HSE Program

ASSIGNMENT OF RESPONSIBILITY

In accordance with OSHA regulations,

SOLOMON CORPORATION

has assigned responsibility and accountability for the administration of our "HSE Program" to:

CORPORATE EH&S MANAGER MIKE DAHL

Depending on your location, this HSE Program may also be referred to as SHE or EHS Program.

The Federal OSHA designation is "HSE;" however, you will notice that all terms are used.

A copy of the HSE Program is available upon request for our employees' review. Questions should be directed to supervision or management.

SAFETY SERVICES COMPANY®

Solomon Corporation

103 West Main Street – Solomon – Kansas – 67480

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RESPONSIBILITIES

Corporate EH&S Manager Mike Dahl is the designated Company Safety Coordinator.

POLICY

The Occupational Safety and Health Act of 1970 clearly defines the requirement to provide safe and healthful working conditions for all employees. Therefore, the safety and health of our employees is the first consideration in operating this business.

Safety and health in our business must be part of every operation. Without question, it is every employee's responsibility at all levels.

It is the intent of Solomon Corporation to comply with all laws. To do this, we must constantly be aware of conditions in all work areas that can produce injuries. No employees will be required to work at a job they know is not safe or healthful. Your cooperation in detecting hazards and, in turn, controlling them, is a condition of your employment. Inform your supervisor immediately of any situation beyond your ability or authority to correct.

The personal safety and health of each employee of Solomon Corporation is of primary importance. Prevention of occupationally induced injuries and illnesses is of such consequence that it will be given precedence over operating productivity, whenever necessary. To the greatest degree possible, management will provide all mechanical and physical activities required for personal safety and health, in keeping with the highest standards.

We will maintain an occupational safety and health program conforming to the best practices of organizations of this type. To be successful, such a program must embody proper attitudes towards injury and illness prevention on the part of supervisors and employees. It also requires cooperation in all safety and health matters, not only between supervisor and employee, but also between each employee and their co-workers. Only through such a cooperative effort, can a safety and health program, in the best interest of all, be established and preserved.

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

OUR SAFETY AND HEALTH PROGRAM INCLUDES:

- Providing mechanical and physical safeguards to the maximum extent possible
- Conducting a program of safety and health inspections to find and eliminate unsafe working conditions or practices, to control health hazards, and to fully comply with OSHA safety and health standards for every job
- Training all employees in good safety and health practices
- Providing necessary personal protective equipment, and instructions for proper use and care
- Developing and enforcing safety and health rules, and requiring that employees cooperate with these rules as a condition of employment
- Investigating, promptly and thoroughly, every accident to find out what caused it, and correct the problem so it will not happen again

WE RECOGNIZE THAT RESPONSIBILITIES FOR OCCUPATIONAL SAFETY & HEALTH ARE SHARED:

- This employer accepts responsibility for leadership of the safety and health program, for its effectiveness and improvement, and for providing the safeguards required to ensure safe work conditions
- Supervisors are responsible for developing proper attitudes toward safety and health in themselves and in those they supervise, and for ensuring that all operations are performed with the utmost regard for the safety and health of all personnel involved, including themselves
- Employees are responsible for wholehearted, genuine operations of all aspects of the safety and health program – including compliance with the rules and regulations – and for continuously practicing safety and health while performing their duties

Corporate EH&S Manager Mike Dahl will ensure that all employees are properly instructed and supervised in the safe operation of any machinery, tools, equipment, process, or practice that they are authorized to use or apply while at work.

Production is never so urgent that we cannot take the time to do our work safely.

PROGRAM GOALS

Why have a workplace “Safety and Health Plan”? Taking risks is part of running a business, particularly for small business owners. You take risks in product development, marketing, and advertising in order to stay competitive. However, some risks should never be taken. One of these is risking the *safety* and *health* of workers. Safety begins at the top and goes downward throughout The Company. The primary goal of Solomon Corporation is to continue operating a profitable business while protecting employees from injuries or illness. This can be achieved by delegating responsibility and accountability to all involved in Solomon Corporation*’s* operation.

- Responsibility: Having to answer for activities and results
- Accountability: The actions taken by management to ensure the performance of responsibilities

In other words, to reach our goal of a safe workplace, everyone needs to take responsibility and be held accountable.

BENEFITS OF ACHIEVING OUR GOALS ARE:

- Minimizing of injuries and accidents
- Minimizing the loss of property and equipment
- Elimination of potential fatalities
- Elimination of potential permanent disabilities
- Elimination of potential OSHA fines
- Reductions in Workers' Compensation costs
- Reductions in operating costs
- Having the best "Safety and Health" conditions possible in the workplace

MANAGEMENT COMMITMENT

Solomon Corporation is committed to building an effective injury and illness prevention plan, putting it in writing, and integrating it into the entire operation.

The management of Solomon Corporation is committed this safety policy, and to provide direction and motivation by:

- Appointing Safety Coordinator(s) and/or Safety Committee Chairmen
- Establishing Company safety goals and objectives
- Developing and implementing this written Safety and Health program
- Ensuring total commitment to the Safety and Health program
- Facilitating employees' safety training
- Establishing responsibilities for management and employees to follow
- Ensuring that management and employees are held accountable for performance of their safety responsibilities
- Establishing and enforcing disciplinary procedures for employees
- Reviewing the Safety and Health program annually, and revising or updating as needed

LABOR & MANAGEMENT ACCOUNTABILITY

All employees, both labor and management, need to understand their responsibilities under OSHA rules and be held accountable for complying with the rules as well as the Company's related policies.

It is the responsibility of Solomon Corporation to provide a safe and healthful work environment for their employees. However, holding everyone accountable for their part in workplace safety and health is critical for a successful injury and illness prevention plan.

ASSIGNMENT OF RESPONSIBILITY

The Safety Coordinator(s) and/or Safety Committee Members Solomon Corporation has designated:

Safety Coordinator	Corporate EH&S Manager Mike Dahl
Safety Coordinator	
Safety Committee Chair	
Safety Committee Vice-chairman	
Safety Committee Alternate Chair/Vice-chair	

Their cell phone and office phone numbers are:

Safety Person's Name	Office Phone #	Cell Phone #

Corporate EH&S Manager Mike Dahl will assist managers in initiating, educating, and executing the safety program with:

- Introducing the safety program to new employees
- Following up on recommendations, suggestions, etc., made at the "Weekly" safety meetings. All topics of safety concerns must be documented accordingly
- Assisting the personnel in the execution of standard policies
- Conducting safety inspections on a periodic basis
- Addressing all hazards or potential hazards as needed
- Preparing monthly accident reports and investigations
- Maintaining adequate and available first aid supplies and safety equipment
- Ensuring an adequate number of qualified "First Aid Certified" people on the work site
- Becoming thoroughly familiar with OSHA regulations and local and state safety codes
- Defining the responsibilities for safety and health of all subordinates and holding each person accountable for their results through the formal appraisal system and where necessary, disciplinary procedures
- Emphasizing the unnecessary personal and financial losses of all accidents

