routinely reviewed and revised as necessary to ensure they reflect current operations.

9.3. Process safety information compiled to assist in conducting process hazards analyses is also used as a resource for assuring the process operating procedures and practices are consistent with the known hazards and operating parameters are accurate.

9.4. The operating procedures are reviewed by the engineering staff and operating personnel to ensure they are accurate and provide practical instructions on how to perform jobs safely. Specific instructions and details are included in the operating procedures describing what steps are to be taken or followed, including applicable safety precautions and implications, pressure limits, temperature ranges, flow rates and what to do when the operating limits, ranges and rates are abnormal. Also, the actions needed to correct and/or control upset conditions are included in the procedures.

9.5. The training program ensures that operating personnel have a full understanding of the operating procedures including verification that workers not fluent in English understand the procedures.

9.6. All process and equipment changes are included as necessary in operating procedures and personnel trained to ensure they are properly informed of all pertinent changes. The operating procedures also include controls for maintenance personnel and contractors to enter the process area and to verify they have completed their authorized jobs.

10. **Employee Training**

10.1. All employees, including maintenance and contractor employees, involved with highly hazardous chemicals are trained to ensure they fully understand the safety and health hazards of the chemicals and processes they work with to protect themselves, and citizens living near the facility.

10.2. The training employees receive in compliance with OSHA's hazard communication standard 29 CFR 1910.1200 helps them become more knowledgeable about the chemicals they work with as well as familiarize them with reading and understanding SDSs. However, additional training is provided concerning operating procedures; safe work practices; emergency procedures including alarms, special assignments, evacuation, and emergency response; safety rules and procedures; routine and non-routine work authorization; and other pertinent process safety information.

The employees to be trained and the subjects to be covered have been defined and documented. Also, the training goals and objectives have been established and written in clear measurable terms. These training goals and objectives are tailored to each specific training module or segment. The important actions and conditions under which employees demonstrate competence and knowledge as well as acceptable performance have been described and documented.

10.3. Hands-on training is provided employees to enhance their senses beyond listening, including dry runs and simulated operations to help employees feel the full reality of the situation under controlled conditions.

10.4. Along with the hands-on training, employees receive traditional classroom instruction including lectures, videos, programmed instruction, and on-the-job instruction. Employees are encouraged to actively participate in all training activities and practice their skills and knowledge.

10.5. The training programs are periodically evaluated to see if the necessary skills, knowledge, and routines are being properly understood and implemented by the trained employees. The means/methods for evaluating the training programs have been developed and implemented including assigned responsibility and reports.

10.6. Any training program deficiencies detected during the evaluation are documented and recommendations made to correct them. Retraining or more frequent refresher training is provided as needed to ensure an effective training program. Each employee trained is requested to complete a training critique to obtain information on how to improve the training process. Also, trainees are consulted as to how to improve the training programs.

10.7. Maintenance and contract employees receive current and updated process safety training, including training about process changes which may affect their jobs. Responsibility is assigned for maintenance and contractor employee training and records maintained. They are also consulted about the effectiveness of their training programs.

11. **Contractors**

11.1. A screening process has been established for hiring contractors to perform work in and around processes that involve highly hazardous chemicals. The screening process is designed to ensure that the contractors hired or used can accomplish their assigned tasks without compromising the safety and health of employees at the facility. The screening program involves obtaining information on the contractor's safety performance, including injury and illness rates and experience. Also, contractor references are contracted concerning the contractor's safety performance.

11.2. In addition to reviewing the contractor's safety performance, the contractor's job skills, knowledge, and certifications (such as pressure vessel welders) are also reviewed.

11.3. A site injury and illness log are maintained for contractors working on or adjacent to processes to provide full knowledge of process injury and illness experience. This information is used by those auditing the process safety management program compliance and those investigating process incidents.

11.4. Workplace controls have been established to ensure that contractors perform their work safely. These controls specify that work permits are required for all contractor work on or adjacent to a process. The permit keeps all operating personnel and affects personnel informed concerning contractor work activities.

12. **Pre-Startup Safety**

12.1. Process hazard analyses (PHAs) are used for new processes to improve the design and construction of the process from a reliability and quality standpoint. The PHA recommendations are implemented before final installations are complete. Other items

completed prior to initial process startup include piping and instrument diagrams, operating procedures, and operating personnel trained.

12.2. The initial startup and normal operating procedures are fully evaluated as part of the pre-startup review to assure a safe transfer into the normal operating mode for meeting the process parameters.

12.3. Management of change procedures are required for changes to existing processes that have been shut down for turnaround or modifications. Also, all changes other than "replacement in kind" made to the process during shutdown go through the management of change procedures. Piping and instrument diagrams and operating procedures are updated as necessary following changes. Significant changes impacting the process result in refresher and/or additional employee training.

12.4. Incident investigations, compliance, audits, and PHA reports are evaluated to determine their impacts they may have prior to startup of new processes.

13. **Mechanical Integrity**

13.1. An on-going mechanical integrity program is used to ensure safe process operation. Reviews of maintenance programs and schedules are periodically conducted to see if only "breakdown" maintenance is being used. Where such is the case, corrections will be made. Equipment used to process, store, or handle highly hazardous chemicals are designed, constructed, installed, and maintained to minimize releases. To accomplish this, an effective mechanical integrity program has been established to ensure the continued integrity of process equipment.

13.2. The elements of the mechanical integrity program include the identification and categorization of equipment and instrumentation, inspections, and tests, testing and inspection frequencies, development of maintenance procedures, training of maintenance personnel, criteria for acceptable test results, documentation of test and inspection results, and documentation of manufacturer's recommendations as to the meantime for failure of equipment and instrumentation.

13.3. The priority for safe process equipment operation is:

13.3.1. Primary Lines of Defense

13.3.1.1. Operate and maintain the process as designed and keep chemicals contained.

13.3.1.2. Controlled release of chemicals through venting to scrubbers or flares, or to surge or overflow tanks which are designed to receive such chemicals, etc.

13.3.2. Secondary Lines of Defense

13.3.2.1. Fixed fire protection systems like sprinklers, water spray, or deluge systems, monitor guns, etc.; dikes, designed drainage systems, and other systems which would control or mitigate hazardous chemicals once an unwanted release occurs.

13.3.2.2. The mechanical integrity program protects the above lines of defense and ensures effective highly hazardous chemical control.

13.3.2.3. The mechanical integrity program includes the following stages:

13.3.2.3.1. A list of all process equipment and instrumentation has been compiled and categorized including:

13.3.2.3.1.1. Pressure vessels,

13.3.2.3.1.2. Storage tanks,

13.3.2.3.1.3. Process piping,

13.3.2.3.1.4. Relief and vent systems,

13.3.2.3.1.5. Fire protection systems components,

13.3.2.3.1.6. Emergency shutdown systems and alarms and interlocks, and

13.3.2.3.1.7. Pumps.

13.4. The equipment and instrumentation are categorized on a priority basis for items requiring closer scrutiny than other items. This priority and the manufacturer's data or operating experience determines the inspection and testing frequency and associated procedures.

13.5. Applicable codes and standards which provide information for the inspection and testing frequency and appropriate methodologies include:

13.5.1. National Boiler Inspection Code, or

13.5.2. American Society for Testing and Material,

13.5.3. American Petroleum Institute,

13.5.4. National Fire Protection Association,

13.5.5. American National Standards Institute,

13.5.6. American Society of Mechanical Engineers, and

13.5.7. Other groups.

13.6. Inspections

13.6.1. The applicable codes and standards are used to provide criteria for external inspections for such items as foundation supports, anchor bolts, concrete or steel supports, guy wires, nozzles and sprinklers, pipe hangers, grounding connections, protective coatings and insulation, and external metal surfaces of piping and vessels, etc.

13.6.2. These codes and standards also provide information on methodologies for internal inspection, and a frequency formula based on the corrosion rate of the materials of construction. The erosion of internal and external surfaces is considered along with

corrosion effects of pipes and values. When the corrosion rate is not known, a maximum inspection frequency is followed until the specific corrosion rate has been determined.

13.6.3. The internal inspection covers items such as vessel shell, bottom, and head; metallic linings; nonmetallic linings; thickness measurements for vessels piping; inspection for erosion; corrosion, cracking, and bulges; internal equipment like trays, baffles, sensors and screens for erosion, corrosion or cracking and other deficiencies.

13.6.4. Although some inspections may be performed by state and local government inspectors under state and local statutes, procedures have been established to ensure that tests and inspections are conducted properly, and consistency is maintained even when different employees may be involved.

13.7. Appropriate training is provided maintenance personnel to ensure they understand the preventative maintenance program procedures, safe practices, and the proper use and application of special equipment or unique tools that may be required.

13.8. A quality assurance system is provided to help ensure that the proper materials of construction are used, that fabrication and inspection procedures are proper, and that installation procedures recognize field installation concerns.

13.9. The quality assurance program is an essential part of the overall mechanical integrity program and helps maintain the primary and secondary lines of defense for preventing unwanted chemical releases or those which control or mitigate a release.

13.10. "As built" drawings, together with certifications of coded vessels and other equipment, and materials of construction are verified and retained in quality assurance documentation. Equipment installation jobs are inspected in the field for use of proper materials and procedures and to assure that qualified craftsmen are used. Also, the use of proper gaskets, packing, bolts, valves,

lubricants, and welding rods are verified in field inspections. The procedures for installation of safety devices are verified in the field, such as the torque on the bolts for rupture discs, uniform torque on flange bolts, proper installation of pump seals, etc.

13.11. Where the quality of parts is a problem, audits of equipment supplier's facilities are conducted to ensure the equipment is suitable for its intended service.

13.12. All necessary changes in process equipment go through the management of change procedures.

14. **Non-Routine Work Authorizations**

14.1. Non-routine work performed in process areas is controlled in a consistent manner. The hazards identified involving the work to be accomplished is communicated to those performing the work and to operating personnel whose work could affect the safety of the process.

14.2. A work permit procedure describes the steps the maintenance supervisor, contractor representative or other person needs to follow to obtain the necessary clearance to get the job started.

14.3. The procedure references and coordinates applicable are:

14.3.1. Lockout/tagout procedures,

14.3.2. Line breaking procedures,

14.3.3. Confined space entry procedures, and

14.3.4. Hot work authorizations.

15. **Managing Change**

15.1. Temporary and permanent changes to process chemicals, technology, equipment, and facilities are managed to ensure effective process safety management. This process safety management program describes the overall management system used to assure a safe and healthful workplace from process hazards. Management of change is part of the process safety management system. Both technical and mechanical changes must be authorized.

15.2. Process changes include all modifications to equipment, procedures, raw materials, and processing conditions other than "replacement in kind." The changes are identified, reviewed, and authorized prior to implementing the change. A Process Change Authorization is required for all changes to ensure the operating procedures contain the

15.3. operating parameters (pressure limits, temperature ranges, flow rates, etc.) and the importance of operating within the limits. See the following process change authorization form.

15.4. Management of change covers changes such as process technology changes, and changes to equipment and instrumentation. Changes in process technology requiring authorization include, but are not limited to, changes in production rates, raw materials, experimentation, equipment unavailability, new equipment, new product development, change in catalyst and changes in operating conditions to improve yield or quality.

15.5. Equipment changes requiring authorization include, but are not limited to, changes in materials of construction, equipment specifications, piping pre-arrangements, experimental equipment, computer program revisions, and changes in alarms and interlocks.

The process change authorization is not only used to assure that temporary and permanent changes can be accomplished safely, but to ensure that following the change that processes are returned to the normal operating state and original designed state. Also, the process change authorization assures that the pertinent safety and health considerations are incorporated into the operating procedures and the process.

15.6. All process change authorizations are filed for reference by PHA teams and others reviewing, evaluating, and/or inspecting processes.

16. **Incident Investigations**

16.1. Process incidents which result in, or could reasonably have resulted in, a catastrophic release of highly hazardous chemicals is investigated immediately, or no later than within 48 hours of the incident. This includes “near miss” incidents.

16.2. The purpose of these incident investigations is to identify the underlying causes of the incident and to implement corrective action to prevent similar incidents and avoid repeating past mistakes.

16.3. Following the investigation, a written report will be made. The report will contain at least the following components:

16.3.1. Incident date, time, and specific location.

16.3.2. The date when the investigation is initiated.

16.3.3. A description of the incident.

16.3.4. A list and description of factors that caused or contributed to the incident; and

16.3.5. Findings and recommendations for corrective and other actions identified by the investigation.

16.4. The Company will assist the host employer as required to promptly address incident report findings and recommendations. This includes resolving needs and recommendations. Resolutions, corrective, and any other actions will be documented.

16.5. All Company personnel whose work tasks are affected by investigation findings will review the written incident investigation report.

16.6. The Company will maintain its copy of the incident investigation report for a minimum of five years.

16.7. Investigation Team

16.7.1. An incident investigation team will be established and consist of at least one person knowledgeable in the process involved, including a contract employee if the incident involved work of the contractor, and other persons with appropriate knowledge and experience to thoroughly investigate and analyze the incident.

16.7.2. Process incidents are investigated by a process incident investigation team under the Accident Investigation task group. One task group member chairs the team and reports through the task group chairman to the ranking facility manager who chairs the Central Safety and Health Committee.

16.7.3. The process incident investigation team has received special training in process incident investigation, including how to conduct interviews and report preparation. Both management and employees are included as team members and is multidisciplinary.

16.7.4. One supervisor and one employee knowledgeable of the process is added to process incident investigation teams to ensure effective investigations. The team gathers the facts of the incident, analyzes them, and develops plausible scenarios as to what happened, and why.

16.7.5. Employees and supervisors in the process area where the incident occurred are consulted and interviewed to obtain incident facts. The focus of the investigation is to obtain facts and not to place blame. The team and the investigation process deal with all involved individuals in a fair, open, and consistent manner. An incident report is prepared following the investigation which includes the findings, conclusions, and recommendations. The written report which is to the ranking manager of the process involved is verbally reviewed with him or her prior to distribution.