EMPLOYEE INVOLVEMENT

Employees are required to work in compliance with the safety rules, *report* all accidents and near misses, and report all unsafe conditions or unsafe practices. To demonstrate Solomon Corporation*'s* commitment to support the employees in these responsibilities, Solomon Corporation will do the following:

COMMUNICATION SYSTEM:

- Encourage employees to inform Solomon Corporation about workplace hazards without fear of reprisal
- Establish and maintain a centrally located "Safety Bulletin Board" where current, relevant information may be easily reviewed by employees
- Schedule general employee meetings where safety is freely and openly discussed by those present. These meetings will be regular, scheduled, and announced to all employees and managers to achieve maximum attendance. The purpose of these meetings is safety, and the concentration will be on:
  - Occupational accident and injury history at our work sites, with possible comparison to other locations within The Company
  - Feedback from the Safety Committee
  - Guest speakers concerned with workplace safety and health
  - When possible, brief audio-visual materials that relate to our business
- Conduct training programs for communicating with employees
- Provide a safety suggestion box so that employees, anonymously if desired, can communicate their concerns with management
- Document all communication efforts to demonstrate that an effective communication system is in place

HAZARD IDENTIFICATION & CONTROL

Periodic inspections and procedures for correction provide methods of identifying existing or potential hazards in the workplace, and eliminating or controlling them. Hazard control is essential to an effective injury and illness plan. We will be sure to look at safe work practices and ensure that they are being followed, and that unsafe conditions or procedures are identified and corrected properly and promptly.

Employees are encouraged to report possible hazardous situations, knowing their reports will be given prompt and serious attention. Workplace equipment and personal protective equipment will be maintained in good, safe working condition.

Hazards, where possible, will be corrected as soon as they are identified. For those that cannot be immediately corrected, a target date for correction will be set. Solomon Corporation will provide interim protection for workers while hazards are being corrected. A written tracking system will be established to help monitor the progress of the hazard correction process.

ACCIDENT/INCIDENT INVESTIGATION

Employers and safety committees are required to investigate or assign responsibility for investigating accidents. Trained individuals, with the primary focus of understanding why the accident or incident occurred, will investigate accidents/incidents and what actions can be taken to preclude recurrence. The focus will be on solutions and never on blame. They will be in writing, and adequately identify the causes of the accident or near miss occurrence.

WORKER TRAINING

Training is another essential element of any injury and illness prevention plan. OSHA rules require each employer to train workers for any job or task they are assigned.

Our plan includes training and instruction:

- For all employees when they are first hired
- For all new employees for each specific task
- For all employees given new job assignments for which training has not already been received
- Whenever new substances, processes, procedures, or equipment are introduced into the workplace and present a new hazard
- Whenever new personal protective equipment or different work practices are used on existing hazards
- Whenever Solomon Corporation is made aware of a new or previously unrecognized hazard
- For all supervisors to ensure they are familiar with the safety and health hazards to which employees under their immediate direction and control may be exposed

An effective safety and health plan requires proper job performance by everyone in the workplace.

It is the determination of Solomon Corporation to ensure that all employees are knowledgeable about the materials and equipment with which they work, what known *hazards* are present, and how they are controlled.

PROGRAM EVALUATION

Regular reviews will be held to look at the components of our safety and health plan, to determine what is working well and what changes, if any, are needed. All employees are encouraged to participate by keeping Solomon Corporation informed of their concerns regarding the elements of this safety and health plan.

The success of this safety and health plan is dependent upon two things: First, Solomon Corporation must provide a safe and healthful environment in which the employee has the opportunity to work safe, and second, the employee must choose to work *safe*.

SUPERVISOR/FOREMAN

The Supervisors and/or Foremen will establish an operating atmosphere to ensure that safety and health is managed in the same manner and with the same emphasis as production, cost, and quality control. This will be accomplished by:

- Regularly emphasizing that accident and health hazard exposure prevention are not only moral responsibilities, but also a condition of employment
- Identifying operational oversights that could contribute to accidents which often result in injuries and property damage
- Participating in safety and health related activities, (e.g. safety meetings, facility reviews, and correcting dangerous employee behavior)
- Explaining the safety policies and the hazards of each person's particular work
- Ensuring that initial orientation of "new hires" is properly carried out
- Making sure that if a "Competent Person" is required, that one is present to oversee, and instruct employees when necessary
- Never short-cutting safety for expediency, nor allowing workers to do so
- Consistently enforce safety rules and enforce discipline
- Conducting daily job-site inspections and correcting noted safety violations

EMPLOYEES

It is the duty of all employees to know the safety rules, and conduct their work in compliance with these rules. Disregard of the safety and health rules shall be grounds for disciplinary action up to and including termination. It is also the duty of each employee to make full use of the safeguards provided for their protection. Every employee will receive an orientation when hired and receive a copy of any Company Safety and Health Programs. Employee responsibilities include the following:

- Reading, understanding and following safety and health rules and procedures
- Signing the Code of Safe Practices and any other policy acknowledgements
- Wearing Personal Protective Equipment (PPE) at all times when working in areas where there is a possible danger of injury
- Wearing suitable work clothes as determined by the supervisor/foreman
- Performing all tasks safely as directed by their supervisor/foreman
- Reporting ALL injuries, no matter how slight, to their supervisor/foreman immediately and seeking treatment promptly
- Knowing the location of first aid, fire fighting equipment, and safety devices
- Attending any and all required safety and health meetings
- Not performing potentially hazardous tasks, or using any hazardous material until properly trained, and following all safety procedures for those tasks
- Stop and ask questions when unsure about how to safely do the work

POLICY

Solomon Corporation is committed to accident prevention in order to protect the safety and health of all our employees. Injury and illness losses due to hazards are needless, costly, and preventable. To prevent these losses, a joint management/worker safety committee will be established. Employee involvement in accident prevention and support of safety committee members and activities is necessary to ensure a safe and healthful workplace for all employees.

RESPONSIBILITIES

Solomon Corporation Safety Committee members are:

The Safety Committee will meet a minimum of 4 times per year.

COMMITTEE GOAL

Our Company will strive to meet the following goals:

- Minimize injury and illness in the workplace
- Open up the lines of communication between management and employees concerning safety at every level of The Company
- Improve safety of facilities(s) and equipment for a better work environment

MISSION STATEMENT

It is our Company and committee's goal to create clear avenues of communication among management and staff to create a safe working environment.

COMPANY COMMITMENT

Solomon Corporation is committed to excelling at safety, and will support the safety committee's purpose and recommendations.

COMMUNICATION OF SAFETY MATTERS

The committee will handle all safety issues with diligence. We hope to encourage an atmosphere where all employees report safety violations or concerns, ask questions, seek training, or come to us with any safety issues.

PURPOSE

The purpose of our safety committee is to bring workers and management together in a non-adversarial, cooperative effort to promote safety and health in the workplace. The safety committee will assist management and make recommendations for change.

ORGANIZATION

There will be, in most cases, an equal number of employee and employer representatives. However, there may be more employee representatives than employer representatives, if both groups agree. Employee representatives shall be volunteers or elected by their peers. If no employees volunteer or are elected, then they may be appointed by management. Employer representatives will be appointed. Safety committee members will serve a continuous term of at least one year.