16.7.6. Copies of the report are distributed to the ranking manager of the entire facility, the accident investigation task group, and other affected groups and individuals.

16.7.7. The process incident investigation team is responsible for assuring that all report recommendations are completed or resolved by those responsible for the follow-up. Monthly status reports are presented on incident recommendations at each Central Safety and Health Committee meeting by the chairman of the Accident Investigations task group.

17. **Emergency Preparedness**

17.1. The Fire and Emergency Task Group is responsible for assuring proper emergency preparedness and response, including what actions employees are to take when there is an unwanted release of highly hazardous chemicals.

17.2. Emergency Action and Fire Prevention Plans have been established that comply with OSHA standard 29 CFR 1910.38. These plans describe the actions employees must take in the event of an emergency. These actions may involve special emergency duties or evacuation. Refer to the Emergency Action and Fire Prevention plans for specific details.

17.3. The emergency action plan includes the prompt evacuation of employees due to an unwanted release of highly hazardous chemicals. This plan involves emergency alarms to alert employees when to evacuate. Prompt evacuation is essential, including physically impaired employees who are provided the necessary support and assistance. Also, the use of process control centers in process areas as safe areas is prohibited since they may have not been designed for safe refuge.

17.4. When unwanted releases of highly hazardous chemicals may occur outdoors, wind direction indicators have been placed at the highest point that can be seen throughout the process area. These indicators allow employees to move cross wind to upwind to gain safe access to refuge areas.

17.5. Minor emergency or incidental releases of unwanted highly hazardous chemicals in the process area are handled by highly trained, designated employees wearing appropriate personal protective equipment and following specific procedures. Preplanning for handling

incidental releases for minor emergencies in the process area has been accomplished, including hazard communication training per OSHA standard 29 CFR 1910.1200, emergency action and fire prevention plans per OSHA standard 29 CFR 1910.38, and emergency response per OSHA standard 29 CFR 1910.120.

17.6. The specific employee actions which must be taken for incidental and major unwanted releases of highly hazardous chemicals have been designated in the emergency action plan. Also, the required actions to obtain outside assistance from mutual aid groups or local government emergency response organizations have been defined in the emergency action plan.

17.7. The emergency action plan and fire prevention plan describe the emergency organization and command system, including an on-scene incident commander and staff. This fully trained organization has been properly equipped to carry out their assigned duties.

17.8. Drills, training exercises, and simulations with local community emergency response planners and responsible organizations have been conducted and are conducted on a periodic basis. This cooperation with local emergency agencies also assists in complying with EPA's Risk Management Plan Criteria.

17.9. An emergency control center has been established at the facility in a safe area away from the process area. This center serves as the major communication link between the on-scene incident commander and plant or corporate management as well as with local emergency organizations and officials. Communication equipment in the center includes a network for receiving and transmitting information by telephone, radio, or other means. A back-up communications network is provided in case of power failure, or one communications system fails.

17.10. The emergency control center is equipped with plant layout and community maps, utility drawings including firefighting water sources, emergency lighting, appropriate reference materials such as government agency notification lists, Company telephone lists, SARA Title III reports, safety data sheets, emergency plans and procedures manual, listing of local emergency response equipment, mutual aid information, and access to meteorological or weather condition data and dispersion modeling data.

18. **Compliance Audits**

18.1. The PHA team is responsible for assembling a compliance audit team to audit compliance with OSHA's process safety management standard 29 CFR 1910.119 at least every three years. Normally, the entire process hazards team plus a member of the rules and procedures task group not on the PHA team and the facility safety/health manager are assigned to the team. The chairman of the PHA team is the compliance audit team chairman unless he or she is responsible for the process(es) being audited to ensure compliance.

18.2. In that case, a person knowledgeable in audit techniques and who is impartial towards the facility area being audited is appointed chairman of the Inspection and Audits task group.

18.3. The audit includes an evaluation of the design and effectiveness of the process safety management system and a field inspection of the safety and health conditions and practices to ensure compliance. The essential elements of the audit program include:

18.3.1. Planning,

18.3.2. Staffing,

18.3.3. Conducting the audit,

18.3.4. Evaluation,

18.3.5. Recommendations,

18.3.6. Corrective action,

18.3.7. Follow-up, and

18.3.8. Documentation.

18.4. An OSHA standard 29 CFR 1910.119 process safety management check sheet is used by the audit team to conduct the audit. Also, a standardized form is used to document each audit step and ensure an effective audit is conducted and proper follow-up is accomplished. All team members and their expertise are listed. If the needed expertise is not available, it is obtained prior to conducting the audit. The standardized audit form includes:

18.4.1. Process description and documentation,

18.4.2. Process safety information,

18.4.3. Training,

18.4.4. Procedures,

18.4.5. Physical inspection of the facility,

18.4.6. Work authorizations,

18.4.7. Interviews with all levels of facility personnel,

18.4.8. Findings,

18.4.9. Conclusions,

18.4.10. Recommendations, and

18.4.11. Follow-up.

18.5. The compliance audit team issues the final audit report to the chairman of the PHA team with copies to the Inspections and Audits task group chairman and the chairman of the Central Safety and Health Committee who is the ranking facility manager. The audit team is responsible for ensuring that all report recommendations are completed or resolved. Written monthly progress reports are issued to the Inspections and Audits task group

chairman who gives monthly status reports to the Central Safety and Health Committee until all items are resolved.

18.6. All affected persons and groups are informed of the audit findings, conclusions, and recommendations. The Central Safety and Health Committee chairman assigns specific responsibility for follow-up including revision of the process safety management program, revised operating procedures, improved training, etc. The PHA team has the overall responsibility to ensure that the necessary actions are taken to maintain an effective process safety management program.

19. **Safety and Health Hazard Control Team**

19.1. Effective safety and health programs prevent accidents, injuries and illnesses through proper recognition, evaluation and control of safety and health hazards. Emphasis is placed on prevention, not after-the-fact accident investigation. Thus, products, processes, workplaces, and environments must be made safe through design. To ensure proper safety and health engineering controls, each organization and facility should establish and maintain effective safety and health hazard control teams.

19.2. Accidents are costly for organizations and individuals. Correcting safety and health problems after an accident occurs is expensive. A proactive approach must be taken to eliminate and/or control safety and health hazards before accidents, injuries and/or illnesses occur. The Safety and Health Hazard Control Team can help accomplish this objective.

19.3. The purpose of the team is to recognize, evaluate and control safety and health hazards before they cause accidents, damage, injuries and/or illnesses.

19.3.1. The following priority is utilized to control recognized safety and health hazards.

19.3.1.1. Eliminate hazards by substitution or engineering controls

19.3.1.2. Reduce the risks when hazards cannot be eliminated by substitution, employee rotation, or limited exposure

19.3.1.3. Provide safety devices (guards, interlocks, etc.)

19.3.1.4. Provide warning signs, placards, or tags

19.3.1.5. Provide procedures, education and training, and protective equipment

19.3.1.6. Assure that procedures are feasible, that they can be followed, and the job can still be done

19.3.1.7. Enforce safety rules and procedures

19.4. The Safety and Health Hazard Control (SHHC) Team is chaired by a facility manager or supervisor with strong engineering knowledge and experience. He or she is a member of the Inspections and Audits Task Group of the Central Safety and Health Committee.

19.5. Members of the SHHC Team include at least one representative from each major department within the facility including staff, supervisors, and employees.

19.6. The SHHC Team meets monthly for about 45 minutes to plan their activities and report on their findings, conclusions, and recommendations. Minutes are kept and provided to the Inspections and Audits Task Group Chairman.

19.7. The following activities are some of the many things the team considers:

19.7.1. New Facilities, Processes and Equipment -- The team develops implements and maintains effective procedures for performing safety and health evaluations of new facilities, processes, and equipment.

19.7.2. Modified Facilities, Processes and Equipment -- The team develops implements and maintains effective procedures for reviewing potential safety and health hazards associated with modified or revised facilities, processes, and equipment.

19.7.3. Accident/Incident Analysis -- The team develops implements and maintains effective procedures for analyzing accidents and/or incidents which involve basic design (engineering) defects. These procedures are developed in cooperation with the Accident Investigation Task Group.

19.7.4. Process Hazard Analyses -- The team develops implements and maintains effective procedures and systems for performing periodic (usually annual) process hazard analyses of all major facility processes. Written process hazard analysis reports are presented to the Inspections and Audits Task Group Chairman and to the Central Safety and Health Committee.

19.8. Responsibilities

19.8.1. Each SHHC Team member is given a specific assignment (activity) to coordinate. He or she obtains assistance from other facility supervisors and employees in effectively coordinating the assignment.

19.9. Staff Assistance

19.9.1. The facility staff safety and health manager, supervisor and/or coordinator meets with the Team and helps as needed to ensure the Team has the necessary resources.

19.10. Trade Secrets

19.10.1. From the applicable OSHA regulations on Process Safety management, FYI:

19.10.1.1. "Employers will make all information necessary to comply with the section available to those persons responsible for compiling the process safety information (required by paragraph (d) of this section), those assisting in the development of the process hazard analysis (required by paragraph (e) of this section), those responsible for developing the operating procedures (required by paragraph (f) of this section), and those involved in incident investigations (required by paragraph (m) of this section), emergency planning and response (paragraph (n) of this section) and compliance audits (paragraph (o) of this section) without regard to possible trade secret status of such information."

19.10.1.2. Nothing in this paragraph will preclude the employer from requiring the persons to whom the information is made available under paragraph (p)(1) of this section to enter into confidentiality agreements not to disclose the information as set forth in 29 CFR 1910.1200.

Reports Section

General

To continue meeting the needs of our clients, we have attached below any applicable forms that should to be utilized, if the client does not have the necessary forms in place.

- These forms are not to replace any forms that each specific client already has in place.
- These forms outline what Global Inspection Services deems to be a minimum of documentation that should be utilized during the specific activities in which each was designed for.
- If one of these forms is utilized, a copy of each form should be included in your job book.
- A completed copy of each of these forms should be readily available onsite when activities are ongoing.

Lock Out / Tag Out Report:

- This report should be utilized anytime a lockout/tagout circumstance should arise.

Job Safety Assessment (JSA)

- This report should be utilized every day as part of the daily tailgate process, to mitigate any potential hazards for each specific task that is being performed.
- If multiple tasks are being performed, a JSA for each task must be completed.
- Additional personnel arriving onsite, after the safety meeting, must also be included in the JSA process.

Hot Work Permit

- This form should be utilized if you are performing any work on or near “in service” pipelines or facilities.
- Everyone associated with the task must be aware of this document and acknowledge the sign in sheet.

Excavation Safety Inspection Checklist

- This form must be completed if any employee must enter the trench more than 4 ft.
- This form must be acknowledged by a competent person.

Confined Space Entry Permit

- This form must be completed if any employee must enter any type of confined space.
- All GIS employees are discouraged to enter any type of confined space.

Accident/Incident Notification Report

- All employees must fill out an Incident Notification form in the event of ANY type of incident and turn into the GIS office.
- Please notify us immediately once the incident scene has been secured.

Behavior Based Safety Observation Checklist:

- This report should be utilized daily to document both safe and unsafe practices.
- Actual observations cards will be mailed to you along with your initial welcoming package.

Lock Out / Tag Out (LOTO) Procedure Form

AFE #: **Client:**

Description of Machine/Equipment or Work: _____

Location: _____ **Site #:** _____

Start Date: _____ **End Date:** _____

Lock #	Employee Name	Start Date/Signature	End Date/Signature

Equipment	
Location and Type of Energy Sources	
Electrical	
Mechanical	
Pneumatic	
Hydraulic	
Gravity	
Heat	
Chemical	
Other:	

Lock Out/Tag Out (LOTO) Devices

(I.e. Locks, Chains, Clamps, etc.)

The following steps need to be performed to safely place, remove and transfer LOTO devices to energy isolating devices:

1. Notify all affected personnel (operators of machine equipment, etc.) that LOTO procedures will be in effect.
2. Notify affected entities if services are to be interrupted
3. Identify & isolate energy sources
4. Lock and tag
5. Test the controls
6. Perform the work
7. Remove locks and tags

Re-Energizing Equipment/Machine

Before start-up of machine/equipment after servicing, complete the following steps:

1. Make sure machine/equipment is in good working order.
2. Notify all affected personnel that LOTO devices are being removed from equipment/machinery and all personnel are safely positioned away from the equipment/machinery.

3. Check for and retrieve all loose tools, equipment/machine parts. Reinstall all removed equipment/machine guards.
4. Remove all LOTO devices from energy isolating devices.
5. Operate the energy isolating devices to restore energy to the equipment/machine.

Job Safety Assessment (JSA)

Client:		
Description on Work		
Location:	Date:	Job Number:
Description of Work:		
Work Restrictions:		
Company Performing Work:	Foreman/Supervisor (Print)	Signature:
Notification		
The effects of this job on/by neighboring equipment and public considered. Yes ☐ No ☐		
☐ Pre-Job Safety Meeting held with all crew member ☐ Job Procedure Review ☐ Responsibility Review		
Hazard Exposure Assessment		

Rate the potential hazards as N = None; L = Low; M = Medium; H = High for the following exposures:		
☐ Falling or dropped objects	☐ Hot metal	☐ Welding
☐ Flying dust or particles	☐ Exposed energized electrical parts	☐ Loud noise
☐ Pressure water spray	☐ Contact with sharp edges	☐ Moving machinery
☐ Petroleum liquids	☐ Confined Space	☐ Heavy equipment
☐ Flammable vapors	☐ Excavations	☐ Static electricity

☐ Oxygen deficiency	☐ Contact with other chemicals	☐ Confined space
☐ Suspended loads	☐ Unstable footing	☐ Vehicle traffic
☐ Compressed gas cylinders	☐ Adverse weather	☐ Deep/swift water
☐ Radiation / X-ray	☐ Slippery / Muddy footing	☐ Elevated work > 6 ft.
☐ Temperature extremes (Hot/Cold)	☐ Wildlife / Poison plants	☐ Inadequate lighting
☐ Other	☐ Other	☐ Other

Personal Protective and/or Emergency Equipment

Basic Protection: Natural Fiber Clothing Hard Hat Safety Footwear Appropriate Work Gloves

Place an X by required PPE or emergency equipment

☐ Goggles or Safety Goggles	☐ Ladders	☐ Welding helmet/spark resistant clothes
☐ Face Shield	☐ Heat of cold resistant gloves	☐ Hearing protection
☐ Half-mask air-purifying respirator	☐ Gas Monitor	☐ Body harness / Fall protection
☐ Full-face air-purifying respirator	☐ Disposable coveralls	☐ Lifeline and lifting equipment
☐ Air-supplied respirator or SCBA	☐ First Aid Kits	☐ Traffic visibility vest
☐ Air-supplied abrasive blasting hood	☐ Rubber boots	☐ Personal flotation device
☐ Tag lines	☐ Fire retardant coveralls	☐ Lighting / Generators
☐ Fire extinguisher(s)	☐ Rain gear / Weather radios	☐ Bonding
☐ Absorbent materials / Containers	☐ Safety fencing	☐ Other

Hazards have been evaluated, needed PPE and emergency equipment is on site and the information has been communicated to all affected employees.

Authorized by: _____ Date: _____ Time: _____

Hot Work Permit

Date: Start time: End time:	Hot Work being done by: Contractor (name): _____
Exact location of work: (to be given to Emergency Response in case of emergency)	
Description of work:	

Pre-Work Checklist: (Note: Each site is analyzed for specific hazards)

Make special consideration in "Notes" section at bottom of this form.

Hot Work is necessary?	(Y) (N) (N/A)	Has area been secured?	(Y) (N) (N/A)
Hazardous materials, byproduct info & SDS available?	(Y) (N) (N/A)	Has welder certification been verified and Hot Work equip in good repair?	(Y) (N) (N/A)
Have affected parties/operations been alerted?	(Y) (N) (N/A)	Has Fire-watch been selected? Name(s):	(Y) (N) (N/A)
Fire suppression equipment on site and operable? (List type and size) **Fire Watch Attendants Name(s):** **_____**			(Y) (N) (N/A)
Have openings, cracks, and holes where sparks may drop to combustible materials or persons below been identified and controlled?			(Y) (N) (N/A)
Have precautions been taken where heated components could transmit heat by radiation or conduction to unobserved combustibles?			(Y) (N) (N/A)
Have all combustibles/flammables in area been taken into consideration and have these items been shielded, moved, wet down or Hot Work scheduled around their production?			(Y) (N) (N/A)

Have all energy sources, including cathodic protection, been de-energized and locked /tagged out?	(Y) (N) (N/A)
Have all lines been depressurized, purged, capped, blinded, or pointed away from the work area and has equipment been thoroughly purged and proper ventilation initiated?	(Y) (N) (N/A)

Personal Protective Equipment: (Note: Hazard Assessment completed for each type of PPE required)			
Hard hat, safety shoes, and safety glasses?	(Y) (N) (N/A)	Fire-retardant clothing?	(Y) (N) (N/A)
Goggles and face shield?	(Y) (N) (N/A)	Other (list)	

Gas Detection	Model:	Serial No:	Date calibrated:

Test	Allowable limits	Time	Time	Time	Time	Time
Oxygen	19.5-23.5%					
Hydrocarbons	< 0-5% LEL					
Hydrogen sulfide	< 10 ppm					
Other						

EXCAVATION SAFETY INSPECTION CHECKLIST

NOTE: Inspections of excavation and protective systems by the competent person are required as follows: daily before entry prior to the start of the shift; as dictated by the work being performed in the trench; after a rainstorm or other events such as snowstorm, windstorm, thaw, earthquake or any dramatic changes in the weather; whenever fissures, tension cracks, sloughing, undercutting, water-seepage, bulging at the bottom or other similar conditions exist; whenever there is a change in size, location or placement of the spoil pile and/or whenever there is an indication of a change or movement in adjacent structures.

Inspection Date: _____ Job Number_____

Client:
_____Contractor_____

Excavation
Location_____

Depth_____Feet, Soil Type: Stable Rock, Class A, Class B, Class C

NOTE: If the depth is more than 20 feet, a Registered Professional Engineer must provide the design for the protective system.

Inspections Completed: Visual _____, (See back of form and document visual test(s) performed, visual tests 1 - 7.)

Inspections Completed: Handbook _____, (See back of form and document handbook test(s) performed, handbook tests 1 - 5c.)

NOTE: The soil classification shall be made by the competent person based on at least one visual and at least one handbook test.

Slope Ratio (H:V): Stable Rock = 90º. ___, Class A = 3/4:1 (53º) ___, Class B = 1:1 (45º) ___, Class C = 1 1/2:1 (34º) ___

Has the area been checked for foreign pipelines, cables, or obstructions? Y__, N__.

Have all the ONE CALLS been made and all affected pipelines operators / companies contacted? Y___, N___.

Atmospheric Check: Oxy. (19.5%-23.5%) _____, LEL (<10%) _____, CO (<25ppm) _____, H2S (<10ppm) ____

Trench Shields: Certification Papers on site? Y___, N___, Size: Length_____ft. Width_____ft., Height_____

Trench Shield Serial Number: _____ Multiple Shields? Y___, N___, Stackers? Y___, N___

Additional trench shield serial numbers and sizes listed on an attachment to this checklist. Y___, N___

Trench shield properly backfilled? Y__, N__

Backfill of trench shield provides at least 18" of freeboard from top of box to backfill? Y___, N___

Are spoil piles at least 2 feet from edge of excavation? Y___, N___.

Is spoil pile sloped away from excavation at same angle as excavation? Y___, N___.

Are barricades, stop logs, etc. if needed, properly placed? Y___, N___.

Are trench walls and bottom of excavation free of?

Water seepage/accumulation Y___, N___. If yes, are pumps in place to control? Y__, N__.

Shrinkage cracks Y___, N___.

Caving off or sloughing Y___, N___.

Significant fracture planes? Y___, N___.

In excavations 4’ or deeper, are ramps or ladders provided within 25 feet of lateral travel of the workers? Y__, N__.

Are the ladders secured? Y__, N__. Do they extend at least 3’ above surface? Y__, N__.

Is the traffic in area adequately controlled? Y__, N__.

If the excavation is to remain open, have arrangements been made to erect safety fencing? Y__, N__.

Are there sources of vibration from heavy equipment, road traffic, trains or other(s) that will affect the excavation? Y____, N_____.

If other sources of vibration, list here.
_____.

Competent Person
Signature_____

Type A Soil means cohesive soils with an unconfined compressive strength of 1.5 tsf or greater. Examples of cohesive soils are clay, silty clay, sandy clay, clay loam and, in some cases, silty clay loam and sandy clay loam. Cemented soils such as caliche and hardpan are also considered Type A.

The STOP™ Observation Checklist

Actions

Unsafe Reactions of People — All Safe ☐

- Adjusting Personal Protective Equipment
- Changing Position
- Rearranging Job
- Stopping Job
- Attaching Grounds
- Performing Lockouts

Positions of People — All Safe ☐

Injury Causes

- Striking Against or Being Struck by Objects
- Caught In, On, or Between Objects
- Falling
- Contacting Temperature Extremes
- Contacting Electric Current
- Inhaling, Absorbing, or Swallowing a

Safe Unsafe Personal Protective Equipment — All Safe ☐

Head-to-Toe Check

- Head
- Eyes and Face
- Ears
- Respiratory System
- Arms and Hands
- Trunk
- Legs and Feet

Tools and Equipment — All Safe ☐

- Right for the Job
- Used Correctly
- In Safe Condition

Procedures — All Safe ☐

- Available
- Adequate
- Known
- Understood
- Followed

The STOP™ Observation Checklist

ELIMINATE UNSAFE CONDITIONS... PREVENT INJURIES

Conditions

Unsafe **Safe**

Are They

- Right for the Job
- In Safe Condition

Are They

- Clean
- Orderly
- Right for the Job
- In Safe Condition

Is It

- Clean
- Orderly
- In Safe Condition

Standards

- Available
- Adequate

Safe acts observed

Unsafe acts observed

Name

Date

Site

Area

Shift

Time spent on observation
# of People Contacted

# of People Observed

Respiratory Protection

The purpose of this program is to protect the health and safety of Global Inspection Services employees who may be exposed to hazardous atmospheres while working, and to provide the appropriate protection from these hazards without creating new hazards. This program provides information and guidance for the proper selection, use, and care of respirators, and contains requirements for establishing and maintaining a respirator program.

The program applies to all Global Inspection Services employees who need to wear a respirator to perform assigned duties.

Roles and Responsibilities

1. **Respirator Administrator**

a) Is responsible for the Respiratory Protection Program: including the implementation of the program, the monitoring of respiratory hazards, maintaining records and conducting program evaluations. The Respirator Administrator is responsible for supervising the execution of this program at all levels.
b) Has knowledge about respiratory protection and maintains an awareness of current regulatory requirements and good practices.
c) Approves job-specific Respiratory Protection Programs for each operation that involves the use of respirators.
d) Approves respiratory training programs for employees.
e) Approves fit test procedures for employees.
f) Approves respirator makes and models for use at each worksite.
g) Ensures that employees using respirators have appropriate surveillance and that employees leave the work area to wash, change cartridges, or if they detect a break-through or encounter breathing resistance.
h) The effectiveness of this program shall be monitored by surveying our employees about their experiences with fit, selection, maintenance, etc. of our respirators while they are employed with our company.
i) Ensure that employees have the compulsory training, fit testing, and medical clearances necessary before authorizing them to wear a respirator.
j) Prohibit any employee with lapsed or incomplete respirator clearances to work in hazardous atmospheres. Enforce any restrictions imposed by the occupational physician on individual employees, including the need for corrective lenses.

2. **Supervisors**

a) Must hold a safety meeting on respiratory protection issues at the start of each new project or task that involves respiratory hazards for affected employees under their supervision.
b) Is responsible for enforcing the written Respiratory Protection Program and Worksite Specific Respiratory Protection Plan that has been approved and implemented by Respirator Administrator, or designee. All respirator use must comply with the written programs in effect at the jobsite.

c) Record any complaints related to respirator usage, act promptly to investigate the complaints, correct any hazards, and get medical assistance when indicated. Report all first aid and/or medical treatment administered on a jobsite. Report every respirator-related incident to the Respirator Administrator before the end of the work shift.
d) Physically check each respirator prior to its assignment to their employees to be sure that it is of the type specified in the written plan.
e) Inform each affected employee of the results of exposure monitoring within one day of receiving such results and assure inclusion of all exposure reports in the Global Inspection Services and/or specific site record keeping system.
f) Monitor employee compliance with the respirator program requirements.

3. Employees

a) Use respiratory protection in accordance with the instructions and training provided.
b) Immediately report any defects in the respiratory protection equipment and whenever there is a respirator malfunction, immediately evacuate to a safe area and report the malfunction.
c) Promptly report to the supervisor any symptoms of illness that may be related to respirator usage or exposure to hazardous atmospheres.
d) Report any health concerns related to respirator use or changes in health status to the occupational physician. Wash their assigned reusable respirators at the end of each work shift when used and disinfects assigned respirators at least weekly.
e) Store respirators in accordance with instructions received.
f) Observe and enforce any restrictions placed on employee work activities by the occupational physician.
g) Be clean-shaven in all facial areas that seal to the respirator face piece.
h) Do not allow headpieces, Band-Aids or other items beneath a respirator seal or head strap assembly.
i) Inspect the respirator immediately before each use, in accordance with training provided.
j) Perform a user seal, negative and positive respirator fit check each time a respirator is donned in accordance with training provided.
k) Glasses, facial hair, or anything that could affect the face piece seal are prohibited.

4. Respiratory Protection Program and Worksite-Specific Respiratory Protection Plan

a) Each operation that involves respirator use shall have a Worksite Specific Respiratory Protection Plan that is approved and signed by Respirator Administrator and job supervisor.
b) This plan, which may be a part of a job hazard analysis, site safety plan, confined space entry permit or other document, shall contain an identification of the atmospheric hazard(s) and the respective measured or expected concentration(s) at each location or operation, the respective allowable concentration limits, the type of respirator(s) approved, monitoring requirements,
c) emergency response procedures, and limitations, such as the frequency of respirator cartridge change out

d) This document shall be updated annually and/or more frequently if conditions change. This Worksite Specific Respiratory Protection Plan shall be available at the job location and shall be maintained for 30 years as an exposure record.

5. Recognition and Evaluation of Airborne Contaminants

a) The Client, Corporate Safety Director, Supervisor, or other designee shall initially perform a hazard assessment in each workplace. Where the presence or potential presence of airborne contaminants is recognized or suspected, the above evaluator shall perform evaluations to determine if allowable limits are exceeded or potentially exceeded. The results of the hazard assessment shall be communicated to the Project Manager and affected supervisors and employees. A written record of this assessment, including identification of the work area, the name of the assessor and the date of the assessment, shall be maintained for a period of 30 years if atmospheric hazards were identified. This file shall be maintained in the office of Safety Director.
b) For workplaces in which the hazard assessment produces no findings of potential exposures, Supervisors shall monitor the workplace and request a hazard assessment whenever materials or processes change.
c) Whenever the hazard assessment identifies potential exposures to hazardous atmospheres, an annual reassessment shall be performed, unless OSHA requires a more frequent assessment. In addition, the Supervisor is responsible for requesting a reassessment whenever materials or processes change.