Committee membership terms will be staggered so that at least one experienced member is always on the committee.

EXTENT OF AUTHORITY

It must be clearly understood that the safety committee advises management on issues that will promote safety and health in the workplace. Written recommendations are expected from the safety committee and they will be submitted to management. In turn, management will give serious consideration to the recommendations submitted and will respond in writing to the committee within a reasonable time.

FUNCTIONS

- Committee meetings and employee involvement
- Hazard assessment and control
- Safety and health planning
- Evaluation of accountability system
- Evaluation of management commitment to workplace safety and health
- Evaluation of accident and incident investigation program
- Safety and health training

RECOMMENDATIONS

All recommendations submitted to management must be written and should be clear and concise; provide reasons for implementation; give recommended options; show implementation costs and recommended completion dates; list benefits to be gained.

PROCEDURES

The committee's plan of action requires procedures by which the committee may successfully fulfill its role. Procedures developed should include but not be limited to:

- Meeting date, time, and location (Safety Committee Meeting Agenda)
- Election of chairperson and secretary
- Order of business
- Records (Safety Committee Meeting Minutes)

DUTIES OF EACH MEMBER MUST INCLUDE, BUT NOT BE LIMITED TO:

- Reporting unsafe conditions and practices
- Attending all safety and health meetings
- Reviewing all accidents and near-misses
- Recommending ideas for improving safety and health
- Working in a safe and healthful manner
- Observing how safety and health is enforced in the workplace
- Completing assignments given to them by the chairperson
- Acting as a work area representative in matters of health and safety
- Others as determined by Company safety and health needs

THE SAFETY COORDINATOR(S) AND/OR SAFETY COMMITTEE MEMBERS

Solomon Corporation has designated:

Safety Coordinator	Corporate EH&S Manager Mike Dahl
Safety Coordinator	
Safety Committee Chair	
Safety Committee Vice-chairman	
Safety Committee Alternate Chair/Vice-chair	

Their cell phone and office phone numbers are:

Safety Person's Name	Office Phone #	Cell Phone #

It is the duty of Corporate EH&S Manager Mike Dahl, the Safety Coordinator, to assist the Supervisor/Foreman and all other levels of Management in the initiation, education, and execution of an effective safety program.

PROCEDURES

The purpose of a safety committee is to bring workers and managers together to achieve and maintain a safe, healthful workplace. It is easy to start a safety committee, but developing an effective one – one that achieves and maintains a safe, healthful workplace – requires workers and managers who are committed to achieving that goal. Effective safety committees find solutions to problems that cause workplace accidents, illnesses, and injuries. Fewer accidents, injuries, and illnesses mean lower Workers' Compensation claims costs and insurance rates.

UNDERSTAND A SAFETY COMMITTEE'S SEVEN ESSENTIAL ACTIVITIES

Anyone can start a safety committee, but, to make it effective, the committee must be built on a foundation of management commitment and must be accountable for achieving its goals. The committee must do the following:

- Involve employees in achieving the committee's goals
- Identify workplace hazards
- Review reports of accidents and near misses
- Keep accurate records of committee activities
- Evaluate its strengths and weaknesses

COMMITMENT

The committee will not survive without management support. Management demonstrates support by encouraging employees to get involved in achieving a safe, healthful workplace and by acting on the committee's recommendations. Representatives demonstrate commitment by attending committee meetings, following through on their assigned tasks, and encouraging other employees to get involved in identifying hazards.

ACCOUNTABILITY

Representatives should understand that the committee expects them to contribute; each representative shares responsibility for accomplishing safety committee goals, which benefit everyone who works for The Company.

The safety committee is also responsible for monitoring how management holds employees accountable for working safely and for recommending ways to strengthen accountability.

EMPLOYEE INVOLVEMENT

To become effective, a safety committee needs help from everyone in The Company. The safety committee must have a method for employees to report hazards and to offer safety suggestions.

WAYS THE SAFETY COMMITTEE CAN ENCOURAGE EMPLOYEES TO GET INVOLVED:

- Encourage employees to report hazards and unsafe work practices to a safety-committee representative
- Act on employee suggestions and recognize their contributions to a safer workplace
- Promote the committee's activities and accomplishments

Make sure employees know that you are starting a safety committee. Tell them why you are starting the committee, describe its role in The Company's safety-and-health program, and explain management's commitment to the committee.

You can inform employees in a memo or a newsletter, by e-mail, or – better yet – meet with them to promote the committee and to answer questions.

HAZARD IDENTIFICATION

The safety committee plays an important role in keeping the workplace hazard-free:

- Ensure that representatives know how to recognize hazards and understand basic principles for controlling them
- Focus on identifying hazards and unsafe work practices that are likely to cause serious injuries
- Conduct thorough workplace inspections at least quarterly
- Document hazards during quarterly inspections and discuss how to control them at regular safety-committee meetings
- Include employer and employee representatives on the inspection team

ACCIDENT INVESTIGATION

The committee must have a procedure for investigating all workplace accidents, illness, and deaths. It is not necessary for the committee to conduct accident investigations or to participate in investigations; however, the committee should ensure that management does so. The committee should also carefully review accident reports to help management identify accident causes and determine how to control them.

RECORDKEEPING

You may not think of record keeping as an essential activity, but accurate, well-organized records document the committee's accomplishments and can inform the committee what it needs to do to improve.

The following documents are required for the safety committee's file:

- Accurate minutes of each safety committee meeting
- Committee reports, evaluations, and recommendations
- Management's response to committee recommendations
- Employee safety suggestions and hazard concerns

EVALUATION

Evaluation answers the question "Are we effective?" Effective safety committees periodically evaluate their strengths and weaknesses, and the evaluation helps them set new goals.

At least once a year, schedule a half-day safety-committee meeting to accomplish the following: identify the committee's achievements over the past 12 months, review essential activities, and set goals for the next 12 months.

POLICY

Solomon Corporation will maintain a “Safety and Health Program” conforming to the best practices of organizations of this type. To be successful, such a program must embody the proper attitudes toward injury and illness prevention on the part of supervisors and employees. It also requires cooperation in all safety and health matters, not only between supervisor and employee, but also between each employee and his or her co-workers. Only through such a cooperative effort, can a safety program in the best interest of all be established and preserved. Safety and health in our business must be a part of every operation.

Corporate EH&S Manager Mike Dahl is responsible for the implementation and enforcement of the following safety rules. Disciplinary procedures will be enforced.