Selection and Issuance of Respirators

a) Selection of the appropriate respirator shall be documented in the written Worksite Specific Respiratory Protection Plan. If the atmosphere is uncharacterized, it must be assumed to be IDLH and a positive pressure SCBA or combination supplied air respirator with SCBA must be worn. Respirator selection shall comply with OSHA requirements for specific substances, such as asbestos, lead, etc. At a minimum, the assigned protection factor of the selectee's respirator shall be equal or exceed the hazard ratio.
b) All respirators used by Global Inspection Services shall be approved by NIOSH. No components shall be substituted unless they are approved by NIOSH.
c) Any change or modification to a respirator may void the respirator approval and may adversely affect its performance. Refer to the table "Listing of Approved Respirators" for assistance in selecting the proper respirator.
d) Any restrictions or limitations recommended for a particular respirator by the respirator manufacturer shall be observed.
e) The Respirator Technician or other appointed person/outsource company shall inspect each respirator or component prior to issuance and shall assure that the respirator assembly is complete, sanitary and in good working order upon issuance. Atmosphere supplying respirators shall be returned to the Respirator Technician or other appointed person/outsource company at least monthly for periodic inspection and air-purifying respirators shall be returned for periodic inspection at least semi-annually. A log shall be maintained of these periodic inspections.

f) Global Inspection Services shall provide employees using atmosphere-supplying respirators (supplied-air and SCBA) with breathing gases of high purity and shall require third-party providers of breathing air to certify that:

   i. Compressed breathing air meets at least the requirements for Grade D breathing air described in ANSI/Compressed Gas Association Commodity Specification for Air, G-7.1-1989, to include:

   ii. Oxygen content (v/v) of 19.5-23.5%.

   iii. Hydrocarbon (condensed) content of 5 milligrams per cubic meter of air or less.

   iv. Carbon monoxide (CO) content of 10 ppm or less.

   v. Carbon dioxide content of 1,000 ppm or less; and

   vi. Lack of noticeable odor.

g) Supervisors are responsible to ensure that each respirator user under their supervision is currently approved for respirator use, including medical, fit testing and training certifications. Employees with expired certifications shall not be permitted to work in hazardous atmospheres or to voluntarily wear a respirator until their lapsed requirements are updated.

h) Each respirator must be inspected by its wearer immediately prior to each use, according to instructions provided in the respirator training. Any defects shall be reported to the Supervisor before entry into a hazardous atmosphere. The wearer, immediately prior to entering the hazardous atmosphere, shall perform a user seal check.

i) Global Inspection Services will provide an appropriate spectacle kit to each respirator wearer who requires corrective lenses and will pay for prescription safety lenses for the kit initially and as needed. The employee in hazardous atmospheres with negative pressure and positive pressure respirators in written communication to the Global Inspection Services Respirator Administrator shall permit contact lenses if the employee's ophthalmologist or optometrist authorizes their use.

j) Employees who are issued a respirator are responsible for its maintenance, daily inspection, and storage while the unit is in their control.

k) Respirators and all associated costs related to maintaining them shall be borne by the employer.

NOTE: All work environments will be evaluated for respiratory hazards. In the absence of analytical data establishing the amount of airborne contaminants, all atmospheres will be considered IDLH.

Potential Airborne Contaminants and Corresponding Protection

Atmospheric Hazard	Work Activity	Concentration	Respirator	End of Service Life
Metal Dusts	Machining, Grinding	<50mg/m3	Filtering Face piece	8 hours
Acid Gas	Escape	IDLH	3M 8710 90AG Scott Escape Mouth Bite with Acid Gas Cartridge	NA
Ammonia	Escape	IDLH	3M 6200Half Face Mask with 6004 Ammonia -Methylamine Cartridge	NA
Misc.	Escape	IDLH	Scott SCBA	30 Minutes
Hydrogen Sulfide	Mechanical Services	IDLH	3M AV 2000 Full Face Supplied Air	30 Minutes with 5 Minute Escape

Fit Testing

1. Each respirator wearer shall be qualitatively (QLFT) and quantitatively (QNFT) fit tested at least annually, using protocols approved by the Respirator Administrator. More frequent testing shall be performed if required by OSHA regulations for specific substances or if the wearer's facial contours change, such as by weight gain or loss, facial surgery, etc.
2. On the occasion of each fit test, employees may choose their respirator from an array of at least five face pieces from different manufacturers and sizes approved by the Respirator Administrator.
3. Fit test certification shall be prepared and signed by the person performing the fit test and must name the tested employee; the make, model and size of the respirator fit tested; and the result of the fit test. A copy shall be provided to the Supervisor.
4. Global Inspection Services shall pay for all required fit tests.

Rigging Material Handling

Different types of hoisting and rigging devices and lifting equipment may be used for lifting, pulling, and moving equipment. Only qualified individuals shall operate these devices. The safety rules and guidance in this program apply to all operations at Global Inspection Services that involve the use of wire rope, slings, chains, and lifting equipment such as cranes, track hoes, backhoes, side booms and forklifts etc.…

Employee Responsibilities

Supervisors are responsible for:

- Ensuring that employees under their supervision receive the required training and are competent in the use of equipment using wire rope and cable in their areas.
- Providing training for prospective operators to prevent property damage and injury.
- Evaluating trainees using the equipment and competency testing.
- Ensuring the equipment is inspected and tested monthly by a responsible individual and that rigging equipment is inspected monthly as well and prior to use.

Equipment Operators are responsible for:

- Operating lifting and pulling equipment safely
- Conducting functional tests prior to using the equipment
- Selecting and using rigging equipment appropriately
- Selecting the proper lifting device
- Properly storing all rigging to prevent damage
- Determining the sling capacity
- Learning sling configurations
- Identifying and evaluating sling deterioration
- Determining the proper size for slings and components
- Not using manila rope for rigging
- Making sure that shackle pins and shouldered eyebolts are installed in accordance with the manufacturer's recommendations
- Making sure that ordinary (shoulder less) eyebolts are threaded in at least 1.5 times the bolt diameter
- Using safety hoist rings (swivel eyes) as a preferred substitute for eye bolts wherever possible
- Padding sharp edges to protect slings

General Safety Rules

At the start of each work shift, operators shall do the following steps before using equipment having wire rope slings and/or cables attached to them:

- Visually inspect the wire rope, eyes, and sockets as much as possible; in most instances, this will be done at the work site before starting the job.

- Never overload the lifting equipment or rigging—load capacities must be posted.
- Make certain there are no obstructions between the equipment and where the rope is attached.
- Make certain the pickup line is operating smoothly by lifting the equipment up and downward to verify that the line is in the sheave groove.
- Plan and check the travel path to avoid personnel and obstructions.
- Defective cables and slings shall be tagged out of service until properly repaired or disposed of. Disposal will consist of destruction of defective equipment. The consultant shall initiate corrective action by notifying the company Safety Officer.

Wire rope slings with

- Kinking, crushing, bird-caging, or other distortions
- Evidence of heat damage
- Cracks, deformation, or worn end attachments.
- Six randomly broken wires in a single rope lay
- Three broken wires in one strand of rope

Note: Rotation resistant rope has different strand break requirements; therefore, follow the manufacturer's requirements.

Alloy steel chain slings with

- Cracked, bent, or elongated links or components.
- Cracked hooks, shackles, eyebolts, turnbuckles, or other components that are damaged or deformed.

Personnel Precautions

- Personnel:
- Must be in the clear at all times
- Must not walk, stand, or work under suspended loads.

Each person participating in the operation must

- BE ALERT!!
- Watch the crane block, sling, and load, and
- Be able to move freely, if necessary.
- Never ride on a load that is being hoisted.

Operating Hoisting Equipment

A load must not be left hanging on the hoist any longer than necessary. When possible, use a hoist or crane to lift a heavy load, and always rig the hoist down and secure it after the work is completed.

While operating hoisting equipment, never place a part of the machine or load within twenty feet, either laterally or vertically, of an energized power line. (See Power Line Restrictions) Never use hoisting equipment for lifting personnel, unless the equipment is certified, designed, and rated for that purpose. Personnel lifts must be accompanied by completing test and trial lifts per ANSI and OSHA standards.

Load Capacity

The manufacturer's maximum load specification for the hoist must be noted on the hoist. All operators of cranes, cherry pickers, and other lifting equipment must know the load capacities of the equipment they are operating; operators are forbidden to exceed the capacities of their equipment. Capacity charts, operating speeds and hazard signs must be posted by the controls so the operator can see them clearly.

Load tests are to be performed by the company Safety Personnel, and the written reports and records of these tests are to be maintained. In addition, written reports are to include the testing procedures used and documentation of any repairs made.

Boom angle indicators must be permanently attached to the boom and functioning properly. Indicators must show the operating angle and corresponding radius.

Never overload the hoist by trying to lift objects that are heavier than the equipment is rated to lift, or by overextending the length of the boom.

Tag Lines

When safe to do so, proper length tag lines must be used to control loads. Before a hook is moved, personnel using tag lines must inspect the lines for knots. Tag lines must not be wrapped around the employee's hand or wrist. The operator, signal person, and load handlers are responsible for ensuring that the load is never over any person.

Outriggers

USE YOUR OUTRIGGERS! Make sure outriggers are on firm timber or steel matting. Outriggers are better than rubber chocks.

Hooks

Hooks on all blocks, including snatch blocks, must have bolts or latches, which must be used each time a load is lifted. The only time bolts or latches are not mandatory is while lowering-in during pipeline construction.

An inspection of all hooks must be performed daily. Welding is not permitted under any circumstances on any part of the hook.

Handling Cable

Always maintain tension on the cable when reeling it in or out. Leather-palm gloves will be used when handling cables.

Hoist Rotation

For a hoist with handbook rotation, ensure that the locking mechanism is working properly, and lock the hoist in the desired position before lifting the load.

Caution: The load can easily swing out of control if the hoist is not correctly locked.

Do not attempt to rotate a loaded hoist until all personnel are positioned clear of the load, and an adequate number of tag lines are in place.

A hoist with power rotation should be used, if available, for jobs that require horizontal positioning of a load after it has been picked up.

Signal Persons

A qualified signal person(s) must work with the hoist or crane operator when

- Personnel assisting with the load are out of the range of the operator's vision
- The moving load is out of the range of the operator's vision, or
- The person is charge of the lift determines it to be necessary.
- The appropriate ANSI standard signals will be used, and illustrations of the signals shall be posted at the job site.

Inspecting Hoisting Equipment

The hoist and its cable must be inspected before each use by a competent person, and if heavy loads are being lifted, then inspections must be performed throughout the day to ensure no problems arise.

All hooks on hoisting equipment should be visually inspected for cracks and twists before the equipment is used.

Lifting equipment of any kind must be inspected before each use by a competent person and a record of the results must be maintained. In addition, a monthly inspection of all hoisting equipment must be performed. A record of all inspections will be kept and will include the date of inspection, the signature of the consultant, and the serial number or other identifier of the equipment. Inspection records will remain with the equipment while it is assigned to a jobsite and forwarded to the administrative offices to be added to the equipment's file. Equipment must not be used if it is not working properly. All wire rope and chains must be taken out of service when wear or corrosion exceeds that allowed by the manufacturer's recommendations.

Inspecting Slings

Slings, fittings, and fastenings should be inspected before each use. Additional inspection must be performed throughout the day to ensure no damage has occurred. Inspections are to be performed by a designated competent person, and should include each sling, the fastenings, and attachments. Slings

found to be defective must be destroyed. Wire rope slings should be replaced if any of the following is observed during inspection:

- Ten randomly broken wires in one rope lay or five broken wires in one strand in one lay,
- Wearing or scraping of one-third the original diameter of outside wires
- Kinking, gouging, bird caging, or other damage, or
- Cracked or deformed end attachments.

Using Slings

- Pad or block sharp corners
- Lift and lower loads slowly
- Use the appropriate chart to ensure that slings of adequate capacity are used
- Know how much weight you are lifting.
- Do not use knots to make slings.
- Do not jerk loads.

Applying Wire Rope Clips

- Use the number and spacing of clips recommended in the following table.
- Make sure the U-bolts of all wire ropes are on the short (dead) end of the rope
- Tighten nuts evenly to the manufacturer's recommended torque
- Before lifting, be sure that all clips have been torqued.
- After several lifts, re-torque all clips.

Requirements for Crane Operators/Cherry Picker Operators

Only designated personnel are authorized to use cranes; these persons must be certified through written and practical testing. The crane operator will not operate the crane until the employees assigned to work with the load have explicit instructions and understand their function. The person responsible for the lift and the crane operator must jointly

- Check the load chart (load chart must be always accessible to operator inside cab and this chart must be legible)
- Check the boom length against the chart
- Establish the load weight and maximum operating radius, or
- Establish the corresponding minimum boom angle.

For cherry picker operations, transport loads at slow speeds on smooth, level surfaces with the boom over the front and swing lock engaged.

Fire Extinguishers

All hoisting equipment will be equipped with a dry chemical or CO2 fire extinguisher. Personnel will be familiar with Global Inspection Services Fire Prevention policy and corresponding fire-related training.

Crane Inspections

Global Inspection Services will utilize the specific crane manufacturer's inspection format found within the Operators Handbook (including preventative maintenance). These inspections are to be completed pre-operational. Actually, the inspection continues the entire time the crane is operating. These inspections will be turned into Global Inspection Services personnel responsible for equipment repairs. All cranes operated will be subject to a third-party inspection and these documents will be kept for record keeping purposes. The crane will not be operated and will be tagged "Out of Order" if a deficiency is found that could prevent the safe operation of the crane. The crane operator is considered the qualified person that conducts the pre-operational inspections. Inspections are to be conducted monthly and are to include all critical components: brakes, crane hooks and ropes (see Wire Rope/Sling Inspection).

Wire Rope/Sling Inspection

All Global Inspection Services employees will continually inspect lifting equipment—including running and all other ropes, alloy steel chain, wire rope, metal mesh, natural and synthetic fiber rope, and synthetic web slings. The formal inspection program is as follows: (Note: These inspections will be kept for record keeping purposes.) Use inspection formats provided by the sling/lifting equipment vendor.

- Measured diameter of main rope
- Measured diameter of auxiliary rope
- Rope damage
- Sheave condition
- Drum condition
- Excessive wear (broken wires, rope corrosion, fitting condition)
- Chains (binding, cracked, twisted, excessive wear)
- Hooks (hardware loose, cracks, excessive wear, bent)
- Excessive stretch
- Slings (torn, safety thread exposed, worn end connections, rotten)
- Capacity table attached and legible

This inspection will show equipment type, number, and capacity. Furthermore, the date of inspection will be logged. If equipment does not pass inspection, it shall be removed from the work area, and the

report will show “Removed from Service”. The equipment that does not pass will be destroyed. The consultant’s name and signature will be entered at the bottom of inspection sheet.

Note: All equipment not in regular use will undergo a thorough inspection before returning to service. Lifting equipment will be stored inside, out of the weather.

Power Line Restrictions

Any vehicle or mechanical equipment capable of having parts of its structure elevated near energized overhead lines shall be operated so that a clearance of 20 feet is maintained between the energized source and the person and the longest conductive object he or she may contact. If the voltage is higher than 50 kV, the clearance shall be increased 4 inches for every 10kV over 50kV [1910.333(c) (3) (i)]. However, under any of the following conditions, the clearance may be reduced:

1. If the vehicle is in transit with its structure lowered, the clearance may be reduced to 4 feet. If the voltage is higher than 50kV, the clearance shall be increased 4 inches for every 10kV over than voltage.
2. If the lines are de-energized, or if insulating barriers are installed to prevent contact with the lines, and if protective measures such as guarding, isolating, or insulating are provided, then the clearance may be reduced to the distance allowed within working dimensions of the insulating barrier.
3. If the equipment is an aerial lift insulated for the voltage involved, and if the work is performed by a qualified person, the clearance (between the uninsulated portion of the aerial lift and the power line) may be reduced to the distance in Table S-5 in 29 CFR 1910.133.

General Rigging and Lifting Safety Requirements

1. All rigging and lifting equipment shall be stored and handled in a manner that protects the rigging structural integrity.
2. All rigging equipment will be inspected immediately prior to use per the manufacturer’s recommendation. Furthermore, all rigging will be inspected monthly, and these inspections will be documented
3. Do not damage the load being lifted with the lifting apparatus. Utilize padding for soft edges and establish any potential damage to equipment by previewing stress points created by lifting.
4. Protect slings from sharp edges. Never set loads down on slings but rather blocking.
5. Do not side load: this creates uneven stress points.
6. When picking a load, determine sling angle. Lifting equipment rated capacities are different when stressed at different angles.
7. Never stand or walk under a suspended load.
8. Never leave suspended loads unattended.

9. Flagmen and those persons lifting loads will use hand signals that are understood by parties. Radio communication is preferred over hand signals.
10. No person may rig a load to be lifted unless they have been properly trained.
11. Taglines will be always utilized on lifted loads.
12. Damaged rigging will not be used. “Damaged” is established by following manufacturer’s guidelines.
13. If chains are used for lifting, they must be certified lifting chains and be tagged as to the capacity.
14. No one is permitted to make modifications or additions of any sort to lifting equipment.
15. The load’s weight will be known before lifting is conducted.
16. Attach cable clips properly. “Never saddle a dead horse.” (The clip saddle should be on the load line)
17. Lifting eyes and points of attachment will match the structural integrity of the lifting equipment. Never wrap lines around a load to be lifted.
18. Whenever internal combustion engine powered equipment exhausts in enclosed spaces, tests shall be made and recorded to see that employees are not exposed to unsafe concentrations of toxic gases or oxygen deficient atmospheres.
19. An accessible fire extinguisher of 5BC rating, or higher, shall be available at all operator stations or cabs of equipment.
20. Operators must meet the physical qualifications, pass a physical, a written examination, understand and be able to use a load chart as well as calculate loads for the crane type.

Scaffolds

It is the objective of this policy to inform Global Inspection Services personnel of the basic OSHA and company requirements regarding the use of scaffolds on job sites. When owner company requirements exceed Global Inspection Services rules and regulations the more stringent shall be adhered to.

Employee Responsibilities

The Global Inspection Services safety manager shall distribute and maintain the scaffold user policy. All changes to the policy will be documented and distributed to all Global Inspection Services job sites. Site specific plans shall be administered by the client’s safety manager at the project level to ensure compliance with owner company policies.

Inspections

1. All scaffolds shall be inspected prior to the beginning of work when there is a change in circumstances at the scaffold location and at the change of shift.

2. A competent person shall complete all scaffold inspections. If during the inspection the scaffold is found to be unsatisfactory or that a situation deems that the scaffold is unsafe for human occupancy, the competent consultant shall tag the scaffold as unsafe and notify the builder.

Training

1. Scaffold user training will be conducted on all Global Inspection Services employees whose job requires the use of scaffolds. The Global Inspection Services safety manager will assign an in-house competent and "qualified" scaffold person or approved third-party Company to conduct the training of employees. Training will be conducted in the pre-job stage, as an annual refresher, when deficiencies occur or when changes are made to company policy or state/federal regulations. **If the conditions on a job site change, employees must be re-trained prior to returning to work.**
2. All documentation of training will be kept in the employee files.
3. Components of training shall cover the following topics:
    a. Tagging systems, owner driven or Global Inspection Services
        - Complete scaffolds shall be tagged with a GREEN ready to use tag. The signature of the competent builder, the date, and the checklist user shall be documented on the tag. (See Attachment A)
        - Incomplete scaffolds shall be tagged in RED (not for use), and deficiencies documented on the tag. (See Attachment B)
        - Scaffolds that require special circumstances, i.e., safety harnesses, head obstructions shall be tagged with a YELLOW tag denoting the warning or PPE requirements to use the scaffold.
        - Scaffold user checklist shall be reviewed before each use.
        - Owner driven programs and tagging systems will supersede Global Inspection Services tagging programs while on their premises so that consistency at owner projects is achieved.
        - Potential users will not use an untagged scaffold.
    b. Falling objects and debris to lower levels.
        - Containment by toe boards, tool bags or buckets.
        - Stacking of material and tools.
        - Ensuring that only items being used occupy the scaffold.
    c. Scaffold ratings and load limits reference CFR 1926.451
        - Light Duty Scaffolds- 25p.s.f.
        - Medium Duty Scaffolds-50p.s.f.

- Heavy Duty Scaffolds-75p.s.f.

d. Electrical hazards.

- High voltage lines and equipment.
- Conductive scaffold components.

e. Types of fall protection

- Harnesses
- Handrails and mid-rails
- Safety nets.

f. Modifications/altering scaffolds and consequences.

- All Repairs to the scaffold deficiencies shall be repaired in accordance with CFR 1926 Subpart L. Any Global Inspection Services employee that occupies a scaffold tagged incomplete will be subject to immediate disciplinary action, up to termination.
- Modifications to scaffolds and their components shall only be conducted under the supervision of a competent builder and with the permission of the scaffold owner.
- No scaffold parts may be interchanged with other manufactured scaffold systems parts that could lower the integrity of the scaffold.
- Any Global Inspection Services employee that modifies a scaffold without the supervision of a competent person will be subject to immediate disciplinary action up to termination.

Scaffold User Checklist

Scaffold User Checklist will be reviewed by the builder of the scaffold.

This list will be reviewed, and the scaffold inspected by a competent person prior to, and during each use. If during the inspection the scaffold is found to be unsatisfactory or that a situation deems that the scaffold is unsafe for human occupancy, the competent consultant shall tag the scaffold as unsafe and notify the builder.

Scaffold users shall also inspect the scaffold before each use. The following Checklist is provided for the user. In the event the user finds that any item on the Checklist is not true, the user should tag the scaffold with the red tag and indicate the discrepancy. For items that deal with the construction of the scaffold, a qualified person should be contacted.

1. The scaffold must have a tag that is properly filled out. Do Not Use an Untagged Scaffold!
2. The maximum intended load that will be placed on the scaffold is known and is less than the maximum load-carrying capability of the scaffold.

3. The scaffold bays appear to be plumb, and level and scaffold base plates are on firm footing.
4. Scaffold bracing is in place.
5. Scaffold platforms are fully planked and extend at least 6 inches over the end supports.
6. Guardrails are in place.
7. Overhead obstructions are noted on the yellow tag.
8. No unprotected electrical lines are within 10 feet of the scaffold.
9. Safe access is provided.
10. Rolling scaffolds must have wheels locked and diagonal braces present to keep uprights squared properly.

If the ladder extends into a roadway, roadway is marked, and scaffold access ladders are protected from vehicle traffic.

Short Service Employee

Purpose

The management of GIS recognizes that all new employees face a period of transition into new surroundings and work processes. It is during this period that new employees are exposed to the greatest risk of personal injury. To help reduce this risk, GIS has developed a Short Service Employee (SSE) program.

1. **Responsibility**

Business Unit Manager

- Assures SSE process is implemented, and that any subcontractor utilized by GIS will have a similar process in place.
- Assures that members are being selected properly.

Supervisor

- Identifies SSE personnel
- Schedules SSE personnel for training and or competency reviews
- Identifies qualified mentors
- Approves SSE releases
- Approves SSE “early releases”
- Monitors crew makeup to maintain required SSE ratio.

Safety Coordinator

- Provides training support to Supervisor for the SSE’s and mentors
- Assist Supervisor with SSE progress measurement

- Review and refine competency requirements and training processes

Mentor

- Provides on the job support to assigned SSE
- Have direct knowledge of assigned SSE
- Provides SSE feedback to Supervisor and Safety Coordinator
- Validates SSE competencies

Short Service Employee

- Participates and successfully completes competency requirements
- Direct knowledge of assigned Mentor
- May not work alone as a single person crew

2. Process

- This program is designed to provide safety training in specific subjects for employees who meet the description of a "Short Service Employee". The mentoring process is shared by the assigned mentor, supervisor, co-workers, and to some extent, the client. SSEs are identified by the utilization of a decal placed on the SSE's hardhat. The decal identifies the employee as an SSE thereby increasing the awareness of his/her co-workers that this individual may need additional safety guidance. The Client must be notified prior to an SSE being onsite.
- A Short Service Employee is defined as any employee who has less than six months of industry experience or is new to GIS. Industrial experience will be considered to determine "early release" from the program for employees who are "new to the company only".
- SSE personnel will be assigned a Mentor by either the site supervisor or safety coordinator.
- The SSE is responsible for knowing who the Mentor is and must remain in close contact with him/her.
- The Mentor will guide the SSE through the designated safety processes and site-specific requirements.
- SSE personnel are expected to meet all training requirements and demonstrate proficiencies.
- Mentor's jobsite staff and co-workers will provide daily guidance.
- Site safety coordinators will arrange and coordinate some specific training certifications, such as forklift operation, elevated platforms, etc.
- It is the responsibility of each SSE to actively participate and demonstrate the capacity to learn and routinely practice all safety training provided.

Mentors

- Mentors must meet certain criteria to assure proper guidance of SSE personnel.

- It is essential that the Mentors can function as effective coaches and properly express the safety attitude and safe work practices required by GIS.
- Some key characteristics of a Mentor are:
    - Passion for Safety
    - Coaching & Team Building Qualities
    - Good Communication Skills
    - Willing Participant
    - Comprehension of Hazard Identification
    - Current on Safety Training Elements
- All superintendents, foreman, and safety professionals with a minimum of six months of industrial experience who also meet the above criteria will be eligible Mentors regardless of tenure with the company and additional Mentors will be assigned by site management and leaders as necessary.
- Personnel who have achieved Mentor Status will be identified by a hardhat sticker.

3. SSE Graduation

- An employee's SSE status will be removed after 4 weeks provided, he/she has successfully completed the required safety training and has demonstrated his/her knowledge and understanding of GIS's safety processes.
- In some cases, GIS may amend minimum training requirements to include site specific requirements.
- The removal from an SSE status will be initiated by the employee's supervisor and authorized by the business unit manager.
- Employees in an SSE status who do not meet the above requirements after the initial 4 weeks of employment will remain in the SSE status for an additional 2 weeks.
- If the training cannot be completed successfully within the 6-week period, the training must be repeated.
- If the training cannot be completed successfully within 6 months, management will evaluate employee to determine the possible cause for incompletion and eligibility to restart the program.
- If the job duration ends prior to graduation, the employee will be allowed to resume training where they left off at another job site or if they return to the same client facility within 6 months.

- If the employee is transferred to another job site, he/she should be provided with copies of their evaluation sheets to provide to the new Mentor.
- If a Non-SSE leaves the company and returns within 6 months, the employee will not be required to attend SSE training unless they are new to a client that requires SSE status.
- In cases where customer requires a longer duration to overcome SSE status, GIS will modify the SSE program to comply with facility requirements.

4. SSE Early Release Process

- GIS recognizes that in some instances, SSEs with relevant skills and experience may demonstrate their abilities before the end of the 4-week training period.
- In these cases, GIS provides an "Early Release" option that can be accomplished by the approval of the job site supervisor in conjunction with the business unit manager.
- Early Releases must have verification of competencies listed within this program along with any site-specific requirements.
- Safety infractions during the SSE period will forego the early release potential.
- Early release candidates must still follow all guidelines under this program.

5. Crew Makeup

- The ratio of SSE to Non-SSE in typical work crews shall not exceed 1 SSE to 1 Non-SSE (50%). Ideally the goal shall be 1 SSE to 3 Non-SSE's (25%).
- Mentor to SSE ratio goal should be no greater than 1:10.
- In the event a client has other requirements, GIS will abide by that client's policy.
- Under no circumstances shall an SSE work alone.
- Prior to project mobilization, GIS Operations will communicate with clients to obtain staffing requirements and SSE ratios.
- GIS's onsite Supervisor will assure that the required ratios will be maintained in the event there is a crew rotation.

7. Training

- The following categories identifies the minimum training categories to be completed successfully by the SSE:
    - Accident/Near Miss Reporting Procedures
    - Fall Protection

- Housekeeping
- Ladders and Scaffolding
- PPE
- Proper Lifting Techniques
- Site Specific Orientation and Emergency Procedures
- JSA Completion and Hazard Recognition
- LOTO
- Permit Understanding

- In addition to the above requirements, SSEs should be monitored for compliance with HSE policies and procedures.
- Training progress should be evaluated weekly and documented on the "SSE Safety Training Record".
- Each training category should be given a rating from 1 to 4 with 1 being unsatisfactory, 2 being average, 3 being good, and 4 being excellent.
- SSE will not be eligible to be released from the program until a rating of "3" or higher is achieved in all categories.