THE COMPANY SAFETY & HEALTH PROGRAM INCLUDES:

- Providing mechanical and physical safeguards to the maximum extent possible
- Conducting a program of safety and health inspections to find and eliminate unsafe working conditions or practices, to control health hazards, and to comply fully with the safety and health standards for every job
- Training all employees in good safety and health practices
- Providing necessary personal protective equipment and instructions for its use and care
- Developing and enforcing safety and health rules and requiring that employees cooperate with these rules as a condition of employment
- Investigating, promptly and thoroughly, every accident to find out what caused it and to correct the problem so that it will not happen again
- Setting up a system of recognition and awards for outstanding safety service or performance

RESPONSIBILITIES

We recognize that the responsibilities for safety and health are shared:

- Solomon Corporation accepts the responsibility for leadership of the safety and health program, for its effectiveness and improvement, and for providing the safeguards required to ensure safe conditions
- *Supervisors* are responsible for developing the proper attitudes toward safety and health in themselves and in those they supervise, and for ensuring that all operations are performed with the utmost regard for the safety and health of all personnel involved, including themselves
- *Employees* are responsible for wholehearted, genuine operation with all aspects of the Safety and Health Program including compliance with all rules and regulations – and for continuously practicing safety while performing their duties

GENERAL SAFETY RULES

Solomon Corporation employees shall follow these safe practice rules, render every possible aid to safe operations, and report all unsafe conditions or practices to their supervisor.

- *Failure to abide* by the Code of Safe Practices may result in disciplinary action up to and including termination
- *Supervisors shall* insist that employees observe and obey every rule, regulation, and order necessary to the safe conduct of the work, and shall take such action necessary to obtain compliance.
- *If you are unsure* of the safe method to do your job, STOP and ask your supervisor. Ignorance is no excuse for a safety violation
- *All employees shall* be given frequent accident prevention instructions. Instructions, practice drills, or articles concerning workplace safety and health shall be given at least once every 5 working days
- *No one shall knowingly* be permitted to work while the employee's ability or alertness is impaired by fatigue, illness, and prescription or over the counter drugs. Employees who are suspected of being under the influence of illegal or intoxicating substances, impaired by fatigue or an illness, shall be prohibited from working
- *Employees should* be alert to see that all guards and other protective devices are in proper places and adjusted, and shall report deficiencies. Approved protective equipment shall be worn in specified work areas
- *Horseplay, scuffling, fighting* and other acts are prohibited
- *Work shall be* well-planned and supervised to prevent injuries when working with equipment and handling heavy materials
- *Workers shall not* handle or tamper with any electrical equipment, machinery, or air or water lines in a manner not within the scope of their duties, unless they have received instructions from their supervisor. Do not attempt operate equipment until you are fully trained and authorized
- *Keep your work area clean,* free of debris, electrical cords, and other hazards. Immediately clean up spilled liquids
- *Always notify* all other individuals in your area who might be endangered by the work you are doing
- *A red tag system* identifies equipment that is NOT to be operated, energized, or used. All lock-out/tag-out notices and procedures must be observed and obeyed
- *Do not block exits,* fire doors, aisles, fire extinguishers, first aid kits, emergency equipment, electrical panels, or traffic lanes
- *Do not leave tools,* materials, or other objects on the floor that might cause others to trip and fall.
- *Do not distract others* while working. If conversation is necessary, make sure eye contact is made prior to communicating

- *Employees shall not* enter manholes, underground vaults, chambers, tanks, silos, or other similar places that receive little ventilation, unless it has been determined that it is safe to enter. Confined space protocols will be followed
- *Materials, tools, or other objects* shall not be thrown from buildings or structures until proper precautions are taken to protect others from the falling objects
- *Employees shall cleanse thoroughly* after handling hazardous substances, and follow special instructions from authorized sources
- *Gasoline or other flammable liquids* shall not be used for cleaning purposes
- *No burning, welding, or other source* of ignition shall be applied to any enclosed tank or vessel, even if there are some openings, until it has first been determined that no possibility of explosion exists, and authority for the work is obtained from the foreman or superintendent
- *Any damage to scaffolds,* falsework, or other supporting structures shall be immediately reported to the foreman and repaired before use
- *Possession of firearms,* weapons, illegal drugs or alcoholic beverages on Company or customer property or the job site is strictly prohibited
- *All injuries shall* be reported promptly to your supervisor so that arrangements can be made for medical and/or first-aid treatment

ENFORCEMENT OF SAFETY POLICIES

The compliance of all employees with Solomon Corporation Safety and Health Program is mandatory and shall be considered a condition of employment. All safety rules, procedures, and plans in effect are to be followed as specified in the safety program. Employees found to be in violation of Company safety policy may be subject to penalty.

Corporate EH&S Manager Mike Dahl is the supervisor for disciplinary actions and any employee in a position of management or supervisory capacity may initiate disciplinary action against any employee found to be in violation of Company policy. Not following verbal or written safety procedures, guidelines, rules, horseplay, failure to wear selected Personal Protective Equipment (PPE), and/or abuse of selected PPE, constitutes a safety violation.

The following outlines the disciplinary measures that will be taken against employees found to be in violation:

Periodic safety inspections of the workplace and equipment will be undertaken to ensure that all personnel, including supervisory positions, are demonstrating the required commitment to safety. A general neglect of safe work procedures, practices, and requirements in the workplace, or neglect of equipment safety, will be viewed as a lack of supervisory enforcement of safety policy and the appropriate supervisor/management personnel will be subject to the same disciplinary procedures described below.

The following programs will be utilized to ensure employee compliance with the safety program and all safety rules: training programs, retraining, optional safety incentive programs, disciplinary action.

TRAINING PROGRAMS

The importance of safe work practices and the consequences of failing to abide by safety rules will be covered in the New Employee Safety Orientation and at Tailgate/Toolbox Safety Training. This will help ensure that all employees understand and abide by The Company's safety policies.

RETRAINING

Employees that are observed performing unsafe acts or not following proper procedures or rules will be retrained by their foreman or supervisor. A Safety Contact Report may be completed by the supervisor to document the training. If multiple employees are involved, additional safety meetings will be held.

SAFETY INCENTIVE PROGRAMS

Although strict adherence to safety policies and procedures is required of all employees, The Company may choose to periodically provide recognition of safety-conscious employees and jobsites without accidents through a safety incentive program.

DISCIPLINARY ACTION

The failure of an employee to adhere to safety policies and procedures established by Solomon Corporation can have a serious impact on everyone concerned. An unsafe act can threaten not only the health and well-being of the employee committing the unsafe act but can also affect the safety of his/her coworkers and/or customers. Accordingly, any employee who violates any of The Company's safety policies will be subject to disciplinary action.

When a “Safety Violation Notice” is issued, appropriate supervisory personnel will meet with employee(s) to discuss the infraction and inform individual(s) of the rule or procedure that was violated and the corrective action to be taken.

Note: Failure to promptly report any on-the-job accident or injury, on the same day as occurrence, is considered a serious violation of The Company’s Code of Safe Practices. Any employee who fails to immediately report a work-related accident or injury, no matter how minor will be subject to disciplinary action.

Employees will be disciplined for infractions of safety rules and unsafe work practices that are observed, not just those that result in an injury. Often, when an injury occurs, the accident investigation will reveal that the injury was caused because the employee violated an established safety rule and/or safe work practice(s).

In any disciplinary action, the foreman should be cautious that discipline is given to the employee for safety violations, and not simply because the employee was injured on the job or filed a Workers’ Compensation claim.

Violations of safety rules and the Code of Safe Practices are to be considered equal to violations of other Company policy. Discipline for safety violations will be administered in a manner that is consistent with The Company's system of progressive discipline. If, after training, violations occur, disciplinary action will be taken as follows:

1. *Oral warning.* Documented, including date and facts on the "Safety Warning Report" form. Add any pertinent witness statements. Restate the policy and correct practice(s)
2. *Written warning.* Retrain as to correct procedure/practice
3. Written warning with suspension
4. Termination

As in all disciplinary actions, each situation is to be carefully evaluated and investigated. The particular step taken in the disciplinary process will depend on the severity of the violation, employee history, and regard to safety. Foremen and superintendents should consult with the office if there is any question about whether or not disciplinary action is justified. Employees may be terminated immediately for willful or extremely serious violations. Union employees are entitled to the grievance process specified by their contract.

Note: Consistency in the enforcement of safety rules will be exercised at all times.

POLICY

Solomon Corporation is committed to appropriately investigating all near misses, accidents, and incidents according to their severity to find the root cause and make changes that prevent it from happening again.

RESPONSIBILITIES

Accident investigation and reporting is a responsibility shared between the Company and its employees. Corporate EH&S Manager Mike Dahl is responsible for establishing the Incident Investigation and Reporting policy before there is an incident.

EMPLOYER RESPONSIBILITIES

- Ensuring appropriate staff receive suitable training to carry out their role in hazard and incident reporting, investigation and recording
- Completing training for Incident Investigation
- Promptly investigating incidents
- Implementing identified risk control measures to prevent recurrence of incidents
- Consulting with staff in relation to the measures to be taken to prevent recurrence of incidents
- Reviewing hazard/incident reports to ensure that all recommendations are implemented
- Ensuring, as far as is reasonably practicable, that adequate financial provision and other resources are made available to institute the recommended actions

SAFETY COMMITTEE RESPONSIBILITIES

Safety committee members are encouraged to participate in investigations of incidents and assist with the development of measures to prevent their recurrence.

- Personnel must be trained in their roles and responsibilities for incident response and incident investigation techniques
- Training requirements relative to incident investigation and reporting (Awareness, First Responder, investigation, and training frequency) should be identified in this program

EMPLOYEE RESPONSIBILITIES

- Not placing themselves or others at risk of injury
- Reporting incidents to their supervisor or manager, and health and safety representative (if applicable), as soon as possible after the event
- Participating in the development of appropriate risk control measures to prevent recurrence of similar incidents
- Using risk control measures as required and any other action taken, which is designed to protect health and safety

TRAINING

All personnel will receive, as part of their training in avoiding and preventing accidents and injuries, instruction concerning their roles and responsibilities in the event of an accident or incident. This training should include:

- What qualifies as reportable accidents or incidents (and near-misses)
- Who should be contacted in the event of a reportable incident
- An explanation of the accident/incident investigation plan
- Incident investigation techniques and employee responsibilities during and after an incident/accident

PROCEDURES

Solomon Corporation will investigate all lost-time injuries. Fatalities and catastrophes must be reported to OSHA within 8 hours. Serious accidents must be reported to OSHA within 24 hours. OSHA requires reporting of work related incidents resulting in the death of an employee or the hospitalization of one or more employees. Owner clients require all incidents to be reported including, but not limited to, injuries, spills, property damage, fires, explosions, and vehicle damage.

Accidents and near miss incidents that result in personal injury, property damage, chemical spill, or other emergencies will be immediately reported to the assigned supervisor at the time of the event and Emergency Medical Service, Fire Department, or Hazmat Services will be immediately summoned. Such events will be investigated and documented on the appropriate Company form. All forms will be fully completed and submitted to Corporate EH&S Manager Mike Dahl for review and for discussion at the next scheduled Safety Committee meeting. These investigations demonstrate the company's commitment to providing a safe and healthful work environment. Disciplinary Policy will be enforced.

To ensure accidents will be reported, employees must be encouraged to participate in the "fact-finding" process. The point emphasized must be that "hazardous conditions" and "unsafe practices" are an indication of a much bigger problem with a breakdown in the safety and health policy. The purpose of the accident investigation then becomes one that will uncover these system problems and provide solutions that will result in long-term corrective action.

It is important to gather facts and interview witnesses as soon as possible after an accident to ensure the most accurate information is being recorded. The efficiency of the corrective measures is determined by the accuracy of the information gathered. The best place to conduct an interview is wherever the employee being interviewed feels most comfortable. The most important interviewing technique you can use to ensure accuracy is to "listen".

Note: Consider the event a "serious accident" if an employee is admitted to a hospital for treatment or observation because of injuries suffered from a workplace accident.

ON SITE FIRST RESPONSE

Employees who could be first responders should be trained and qualified in first aid techniques to control the degree of loss during the immediate post-incident phase.

PREVENT FURTHER LOSS

After an immediate rescue, Solomon Corporation will take actions to prevent further loss. For example:

Maintenance personnel should be summoned to assess integrity of building and equipment, engineering personnel to evaluate the need for bracing of structures, and special equipment/response requirements such as safe rendering of hazardous materials or explosives employed.

SECURE THE ACCIDENT/INCIDENT SCENE

For a serious accident, the first action the accident team needs to take is to secure the accident scene so material evidence is not moved or removed. Material evidence has a tendency to walk off after an accident. If the accident is quite serious, OSHA may inspect and require that all material evidence be marked and remain at the scene of the accident

REPORTING REQUIREMENTS

Local reporting sequence of events

Injuries

If a fatal injury, illness, or hospitalization of one (1) or more employees occurs, the plant manager will immediately notify the following persons and agency:

- Corporate Environmental Health and Safety (EHS) Director
- Division Manager (or any superior in this level)
- Group Manager or Team Leader (or any superior in this level)
- The area OSHA office (must be notified within 8 hours)

Involving the Environment

If an environmental incident occurs that must be reported to local, state, and/or federal agencies, the following persons should be notified:

- Corporate EHS Director
- Division Manager (or any superior in this level)
- Group Manager or Team Leader (or any superior in this level)
- Appropriate local, state and/or federal agency

TIME ELEMENTS OF WHEN INCIDENT SHOULD BE REPORTED

Solomon Corporation is required to verbally report incidents to OSHA within 8 hours of discovery. Incidents must be reported to owner client as soon as possible (or within 24 hours).

REPORTABLE INCIDENTS

- injury, illness, death, hospitalization of employees
- spills, property damage, fires, explosions, vehicle damage

ACCIDENT/INCIDENT CAUSES

Accidents occur when hazards escape detection during preventive measures, such as a job or process safety assessment, when hazards are not obvious, or as the result of combinations of circumstances that were difficult to foresee. A thorough accident investigation may identify previously overlooked physical, environmental, or process hazards, the need for new or more extensive safety training, or unsafe work practices.

The primary focus of any accident investigation should be the determination of the facts surrounding the incident and the lessons that can be learned to prevent future similar occurrences. The focus of the investigation should NEVER be to place blame. The process should be positive and thought of as an opportunity for improvement.