SSE training records will be maintained on the jobsite with copies filed at the district office.

Slips, Trips & Falls

Introduction

29 USC 654, and 29 CFR 1910.21 to 1910.30

The federal General Duty Clause under the workplace safety and health statute requires employers to provide a workplace that is free of recognized hazards, including slip, trip, and fall hazards. OSHA's walking and working surfaces standard (also known as slips, trips, and falls) for general industry workplaces regulates most areas where employees may work or travel in the workplace. Walking and working surfaces include ladders, and scaffolds. Much of the standard is geared to design, construction, and installation specifications for the prevention of worker injury from slips, trips, and falls. Other aspects cover procedures and guidelines for safe use of equipment such as scaffolds and portable ladders. The walking and working surfaces rules are in the OSHA standards at 29 CFR 1910 Subpart D.

Fall protection

Although OSHA does not have a specific general industry rule for fall protection like the one for construction (29 CFR 1926.500), OSHA considers the rule that covers protection of open-sided floors, platforms, and runways (29 CFR 1910.23(c)), and the personal protective equipment rule, to serve as fall protection guidelines for general industry workplaces. The fall protection-related general industry rules are located at:

- 29 CFR 1910.132(a)—Personal Protective Equipment
- 29 CFR 1910.66 Appendix C—Personal Fall Arrest System (Section I)

Housekeeping

Housekeeping is a very basic requirement. All areas where employees work or travel even infrequently must be kept clear of hazards. Every work area, and passageway must be kept free from potential hazards. These areas must be clean and free of hazards that could interfere with normal activities.

Covers and guardrails

Covers or guardrails must also be used to protect employees.

Scaffolding

The scaffolding rule establishes requirements for the construction, operation, maintenance, and use of scaffolds for the maintenance of buildings and structures. Scaffolds must be available and erected for work that cannot be done safely from the ground or from solid construction, and where ladders are not practical. The rule specifies the types of wood grades for wood scaffolding and planking. It describes the detailed specifications for 18 types of scaffolds.

Injury Statistics

- According to the federal Centers for Disease Control and Prevention, 265,000 workers in the U.S. sustained nonfatal injuries from slips, trips, and falls in a recent year, each resulting in one or more days away from work.
- These injuries represent 17% of all nonfatal workplace injuries, the highest frequency of injury of any single regulated activity.

Slip, Trip, and Fall Hazards

Here is a list of common work conditions that can lead to slips, trips, and falls:

- Power cords, skids, spoil piles and ropes, are common tripping hazards.
- Clutter is a typical tripping hazard.
- Open pits, tanks, vats, and ditches are fall hazards.
- Wet ground is a common slip and fall hazards.

Open-Sided Floors and Platforms

Let’s discuss how to reduce or eliminate specific hazards.

- Open-sided floors, walkways, or work platforms that are 4 feet or more above adjacent floor or ground levels must be guarded to prevent workers from falling to the lower level.
- Standard guard railing, or equivalent fall protection, on all open sides is required except where there is an entrance to a ramp, stairway, or fixed ladder.

- Toe boards to protect employees that may work or walk below the aboveground walkway or work platform.
- Toe boards will also protect moving machinery or equipment that could be damaged by materials falling from the aboveground walkway or work platform.

Guardrails

Guardrails act as a barrier along any open edge to protect employees and objects from falling over the open edge to a lower level.

- The top rail of the guardrails must be 42 inches high above the walking or working surface.
- The mid rail must be halfway between the top rail and the walking or working surface, or about 21 inches above the surface.
- A 4-inch-tall toe board is used to help prevent an employee from stepping over the edge of the working surface and to prevent the employee from kicking tools or equipment over the edge where they could fall on an employee on the lower level.
- The guard railing must be able to withstand reasonable force and prevent an employee from falling to a lower level.
- Passageways with a heavy flow of vehicle traffic must be sufficiently wide to provide pedestrians a walkway that is separated from vehicle traffic, such as forklifts and other material handling equipment.

Keep Walking and Working Surfaces Clear and Clean

- Keep walkways, and other walking or working surfaces clear of obstructions to eliminate slip hazards and prevent injuries and install mats or raised platforms where wet processes are used.
- Prevent tripping-related injuries by keeping area free from trip hazards, such as skids, fabrication material, loose spoil, and other objects.

Eliminate Trip Hazards

- Housekeeping plays a key role in preventing trips. Take the time to pick up tools, materials, and trash. Clean up straps and bands from boxes or bundles. They can easily get wrapped up in a person's legs and cause a fall.
- Do not walk through the middle or on top of obstructions in your work area. If possible, pick up the obstructions and put them away. If not, walk around them.
- Avoid stretching cords across walkways.

Eliminate Slip Hazards

- Repair leaks in machinery, piping, and equipment that can contribute to slip hazards.
- Install absorbent or liquid barriers around wet processes. Absorbent or other barriers will prevent these liquids from flowing into walking areas and causing slip-related injuries.

- Post warning signs, cones, or barricade tape around slip hazards or, if necessary, stand guard to prevent unknowing or unaware employees from entering the hazardous area until the slip hazard has been cleaned up.

Wear Slip-Resistant Shoes

Proper footwear can play a large role in preventing slip-related injuries. Remember, street shoes or athletic shoes are not intended to provide slip resistance in the work environment. For example, shoes that provide good traction on a basketball court may not provide good traction in a work environment that is subject to slip hazards from water, oil, or chemicals.

- Slip-resistant shoes should have soft rubber soles that grip the surface of the floor. However, the soles should not be too soft, or they will wear down quickly.
- The soles of slip-resistant shoes should have tread with channels that carry the water, oil, chemical, or other contaminant out from under the shoe, which will allow the ridges on the sole to come in firm contact with the floor.
- Remember that wearing slip-resistant shoes does not eliminate the possibility of slipping. You must still recognize slip-related hazards and walk carefully in areas with wet floors.

Be Alert, Use Common Sense

- Be alert to all the potential slip, trip, and fall hazards.
- Workers must pay attention to where they are going. Keep an eye out for potential slip, trip, and fall hazards.
- Adjust your stride according to the walking surface. If the surface is dry and rough, you can probably take long and quick strides. If the ground appears to be slippery, take short and slow steps. When walking on a ramp, take slow steps and test your traction.
- When carrying objects, do not carry so many items that your forward vision is blocked. Make sure you can always see the ground in front of you, especially when traveling up and down ramps.

Watch Your Step!!

To avoid slips, trips, and falls:

DO:

✚ Use handrails

✚ Pick up any foreign objects

✚ Pay attention to where you're going

✚ WALK!

✚ Clean up or report all spills.

✚ Don't carry a stack of objects too tall to see over.

✚ As you walk, check your path for anything sticking out.

✚ Watch out for uneven surfaces.

✚ Keep your hands at your sides, not in your pockets.

DON'T:

✚ RUN!

Spill & Release Management

Spills of hazardous materials can endanger exposed personnel, contaminate the environment, and could endanger public and wildlife. GIS consultants will ensure contractors practice proper hazardous chemical compliance as stated in the OSHA 29CFR 1910.1200, Hazardous Communication Standard, to include proper storage and labeling of hazardous chemicals.

When a spill occurs at a client's location, the following action steps are general guidelines for prompt response:

- **STOP THE SOURCE** of the spill, if possible, without exposing personnel or contractors to hazardous situations.
- **CONTAIN THE SPILL** Global Inspection Services will ensure that the contractors have adequate spill response resources that address the nature and quantity of chemical being used or anticipated use. The spill kits must be readily available. The primary concern is to prevent spilled or released materials from leaving company property and entering any waterways. Areas where chemical may be used or stored must be maintained in a clean and orderly manner. Good housekeeping must be maintained constantly to include labeling and secondary containment where necessary.
- **NOTIFY** the Client and immediate supervisor regarding the substance that was spilled, the location of the spill and the volume of the spill. All spills must be reported to the Client's Representative immediately, or as soon as possible, but no later than the end of the work shift
- **ACCESS** the impact of the spill to people, animals, land, and if needed, block public access to the area with barrier tape, traffic cones, or vehicles.

Cleanup will be under the direction of the Client. Cleanup procedure for all spills will be determined on case-by-case basis. During the cleanup procedure do not mix contaminated materials and soil with clean, uncontaminated materials. Proper PPE shall be worn when dealing with spills and releases.

Secondary containment (berms, dikes, etc.) around certain above ground tanks is not only a good housekeeping practice, but also a requirement. Before making any temporary opening in a berm or dike, obtain permission from the appropriate Client Representative. A berm or dike must not be left open overnight without authorization for Client management. If available, ensure cross-over steps and landings are used rather than walking over berms or dikes. All Global Inspection Services field personnel

will receive “Spill and Release Management” training during initial safety training at time of employment.

Stop Work Authority

Purpose

The purpose of this procedure is to ensure that all employees are given the responsibility and

Authority to stop work when employees believe that a situation exists that places them, their coworker(s), contracted personnel, or the public at risk or in danger; could adversely affect the safe operation or cause damage to the facility; or result in a release of radiological or chemical effluents to the environment above regulatory requirements or approvals; and provides a method to resolve the issue. Maintaining a diligent questioning attitude is vital to safe execution of work-scope and is a cornerstone to effective Conduct of Operations and Integrated Safety Management.

Portions of this procedure implement requirements of the Worker Safety and Health Program

Plan for compliance to 10 *Code of Federal Regulations* (CFR) 851, “Worker Safety and Health

Program” and are bracketed in the text. This procedure extends the authority to stop work to situations where an employee believes there is a need to clarify work instructions; or to propose additional controls.

All employees, prior to starting the job, will receive “Stop Work Authority” training and must successfully complete the exam for this section.

Scope

This procedure is applicable to all contractors and subcontract personnel working for Global Inspection Services.

Responsibilities

Employees

In supporting safe execution of work, all personnel, have the following responsibilities [10 CFR

851.A1]:

- The responsibility and authority to stop work or decline to perform an assigned task without fear of reprisal, to discuss and resolve work and safety concerns. The Stop Work may include discussions with co-workers, supervision, or safety representative to resolve work related issues, address potential unsafe conditions, clarify work instructions, propose additional controls, etc.
- The responsibility and authority to initiate a Stop Work IMMEDIATELY, without fear of reprisal, when the employee believes a situation exists which places himself/herself, a coworker(s), or the environment in danger or at risk.
- The responsibility to report any activity or condition the employee believes is unsafe or for which they have initiated a Stop Work. Notification should be made to the affected worker(s) and to the supervisor or their supervisor’s designee at the location where the activity or condition exists.

Stop Work

- The responsibility to notify their supervisor if a raised Stop Work issue has not been resolved to their satisfaction through established channels prior to the resumption of work.
- Employee can contact their safety representative with a concern or to initiate a stop work if the employee prefers to remain anonymous.

Management/Supervisor/Person in Charge (PIC)/ Field Work Supervisor (FWS)

Management and supervision are committed to promptly resolve issues resulting from an employee-raised Stop Work [10 CFR 851.20].

Management (e.g., Directors, Managers, and Supervisors) responsibilities are to:

- Resolve any issues that have resulted in an individual stopping a specific task(s) or activity.
- Provide feedback to individual/s and the affected work group who have exercised their Stop Work responsibility on the resolution of their concern prior to resuming work. If the employee that issued a stop work is not available due to reasons such as vacation, PTO, shift change, or training then the supervisor provides the feedback to the safety representative, prior to resuming work.
- Ensure no actions are taken as reprisal or retribution against individuals who raise safety concerns or stop an activity, they believe is unsafe.

Safety Representatives(s) are Responsible to:

- Assist employees, supervision, and management in the resolution of safety issues and concerns.
- Immediately contact management and work to resolve issues when an employee has called a situation to their attention that has not been resolved.
- Discuss resolution with employees involved in a work stoppage where resolution was completed after their shift or when they were unavailable, or where he/she acted as their representative in reaching resolution.
- Work as the agent of an employee that prefers to remain anonymous to work directly in the resolution of the stop work.

Implementation Process

Actionee Step Action

Employee

Stop work if an activity or condition is believed to be unsafe, such as:

a) A situation exists that places them, their coworker(s), contracted personnel, or the public at risk or in danger.
b) A situation could adversely affect the safe operation or cause damage to the facility; or
c) A situation could result in a release of radiological or chemical effluents to the environment above regulatory requirements or approvals.
d) To clarify work instructions or to propose additional controls

Ensure the work/activity is in or placed in a safe condition and immediately notify supervision/management and affected workers when you stop work or decline to perform an activity. Manager/ Supervisor/PIC/FWS

Resolve any issues that have resulted in an employee stopping work or an activity.

Involve individuals who initiated the Stop Work or their appropriate safety representatives if the individual is not available, in reaching mutual agreement on the resolution or proposed actions necessary to return to work.

Be sure any necessary corrective or compensatory actions are taken before resuming an activity and are documented in accordance with Contractor procedures (Stop Work Authority form).

If a Stop Work has not been resolved to the mutual agreement of manager and employee, then the stop work remains in place and the Supervisor/PIC/FWS will notify the appropriate company management, safety representative. Resolution of the stop work resides with company management to resolve and/or propose actions necessary to return to work. Work may be resumed when management agree that the issue has been resolved. The objective is to reach resolution at the lowest levels of engagement.

Once the Stop Work has been resolved a follow-up review will be taken to ensure that the actions taken to resolve the Stop Work have been initiated and continue to be implemented.

Traffic Control Flaggers

Introduction

Flaggers are an essential part of traffic control during road construction. By directing vehicles, flaggers keep both drivers and workers safer; however, the workers' proximity to traffic puts them at great risk for injury. Flaggers should be carefully selected and trained, then properly equipped. Because this position is responsible for the safety of so many, it's important to provide adequate resources to allow the flagger to do their job successfully.