WHEN ACCIDENT/INCIDENT INVESTIGATIONS ARE REQUIRED

As a rule, investigations should be conducted for:

- All injuries (even the very minor ones)
- All accidents with potential for injury
- Fires, explosions, Spills
- Property and/or product damage situations
- All “Near Misses” where there was potential for serious injury

Near-miss and incident reporting and investigation allow you to identify and control hazards before they cause a more serious incident. Accident/incident investigations are a tool for uncovering hazards that either were missed earlier or hazards where controls were defeated. However, it is important to remember that the investigation is only useful when its objective is to identify root causes. In other words, every contributing factor to the incident must be uncovered and recommendations made to prevent recurrence.

ACCIDENT/INCIDENT INVESTIGATION PLAN

When a serious accident occurs in the workplace, everyone will be too busy dealing with the emergency at hand to worry about putting together an investigation plan, so the best time to develop effective accident investigation procedures is before the accident occurs. Part of an effective Accident and Incident Investigation Plan is to assign responsibilities

THE PLAN SHOULD INCLUDE PROCEDURES THAT DETERMINE:

- Who should be notified of accident?
- Who is authorized to notify outside agencies? (fire, police, etc.)
- Who is assigned to conduct investigations?
- Training required for accident investigators:
- Who receives and acts on investigation reports?
- Timetables for conducting hazard correction.

GATHER INFORMATION

The next step is to gather useful information about what directly and indirectly contributed to the accident.

The proper equipment will be available to assist in conducting an investigation, writing equipment such as paper, pens, pens, measuring equipment, cameras, small tools, audio recorder, Personal Protective Equipment (PPE), marking devices such as flags, equipment manuals, etc.

The following tools should be used to gather as much information as possible:

- Locate witnesses, ensuring unbiased testimony, & obtain appropriate interviewing location
- To ensure detailed interviews, interviewers must be trained
- Interview eyewitnesses as soon as possible after the accident. Interview witnesses separately, never as a group. Statements must be collected
- Interview other interested persons such as supervisors, co-workers, etc.
- Follow-up interviews with all witnesses
- Review related records such as: training records, disciplinary records, medical records, maintenance records, OSHA 300 log, safety committee records

Document the scene with photographs, videotape, or sketches AND appropriate measurements.

EVIDENCE

Initial Identification of evidence immediately following the incident will include a listing of People, equipment, and materials involved and a recording of factors such as weather, illumination temperature, noise, ventilation, Etc.

Solomon Corporation must keep a collection of evidence, and ensure that it is preserved and secure. Evidence such as people, positions of equipment, parts, and papers must be preserved, secured, and collected through, notes, photographs, witness statements, flagging, and impounding of documents and equipment.

DEVELOP A SEQUENCE OF EVENTS

Use the information gathered to develop a detailed description of the accident. Make sure the accident is documented in enough detail to enable an individual unfamiliar with the situation to envision the sequence of events. Do not just describe the accident itself; include a description of events that led up to the accident.

ANALYZE THE ACCIDENT/INCIDENT

The next step is to determine the cause(s) of the accident. This is the most difficult step because first, the events must be analyzed to discover surface cause(s) for the accident, and then, by asking “why” a number of times, the related root causes are uncovered. Remember, surface causes are usually obvious and not too difficult to determine. However, it may take a great deal more time to accurately determine the weaknesses in the management system, or root causes, that contributed to the conditions and practices associated with the accident.

SURFACE CAUSES

The surface causes of accidents are those hazardous conditions and individual unsafe employee/manager behaviors that have directly caused or contributed in some way to the accident.

HAZARDOUS CONDITIONS MAY EXIST IN ANY OF THE FOLLOWING CATEGORIES:

- Materials
- Machinery
- Equipment
- Tools
- Chemicals
- Environment
- Workstations
- Facilities
- People
- Workload

It is important to know that most hazardous conditions in the workplace are the result of unsafe behaviors that produced them. Individual unsafe behaviors may occur at any level of the organization.

SOME EXAMPLE OF UNSAFE EMPLOYEE/MANAGER BEHAVIORS INCLUDE:

- Failing to comply with rules
- Using unsafe methods
- Taking shortcuts
- Horseplay
- Failing to report injuries
- Failing to report hazards
- Allowing unsafe behaviors
- Failing to train
- Failing to supervise
- Failing to correct
- Scheduling too much work
- Ignoring worker stress

ROOT CAUSES

The root causes for accidents are the underlying system weaknesses that have somehow contributed to the existence of hazardous conditions and unsafe behaviors that represent surfaces causes of accidents. Root causes always pre-exist surface causes. Inadequately designed system components have the potential to feed and nurture hazardous conditions and unsafe behaviors. If root causes are left unchecked, surface causes will flourish! Root causes may be separated into two categories:

SYSTEM DESIGN WEAKNESSES

Missing or inadequately designed policies, programs, plans, processes, and procedures will affect conditions and practices generally throughout the workplace. Defects in system design represent hazardous system conditions.

SYSTEM IMPLEMENTATION WEAKNESSES

Failures to initiate, carry out, or accomplish safety policies, programs, plans, processes, and procedures. Defects in implementation represent ineffective management behavior.

System design weaknesses: missing or inadequate safety policies/rules; training program not in place; poorly written plans; inadequate process; no procedures in place; develop preventive actions.

System implementation weaknesses: safety policies/rules are not being enforced; safety training is not being conducted; adequate supervision is not conducted; incident/accident analysis is inconsistent; lockout/tagout procedures are not reviewed annually.

CORRECTIVE ACTIONS

All of the work done to this point culminates with recommendations to prevent similar accidents from happening in the future. Recommendations should relate directly to the surface and root causes of the accident. These recommendations should include recommended actions such as:

- Assigned responsibilities relative to the corrective actions
- Actions should be tracked to closure
- Engineering controls (for example, local exhaust ventilation or use of a lift assisting device)
- Work practice controls (for example, pre-plan work, and remove jewelry and loose fitting clothing before operating machinery)
- Administrative controls (e.g., standard operating procedures or worker rotation)
- Personal protective equipment (for example, safety glasses or respirators)

It is crucial that, after making recommendations to eliminate or reduce the surface causes, that the same procedure is used to recommend actions to correct the root causes. If root causes are not corrected, it is only a matter of time before a similar accident occurs.

WRITTEN INCIDENT REPORT

Written incident reports should be prepared and include an incident report form and a detailed narrative statement concerning the event. The format of the narrative may include an introduction, methodology, summary of the incident, investigation board members names, narrative of the event, findings, and recommendations. Photographs, witness statements, drawings, etc. should be included

DOCUMENTATION AND COMMUNICATIONS OF LESSONS LEARNED

Lessons learned should be reviewed and communicated. Changes to processes must be placed into effect to prevent reoccurrences or similar events.

SUMMARY

A successful accident investigation determines not only what happened, but determines how and why the accident occurred. Investigations are crucial as an effort to prevent a similar or perhaps more disastrous sequence of events.

Research has shown that a typical accident is the result of many related and unrelated factors that somehow all come together at the same time. Usually ten or more factors contribute to a serious accident. Although, this combination of factors normally makes an investigation very time consuming and resource intensive, the good news is that the accident can normally be prevented by removing only a few of the contributing factors.