When to Use a Flagger

Whenever possible, traffic should be controlled with signs, lane shifts, signals, and barricades.

Limit the use of flaggers to situations where these measures cannot sufficiently control the flow of vehicles. Avoid using flaggers when conditions are especially hazardous:

- Inclement weather
- Night work or limited visibility
- High speed traffic

Qualification

Flagging requires a responsible individual who can effectively interact with others at a distance and handle a constantly moving, dynamic workplace. Choose flaggers carefully, looking for the following traits:

- Average intelligence and reasoning skills

- Ability to recognize dangerous situations and react quickly in an emergency
- Appropriate physical condition to meet the essential function of the job
- Ability to receive and communicate specific instructions clearly, firmly, and courteously

Training

Flaggers are only as good as the training they receive. Flaggers must be prepared for a variety of situations and working conditions. All private, municipal, or state employed flaggers at highway construction sites on public ways should be trained in controlling traffic at construction sites by a knowledgeable individual. This training may include video instruction, instruction in a classroom setting, distribution of informational handbooks or other educational materials, or other training activities determined appropriate by the employer.

Flaggers should be trained in the proper fundamentals of controlling traffic before being assigned. The training and instructions should include the following:

- Equipment orientation
- Layout of the work zone and flagging station
- Methods to signal traffic to stop, proceed, or slow down
- Methods of one-way traffic control
- Emergency vehicles traveling through the work zone
- Handling emergency situations
- Dealing with hostile drivers
- Flagging procedures when a single flagger is used
- Trainee demonstration of proper flagging methodology and operations

Flaggers should be trained by persons with the qualifications and experience necessary to effectively instruct the employee in the proper fundamentals of flagging moving traffic.

In addition, flaggers should receive an “orientation” at each new job site or any time the site operations change significantly. This orientation should address:

- Vehicles and equipment used at the site
- Traffic patterns
- Communication methods for flaggers, workers, and equipment operators
- Flagger stations, including escape route

Flaggers should understand the operations of the site and what hazards they may face. It is recommended that supervisors document all training and orientations. A daily briefing of all flaggers is also a good idea to describe in detail the site’s activities for the day.

Flagger Apparel

High-visibility clothing allows flaggers to be clearly seen and identified by drivers and other workers. It should be properly maintained and always worn. Flaggers should wear high-visibility safety apparel, such as rainwear, vests, jackets, or shirts which meet the ANSI/ISEA 107-199 Standard for High-Visibility Safety Apparel for exposure to traffic hazards.

When purchasing high-visibility safety apparel, look for the ANSI 107 Label. The standard requires the manufacturer to attach a label that clearly states the:

- Name of the manufacturer
- Size of the garment
- Maximum number of wash cycles
- Care instructions, if applicable
- Pictograph showing both the class of garment and level of retro-reflective material performance

Three classes of garments are available, depending on the level of protection required. The classes of garments are based on minimum surface areas of two elements: retro reflective materials and background materials. When combined correctly, these two elements greatly enhance the visibility of the wearer

Apparel background (outer) material is usually an eye-catching color. For daytime work, apparel should be either orange, yellow, yellow-green, or fluorescent versions of those colors. For night work, apparel should also include retro reflective materials. These should be orange, yellow, white, silver, yellow-green, or a fluorescent version of these colors. Retro reflective materials should be visible from no less than 1,000 feet.

The retro reflective clothing (or the retro reflective material added to the clothing) should have a minimum of one horizontal stripe around the torso. This helps clearly identify the human form to drivers. Ensure that the

retro reflective portions are visible regardless of body position or motion. The following information may help with selection of the appropriate high-visibility clothing for workers.

Class 1: requires at least 155 sq. inches of reflective material

Conditions:

- Low-speed roadways (under 25 miles per hour)
- Activities permit wearer's full attention to traffic
- Separated from traffic

Examples:

- Warehouse workers

- Delivery vehicle drivers
- Shopping cart retrievers
- Parking lot attendants
- Sidewalk maintenance workers

Class 2: requires at least 201 sq. inches of reflective material

Conditions:

- Tasks that divert attention from traffic
- Activities taking place in or close to traffic
- Speeds greater than 25 miles per hour
- Inclement weather

Examples:

- Utility workers
- Roadway construction workers
- Emergency response personnel
- Survey crews
- Law enforcement

Class 3: requires at least 310 sq. inches of reflective material

Conditions:

- High task loads that divert attention from traffic
- Full body motions conspicuous at over 1280 feet
- High-speed roadways: greater than 50 miles per hour
- Identification of the human form desired

Examples:

- Law enforcement
- Utility workers
- Emergency response personnel
- Roadway construction workers

When selecting a class of safety apparel, the employer should evaluate the hazards and work conditions to determine what class is appropriate. Inspect high visibility garments regularly to determine if retro reflective material is intact. After repeated wear and washing, this clothing's ability to protect the worker is diminished.

Flagger Equipment

Temporary traffic control zones may utilize STOP/SLOW paddles, lights, or red flags to control traffic flow. The STOP/SLOW paddle provides better guidance to drivers than other methods; therefore, it should be the primary traffic signaling device.

The paddle should have an octagonal shape on a rigid handle and be at least 18 inches in width with letters 6 inches high. The background of the STOP face should be red with white letters and border.

The background of the SLOW face should be orange with black letters and border.

When used at night, the STOP/SLOW paddle should be retro reflectorized to improve conspicuity. Flaggers may also increase nighttime visibility by supplementing the paddle with one or two flashing white lamps.

Flags, when used, should be a minimum of 24 inches square, made of a high-quality red material, and securely fastened to a staff that is approximately 36 inches in length. The free end of the flag should be weighted so the flag hangs vertically, even in heavy winds. At night, flags should be retro reflectorized red.

In addition to these essentials, flaggers may also benefit from carrying portable radios. From their vantage point, they may be able to see jobsite accidents as they are occurring, and a two-way radio would allow them to warn a supervisor. Also, when the flagger is at risk of becoming an accident victim (backed over by a truck, etc.), a warning from another worker could save a life. If using multiple flaggers, radios allow them to communicate effectively and coordinate their efforts.

Flagging Stations

Flagging stations should be located ahead of the workspace to allow ample time for drivers to slow down and stop. This distance also allows the flagger to warn workers if hazards arise (such as a vehicle out of control). The flagger should stand alone to be always clearly visible and identifiable to drivers. Do not allow other workers to congregate around the flagging station, as this both distracts the flagger and confuses drivers looking for direction.

The flagger should not stand in the lane being used by traffic unless the traffic is stopped. The ideal location is either in the barricaded lane or on the shoulder adjacent to vehicles being directed. Signs should warn drivers of a flagging station approaching. Depending on the configuration of the site and traffic, it may be advisable to use more than one flagger and flagger station per direction of traffic. At night and during limited visibility situations, flagging stations should be illuminated.

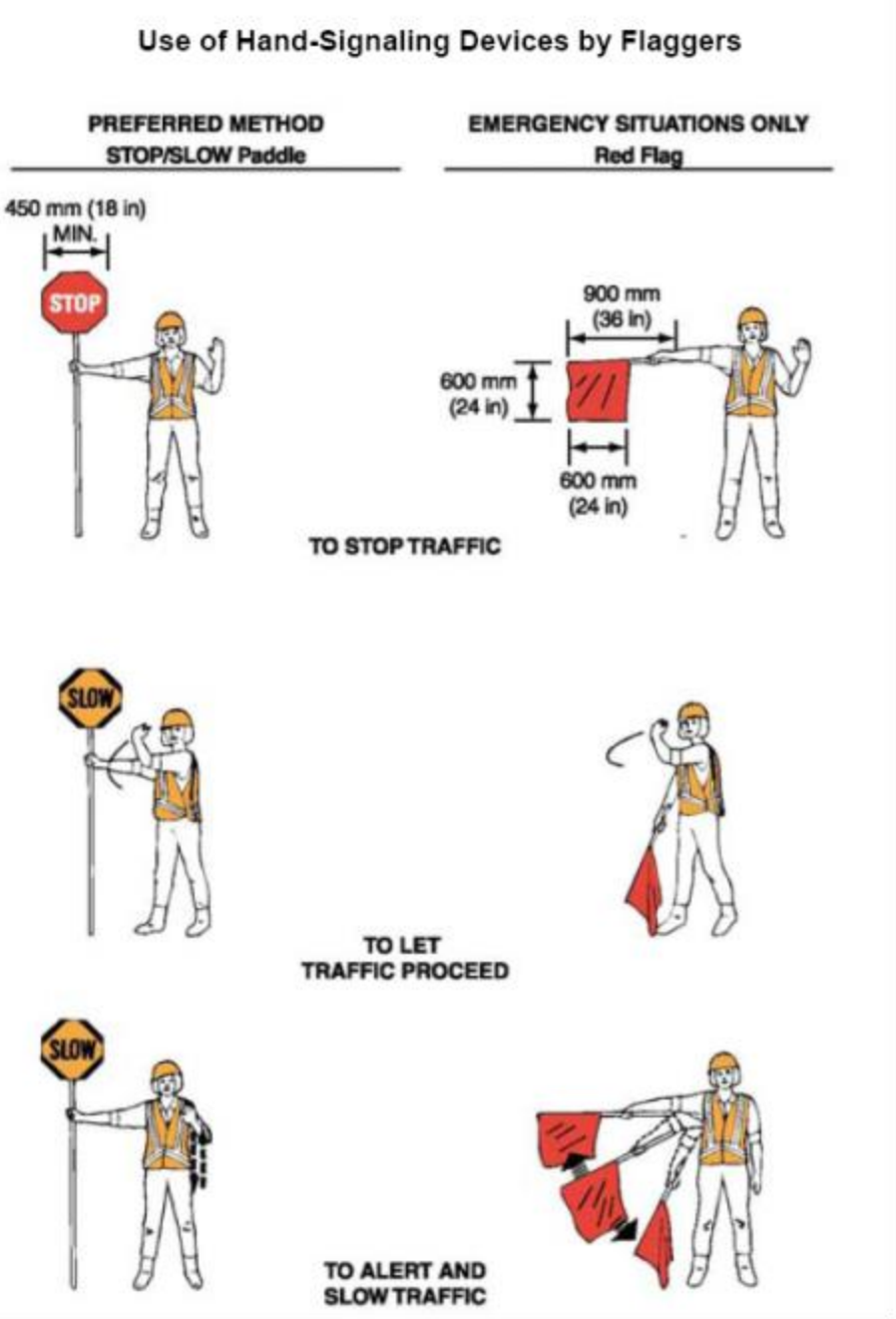
Flagging Safety

The following guidelines are essential for all flaggers:

- Never turn your back to traffic

- Do not stand in a lane being used by moving traffic
- Never assume a vehicle will stop
- Always be sure the driver sees you (make eye contact)
- Plan an escape route in case you must quickly exit flagging station
- Always stay alert and focused on your job

APPENDIX A Use of Hand-Signaling Devices by Flaggers



Travel Safety

Before You Leave

If you are going to be gone overnight or for an extended period, be certain to secure your home. First stop your mail and newspaper delivery. Secure your doors with deadbolt locks, lock windows and close drapes and shades. Put lights and radio on a timer and let friends know you will be gone.

Airport Safety and Security

Prior to arriving at the airport, familiarize yourself with the layout of the airport and terminal so you don't end up at the wrong place. Allow plenty of time to reach the airport. Two hours ahead of your scheduled departure time is a good rule of thumb. Be prepared for the security check point and always keep your luggage in sight.

Airline Safety

Once on board take a moment to notice what's going on. Listen to the crew's instruction. Pay special attention to where the exits are. Read the safety information provided. Keep your seatbelt always fastened while seated in case of unexpected turbulence or an emergency. In the event you must evacuate the aircraft, do not attempt to retrieve your baggage.

Hotel & Motel Safety

Most of the time you probably give little thought to the hotel or motel where you will be staying, yet here are some basic safety and security considerations that you should keep in mind. Is the entry to your room from the inside or outside? Rooms that open to the interior hallway are generally considered safer since persons outside cannot see you coming or going. Does your room door have deadbolt locks, security chains and peepholes?

Is the facility equipped with a fire alarm system and sprinklers? Remember, most hotel fire deaths occur at facilities without sprinkler systems. Does the facility use electronic key card systems or the less secure standard metal key system?

The electronic system is clearly the best choice. If possible, try to reserve a room on floors 3 through 6. Rooms above the sixth floor may not be reachable by fire department ladders and rooms on level one or two may be accessible to would be burglars, so try to avoid these floors. If you have driven to the hotel, check out the parking area carefully and try to park in a well-lit area near the main entrance.

Before entering your room, check around you and make sure no one is close by. As you enter, make sure that the door locks are working properly, including the locks on the adjoining room door if there is one. Be certain to always use the deadbolt lock and security chain that you are in the room and never open the door for persons unknown to you. If there are any questions about who is requesting entry, including someone who is claiming to be a hotel employee, call the front desk to check.

Examine the windows and any exterior sliding door to ensure that they are working properly and can be locked when you are away from the room. While in your room, here are a few additional safety tips to keep in mind. First, note the location of your room with respect to the fire exits and stairways. There should be a diagram on

the back of the room door to which you can refer to and make sure you know which direction to go once you exit your room. It's also a good idea to pack a small but powerful flashlight.

Most of the time you will never need it, but it will come in awfully handy, and might save your life during an emergency such as a fire or when the electricity goes out. Keep it on the nightstand. When you leave for the day or even only a short time, place the "Do Not Disturb" sign in the door handle.

If in the middle of the night the fire alarm goes off and it's evident there is smoke or fire, you may have to exit the room. Feel the door to see if it is hot or not. If not, you will need to exit the room, crawl on

your hands and knees if there is smoke present. There will generally be more oxygen and cooler air near the floor. If you hear the fire alarm will need to evacuate the building immediately. Don't assume it may be a drill, just get out. Grab your room key, flashlight, and wallet. Don't stop to gather clothing or other belongings, these items can be replaced.