POLICY

Solomon Corporation has adopted this program for employee safety on or around “Vehicle Mounted Elevating and Rotating Work Platforms” also known as Elevating Work Platforms (EWP).

REFERENCES

- §1910.67 – Vehicle-Mounted Elevating and Rotating Work Platforms
- §1926.453 – Aerial Lifts
- §1926.952 – Aerial Devices Working Near Energized Lines or Equipment

RESPONSIBILITIES

Solomon Corporation has implemented and enforces these work practices and procedures to assure that no employee will be exposed to hazards during aerial lifting operations.

Corporate EH&S Manager Mike Dahl is designated by Solomon Corporation as the Competent Person in authority over all aerial device work procedures. Corporate EH&S Manager Mike Dahl will ensure that all safety measures and systems are in place and correctly installed, all safety procedures are adhered to, and ensure regular inspections of the operational site and aerial equipment are made. Only authorized personnel are permitted to operate an aerial lift.

RESPONSIBILITIES DURING ELEVATING WORK PLATFORM OPERATIONS

Because elevating work platforms are often rented from an equipment supplier, there is confusion as to the responsibilities of the parties involved.

THE OWNER OR SUPPLIER MUST ENSURE THAT THE MACHINE:

- Is maintained in good operating condition
- Conforms to appropriate regulations and standards
- Includes the operator’s manual and correct load rating charts

SOLOMON CORPORATION AND SUPERVISORS ON THE PROJECT MUST:

- Ensure that the operator is trained and competent to operate his equipment
- Ensure that the machine has the correct load rating capacity for the job
- Maintain the equipment and all its protective devices
- Maintain a daily inspection log for each platform
- Ensure that workers use appropriate personal protective equipment
- Keep the manufacturer’s operating manual with the equipment
- Train workers on each type of equipment that they will be using
- Use watchmen or cones to direct traffic(away from the equipment when in use)

THE OPERATORS AND WORKERS USING THE EQUIPMENT MUST:

- Receive adequate training to be fully competent
- Only operate the machine when competent
- Operate the machine in a safe manner as prescribed by the manufacturer and according to Company safety and health policies
- Inspect the equipment each day or each shift before use
- Perform function tests before use
- Report any defects to the supervisor
- Read, understand, and obey the manufacturer's safety rules, including the operating manual and warning decals. When a defect is reported to the supervisor, the equipment must be taken out of service until the repairs are completed and the equipment is inspected and approved for use

TRAINING

Corporate EH&S Manager Mike Dahl will verify that all employees are trained in and familiar with required work practices and procedures in the use of any equipment required, proper Personal Protective Equipment (PPE), and safety procedures which must be followed to safeguard personnel involved in aerial lifting operations or who work in the vicinity of aerial lifting operations.

DEFINITIONS

Aerial Device or Aerial Work Platform – means any vehicle-mounted device, telescoping or articulating or both, that is designed and manufactured to raise personnel to an elevated work position on a platform supported by scissors, masts, or booms.

Aerial Ladder – means an aerial device that consists of a single- or multiple-section rung ladder.

Articulating Boom Platform – means an aerial device that has two or more hinged boom sections.

Authorized Person – means a person who is approved and assigned to perform specific types of duties by the employer and who is qualified to perform those duties because of his or her training or experience.

Boom – An elevating member, the lower end of which is so attached to a rotating or non-rotating base that permits elevation of the free or outer end in vertical plane.

Commercial Chassis – means a vehicle that is built for over-the-road (roadway) travel.

Elevating Work Platform – A device designed to elevate a platform in a substantially vertical axis (Vertical Tower, Scissor Lift).

Insulated Aerial Device – means an aerial work platform that is designed with dielectric components to meet specific electrical insulating ratings for work on or near energized lines and apparatus.

Platform – means the portion of an aerial work platform, such as a bucket, basket, stand, cage, or the equivalent, that is designed to be occupied by personnel and is a component of an aerial device.

Qualified Person – means a person who possesses a recognized degree, certificate, professional standing, or skill and who, by knowledge, training, and experience, has demonstrated the ability to deal with problems relating to the subject matter, the work, or the project.

Qualified Line Clearance Tree Trimmer – means an employee trained to work in proximity of energized power transmission and distribution lines. An employee in a training program is included in this definition.

SAFE PRACTICES

- Aerial lifts must be designed and constructed in conformance with the applicable requirements of the American National Standards for "Vehicle Mounted Elevating and Rotating Work Platforms", ANSI A92.2.
- Each work platform will be inspected, maintained, repaired, and kept in proper working order in accordance with the manufacturer's maintenance and repair manuals

On a daily basis, before the work platform is used, it must be given a thorough inspection, which will include:

- Inspection for defects such as cracked welds, hydraulic leaks, damaged control cable, loose wire connections, and tire damage
- Inspection of functional controls for proper operation
- Lift controls will be tested each day prior to use to determine that such controls are in safe working condition
- Tests will be made at the beginning of each shift during which the equipment is to be used to determine that the brakes and operating systems are in proper working condition
- Critical safety components of mechanical elevating and rotating equipment whose failure would result in a free fall or free rotation of the boom will receive a thorough visual inspection before use on each shift
- Vehicles will have a reverse signal alarm audible above the surrounding noise level or the vehicle will be backed up only when an observer signals that it is safe to do so
- For power lines rated 50 kV. or below, minimum clearance between the lines and any part of the crane or load will be 10 feet
- Any suspect items discovered through inspection must be carefully examined and a determination made by a qualified service person as to whether they constitute a safety hazard. All unsafe items must be corrected before further use of the work platform
- Any work platform not in safe operating condition will be removed from service until it is repaired. All repairs will be made by a qualified service person in conformance with the manufacturer's operating, maintenance, and repair manuals

- Aerial lifts may be "field modified" for uses other than those intended by the manufacturer provided the modification has been certified in writing by the manufacturer or by any equivalent entity
- Manufacturer’s boom, basket, and platform load limits will not be exceeded
- Each work platform will be equipped with a mechanical parking brake, which will hold the unit on any slope it is capable of climbing. When possible, wheel chocks will be installed before using an aerial lift on an incline
- Employees will always stand firmly on the floor of the basket, and will not sit or climb on the edge of the basket or use planks, ladders, or other devices for a work position.
- Approved fall protection will be worn and a lanyard attached to the boom or basket when working from an aerial lift.
- No aerial vehicular equipment having an obstructed view to the rear may be operated on off-highway jobsites where any employee is exposed to the hazards created by the moving the vehicle, unless the vehicle has a reverse signal alarm audible above the surrounding noise level or the vehicle is backed up only when a designated employee signals that it is safe to do so
- Aerial vehicular equipment provided with outriggers will be operated with the outriggers extended and firmly set as necessary for the stability of the specific configuration of the equipment. Outriggers may not be extended or retracted outside of clear view of the operator unless all employees are outside the range of possible equipment motion
- When the work area or the terrain prevents the use of outriggers, the equipment may be operated only within its maximum load ratings for the particular configuration of the equipment without outriggers
- Mechanical elevating and rotating equipment used to lift or move material will be used within its maximum load rating and other design limitations for the conditions under which the work is being performed
- A designated employee other than the equipment operator will observe the approach distance to exposed lines and equipment and give timely warnings before the minimum approach distance is reached