Safety on the Road

If you are using a rental car, select a car that is familiar to you. Adjust the driver's seat about a foot away from the steering wheel. This distance will allow for the proper inflation of the air bag in case of a collision. Get a good "feel" for how the vehicle handles before entering traffic. Test the brakes and steering so you won't be surprised if you must make a sudden stop or evasive maneuver later.

Most important fasten your seatbelt. It's the law in nearly all states. Finally, remember to keep your speed under control and don't drive aggressively. The last thing you need on this, or any trip is a collision and especially one in which you are at fault!

Security for Yourself and Your Vehicle

Since you are likely to be driving in unfamiliar territory, now is the time to be especially alert and cautious. Here are a few tips. First, remember to stay focused on the road and try not to be distracted by things going on, in or around your vehicle. Carefully notice your surroundings! Second, when stopped or parking, observe what is going on around you, and if it's nighttime, park only in well-lit areas.

If you feel that you are in danger of being robbed or harmed, sound your car's horn until someone comes to you aid. Use your cell phone to call police.

Third, if you are involved in a minor collision in which another motorist strikes you in the rear, be especially leery. Sometimes these collisions are staged as an insurance scam or possibly worse. If you have a cell phone and are not injured call the police or 9-1-1 immediately. Let them know that you are concerned about your safety. Stay in the car and wait for police or pull into the nearest safe area.

Trenching & Excavation

Objective

To provide guidelines to ensure:

- Personnel are protected during excavation activities
- Clients' facilities are protected during excavation activities
- Requirements of OSHA Standard 29 CFR 1926.650 are met

Scope

All Global Inspection Services employees and contractors working near excavations and trenching activities should follow the following guidelines.

Requirements/Guidelines:

1. To protect employees against cave-ins, a protective sloping, benching, shielding or shoring system must be installed in each excavation:

2. In excavations more than 4 feet in depth or in excavations less than 4 feet if there is any indication of cave-ins, shielding and shoring systems must be designed and constructed to withstand the anticipated loads.
3. Global Inspection Services will have a Competent Person on-site who is capable of identifying existing and predictable hazards in the surroundings, and who can take prompt corrective measures to eliminate such hazards. This person must be on-site during all excavation activities where the potential for employee injury exists.
4. The pipeline, all valves, sleeves, and other appurtenances must be properly always supported during excavation, repair, and backfill operations.

Permit-Required Confined Space

If a client requires a trench to be labeled a permit-required confined space or if a hazard exist or conditions exists that require a confined space permit, then a confined space permit must be completed, and rescue equipment must be available and attended and all other components of the confined space permit will be followed.

Excavation more than 20 feet deep

Excavations more than 20' feet deep must be designed by an engineer educated and certified for excavation projects of this nature.

Before Excavations Take Place

- Review facility drawings/pipeline atlas.
- Place all calls to (One Call notification) with at least 48 hours' notice and document this call.
- Conduct line finding operations
- Probe or pothole all lines
- Consider electrical hazards especially near rectifiers
- Consult with persons that may have information about existing underground facilities
- If a utility company or owner cannot respond to a request to locate underground utility installations within 24 to 48 hours, or cannot determine the exact location of these installations, Global Inspection Services may proceed, provided supervisors and equipment operators exercise caution, and utilize detection equipment or other acceptable means to locate utility installations.

Hazard Recognition and Prevention

An excavation must be inspected daily by a Trenching/Excavation Competent Person, before anyone enters excavation or any work is done, and after every hazard-increasing occurrence (i.e., rainstorm, equipment vibration, or pipe move, etc.) to detect:

- Potential cave-ins
- Failure of protective systems and hazardous atmospheres
- Potential for personal injury
- Soil subsidence, cracking, shifting, or water undermining, and seepage indicate potential cave-ins.

- Tests should be conducted for air contaminants (oxygen, flammable gases etc. and provide ventilation where necessary.
- Employees must be protected from water accumulation. Such precautions could include a support or shield to protect against cave in, a pump to prevent accumulation, or a harness and lifeline. A competent person must inspect the integrity of the sides of a trench before work may commence where water accumulation is present.

If any hazard is identified, corrective action must be taken immediately.

Diversion ditches or dikes should be used to prevent natural drainage from entering an excavation. The Competent Person must determine the impact that any accumulated water in an excavation and the protective system being used prior to anyone entering the excavation.

Note: All Global Inspection Services Supervisors and persons responsible for erecting trenches have received Competent Person training and will follow all aspects of this training as well as each component of the Excavation Permit. These persons will conduct the daily excavation inspections.

Excavation Requirements and Precautions

- Ladders or ramps (earthen or structural) must be used to enter and exit excavations that are 4 feet deep or deeper.
- Ladders or ramps for access and egress must be positioned at no more than 25-foot intervals. Ladders will be secured at the top to prevent tipping or falling and extend at least 3 feet above grade.
- Keep heavy equipment and vehicles as far away from the edge of the excavation as practical.
- Keep spoil at least 2 feet away from the edge of the excavation.
- Do not lift loads over personnel and personnel should not work under loads while they are being lifted. This responsibility rests with both parties.
- Where employees are required or permitted to cross over excavations, walkways or bridges will have standard guardrails, mid rails, and toe boards.
- Unattended excavations must be barricaded. This includes leaving work at the end of the day. Post “Open Pit” signs in clear view along the barricade.
- Atmosphere monitoring is required on trenches 4 feet deep or more if there is a potential for explosive environments, low oxygen content, or other hazardous or toxic atmospheres.
- When trenching is conducted near vehicular hazards, employees will be provided orange or fluorescent green reflective vests. These vests are worn when hazards are present. If necessary, signs and barricades should be installed as well as flaggers and spotters.

Determining Pipeline Location

Probe bars should be used when probing through soil to identify underground facilities.

If any foreign facility is located within the area of proposed excavation, the exact location and depth of the facility should be determined:

- By probe inspections and hand-digging
- In the presence of the Global Inspection Services client/pipeline owner

- With as many test pits as necessary

If it is possible to determine (by electronic line locating devices or mechanical inspection probes) the approximate horizontal and vertical location of the facility, powered excavation equipment may be used during the initial excavation period. However, no powered excavating equipment will be used within a tolerance zone of 18 inches of a facility until its exact running depth (linear) and size are verified by actual probing rod inspection and placement of the probe rode at the line.

Probing should be used to identify additional lines that may not be identified in facility documentation. In some cases, hand digging may be the only way to do the work safely. If this is to be the chosen form of facility exposure, each person hand digging should be given adequate breaks and watched closely by the supervisor.

When the utility owners have not responded to the One Call notification within 48 hours of the call, Global Inspection Services may proceed, allowing that process is made cautiously and within the line locate parameters found elsewhere within this program. If the utility line locator does arrive to locate the line and cannot find it within 48 hours of the One Call notification, Global Inspection Services may proceed cautiously within the parameters outlined elsewhere in the program.

Excavation workers are exposed to many hazards, but the primary hazard is danger of cave-ins. Employees exposed to potential excavation cave-ins should be protected by sloping or benching the sides of the excavation, by supporting the sides of the excavation, or by placing a shield between the side of the excavation and the work area.

Soil Classification

The soil exposed by an excavation may be homogenous or composed of multiple layers with various stabilities. The stability of each layer must be classified as (in decreasing order of stability): Stable rock, Type A, Type B, or Type C. Soil types are defined below:

Stable Rock: Solid mineral matter that can be excavated with vertical sides and remain

Intact while exposed.

Type A Soil: Cohesive soils with an unconfined compressive strength of at least 1.5 tons per square foot (tsf). Examples are clay, silty clay, sandy clay, and clay loam. Soil cannot be classified Type A if it is fissured, subject to vibration, or previously disturbed.

Type B Soil: Cohesive soil with an unconfirmed compressive strength greater than .5 tsf. Type A soil that is fissured or subject to vibration.

Unstable rock: Material that is part of a sloped, layered system where the layers slant toward the excavation on a slope less steep than 4 horizontals to 1 vertical.

Type C Soil: Cohesive soil with an unconfined compressive strength of .5 tsf or less.

Includes:

- Granular soils like gravel, sand, sandy loam
- Unstable submerged rock

- Submerged soil
- Soil from which water is seeping
- Material in a sloped, layered system where the layers slant toward the excavation on a slope of 4 horizontal to 1 vertical or steeper.

“Mud” is not a soil classification. Soil must be classified based on a visual and a handbook analysis.

Visual Test

Observe the excavation site, soil adjacent, to the excavation, soil forming the sides of the excavation, and soil samples from excavated material.

Soil that is primarily composed of fine-grained material is considered cohesive: it will remain in clumps when excavated. Soil composed primarily of coarse-grained sand or gravel is granular material: it breaks up easily when excavated.

Check the sides and surface of the excavation for:

- Cracks (fissures)
- Fallen chunks of soil
- Layered systems
- Water run-off or seepage

Observe the excavation and the adjacent area for evidence of previously disturbed soil and sources of vibration (traffic or equipment).

Handbook Test

To estimate the unconfined compressive strength of cohesive soils, pick up a large clump of undisturbed soil and apply pressure to it with your thumb. The thumb can readily indent Type A soil but cannot easily penetrated it. With regular effort, the thumb can penetrate Type B soil. Type C soil is easily penetrated several inches by the thumb and can be molded by light finger pressure.

Soil must be re-classified when factors or conditions may change it in any way (i.e., rain, flooding, and vibration, etc.).

Excavating

Only qualified power equipment operators will be permitted to excavate in the proximity of an underground facility. Global Inspection Services prefers that a client representative be present when excavating in these situations.

Every reasonable precaution to prevent damage to underground facilities must be taken. Any accidental damage to pipe, coating, valves, corrosion protection wires, or other accessories must be reported immediately to the local supervisor. Damages requiring repair will be repaired before back filling.

Global Inspection Services Supervisors and client representatives will discuss covering the teeth of the bucket with a metal plate. This is a good practice and is encouraged by Global Inspection Services management.

Precautions must be taken to protect against the hazards of soil instability and unsafe accumulation of vapors. Trenches may be considered confined spaces and will go on confined space entry permits based on free product being visible, vapor/gas seepage is probable, and/or a hazardous atmosphere exists.

A protective sloping, shielding, or shoring system must be installed in excavations over 4 feet deep or as soil conditions warrant.

Protective Systems

Sloping

Where field conditions permit, sloping is the preferred protective system. The slope of an excavation face is expressed as the ratio of horizontal distance to vertical rise (H: V).

All unsupported excavations more than 4 feet deep must be sloped at an angle no steeper than the maximum allowable slope.

Maximum Allowable Slopes:

Soil/Rock Type	**Allowable Slope**
Stable rock	**Vertical (90°)**
Type A	¾: 1 (53°)
Type B	1:1 (45°)
Type C	1 ½: 1 (34°)

A short-term excavation (open 24 hours or less) in Type A soil that is 12 feet deep or less has a maximum allowable slope of ½: 1 (63°).

Maximum allowable slopes apply to layered soil conditions. However, when a less stable soil layer is located below a more stable soil layer, the less stable soil layer must determine the degree of slope for all the excavation above the layer.

Retaining barriers should be installed as needed on the excavation slope to stop and contain any falling rocks, materials, or equipment.

Benching

The maximum allowable slopes identified in the sloping section may not be exceeded when incorporating benching as a protective system.

Shielding Systems

Shielding systems are designed to protect employees in case of a cave-in. They are not designed to support the sides of an excavation.

Pre-manufactured shielding systems must be used in accordance with the manufacturer's recommendations and limitations.

Job-built shielding systems should be avoided, but if needed (narrow trenches), must be constructed in accordance with tabulated data designed or approved by a registered professional engineer.

Shields must be installed in a manner to restrict lateral movement.

Shields must be installed at least 18 inches above the top of the vertical side of the excavation.

Side excavations around a shield must not exceed 2 feet below the bottom of the shield.

Employees are not allowed in a shielding system when it is being installed, removed, or moved horizontally.

Shoring

An aluminum pneumatic, aluminum hydraulic, or timber shoring system must be installed in trenches, except stable rock, that are not protected with sloping or shielding.

Soil must be classified prior to installing a protective shoring system.

Support members of a shoring system may include cross braces, wales, uprights, and wood and steel sheeting.

Members of the support system must be securely connected, starting at the top of the excavation, and working downward.

The shoring system must be installed tight against the walls of the trench to avoid impact loading.

Keep all members of the shoring system as straight as possible. Do not walk or climb on support members.

Side excavations must not exceed 2 feet below the bottom of support members.

Removal of shoring must start at the bottom of the trench and work backward.

Backfilling must begin immediately after the removal of the shoring system. No personnel entry after the system is removed.

Waste Management Procedures

Global Inspection Services field personnel performing in a consultant capacity will

- ensure that all contractors have a waste management policy and that they adhere to their policy. Consultants will ensure this policy includes provisions that estimate all possible waste that can be generated to include trash and or scrap material.
- Global Inspection Services will also ensure that the contractor has means of capturing trash to include trash cans, waste containers and or dumpsters.

Global Inspection Services field personnel in the absence of a Contractor's written waste management policy will

- ensure that contractor supervisor conducts proper housekeeping standards to include proper handling of construction waste material, to insure it is stored properly thru use of

trash receptacles, storage bins and or dumpsters. GIS Consultant's will require contractors to take environmental conditions into account, i.e., weather, wind, or rain to prevent any ground contamination.

Global Inspection Services field personnel will

- ensure that the contractor removes all unused material from the job site and the area returned to its prior state.

Global Inspection Services consultants will

- remind all contractors that any hazardous materials that must be disposed of will be done so following all state and federal laws.

Global Inspection Services field personnel will

- remind all contract employees to recycle whenever possible. Global Inspection Services consultants will suggest that contractors provide separate trash receptacles for segregations of waste for recycling purposes.

All Global Inspection Services field personnel will receive "Waste Management Procedures" training during initial safety training at time of employment.