The following clearances will be maintained when operating aerial work platforms or other equipment under, over, by, or near energized electric power lines:

Before using the work platform, the operator will:

- Read and understand the manufacturer's operating instructions and safety rules, and be trained on them by a qualified person
- Read and understand all decals, warnings, and instructions on the work platform
- Before the work platform is used, the operator will survey the area for hazards such as: untamped earth fills; ditches; drop-offs or holes; bumps and floor obstructions; debris; overhead obstructions and high voltage conductors; other possible hazardous conditions

Before each elevation of the work platform, the operator will:

- Check for overhead obstructions and high-voltage conductors. A minimum distance of ten feet from energized high-voltage conductors must be maintained at all times between the conductors and the operator and platform equipment
- Ensure that the load and its distribution on the platform are in accordance with the manufacturer's rated capacity. The manufacturer's recommended load limits must never be exceeded
- Ensure outriggers and stabilizers are used according manufacturer's instructions
- Ensure that guardrails are properly installed and gates are closed

Before and during driving while the platform is elevated, the operator will:

- Be required to look in the direction of, and keep a clear view of, the path of travel and assure that the path of travel is firm and level
- Maintain a safe distance from obstacles, debris, drop-offs, holes, depressions, ramps, or other hazards to safe elevated travel
- Maintain a safe distance from overhead obstacles
- The operator will limit travel speed according to conditions. Conditions to be observed are: Ground surface, congestion, slope, location of personnel, and other factors that may create a hazard of collision or injury to personnel
- Personnel will maintain a firm footing on the platform while working thereon unless they are secured by safety harness and lanyard devices fixed to manufacturer-approved anchor points. Use of railings or planks, ladders or any other device on the work platform for achieving additional height is prohibited
- The operator will immediately report defects or malfunctions which become evident during operation and must stop use of the work platform until correction has been made
- Altering or disabling of safety devices or interlocks is prohibited
- Stunt driving and horseplay is prohibited
- An aerial device that does not meet the requirements will not be used unless it has been inspected and modified as required to conform to the essential stability, structural, electrical insulation, and operational requirements of ANSI A92.2

Each aerial device placed in service will have a conspicuously displayed legible plate or other legible marking verifying the aerial device is designed and manufactured in accordance with the following applicable specifications:

- *ANSI Standard A92.2*, "Vehicle-Mounted Elevating Work Platforms", which applies to vehicle-mounted devices installed on commercial chassis and covers the following type of units:
- Extensible boom aerial devices
- Aerial ladders
- Articulating boom aerial devices
- Vertical towers
- A combination of any of the equipment specified

- *ANSI Standard A92.3,* "Manually Propelled Elevating Work Platforms", which applies to work platforms which are manually propelled, which are vertically adjustable by manual or powered means, and which may be towed or manually moved horizontally on wheels or casters that are an integral part of the work platform base
- *ANSI Standard A92.5*, "Boom-Supported Elevating Work Platforms", which applies to all integral frame, boom-supported elevating work platforms which telescope, articulate, rotate, or extend beyond the base dimensions
- *ANSI Standard A92.6*, "Self-Propelled Elevating Work Platforms", which applies to self-propelled vertically adjustable integral chassis work platforms. Such work platforms are power operated with primary controls for all movement operated from the platform

The following information will be displayed on all work platforms in a clearly visible, accessible area and in as permanent a manner as possible:

- Warnings, cautions, or restrictions for safe operation in accordance with ANSI requirements
- The rated work load will be clearly displayed at each entrance to the platform

VEHICLE MOUNTED ELEVATING & ROTATING WORK PLATFORMS

There are two basic types of elevating work platforms – boom and scissor. Both types come in:

1. “On-Slab” models for use on smooth hard surfaces such as concrete or pavement.
2. Rough-Terrain models used on firm level surfaces: graded and compacted soil or gravel.

Both types share three major components: base, lifting mechanism, and platform assembly.

SCISSOR-TYPE MACHINES

These are raised and lowered by hydraulic pistons and an expanding scissor mechanism. Platforms are available in various configurations with different capabilities for extension and movement. Some have extendable platforms or platforms that can rotate. Extendable platforms should be retracted before raising or lowering the device.

ON-SLAB UNITS

- Not designed for uneven or sloping ground
- Normally have solid rubber tires
- Generally powered by rechargeable DC battery
- Some are powered by internal combustion engine, either gasoline or propane
- Most have “pothole protection” – a metal plate lowered close to the ground to afford some protection against inadvertent movement into depressions or debris

ROUGH-TERRAIN UNITS

- Similar in design to on-slab machines
- Built to handle rigorous off-slab challenges
- Normally have wider wheel bases, larger wheels, and pneumatic tires
- Some fitted with outriggers for extra stability
- Usually powered by internal combustion engines: gasoline, diesel, or propane
- DC Battery powered units are also available, but are not common
- Lifting mechanism is hydraulic

Scissor-lifts range in capacity from 500 to several thousand pounds. They are available with platform heights often reaching 50 feet or more. Scissor-lifts must be set up on stable, level ground, even with outriggers deployed. A slight imbalance or instability is amplified when the machine is raised.

Although fixed to the platform, the controls are moveable from one side of the platform to the other. This enables the operator to see the path of travel. The controls must be oriented correctly so that the operator does not inadvertently move the machine in the wrong direction. Many machines have color-coded directional arrows on the chassis to aid the operator in moving the machine.

SELF-PROPELLED BOOM-SUPPORTED PLATFORMS

- Normally fitted with rough-terrain undercarriages
- Some smaller on-slab units
- Platforms have lifting capacity of about 500 pounds or two workers
- Lack capacity of scissor-type machines; not intended for lifting materials
- Usually powered by an internal combustion engine: gasoline, diesel, or propane

BOOMS

- Telescopic, articulating, or combination of both
- Raised and extended by hydraulic cylinders
- Can reach up to 150 feet
- Can extend well beyond the wheelbase

As with mobile cranes, stability decreases with length of boom and boom angle as the center of gravity moves in relation to the platform position. The machine will overturn if the center of gravity moves outside the machine’s base.

Machines come with load charts that show safe operating configurations. Machines with booms long enough to cause overturning at low boom angles are required to have radius-limiting interlocks to prevent operation in unstable configurations. The reach chart indicates the safe operating configurations for a machine operating on a level surface. The reach diagram shows the safe operating envelope. The machine does not achieve its maximum height directly overhead, nor does it achieve its maximum reach at ground level.

Users must be familiar with the operating range of the individual make and model of the equipment they are using. This knowledge is essential in order to position the machine correctly and reach the work location safely.

NON-SELF-PROPELLED OR PUSH-AROUNDS

These units are not self-propelled and must be transported from one location to another with an independent power source or manually in the case of the smaller devices. The machines are intended primarily for use on smooth, level, hard surfaces or on-slab conditions. Some trailer-mounted units are available. Some can fold up to pass through a standard door, and can be transported by pick-up truck. As a result, they are suitable for maintenance or renovation work.

PUSH-AROUNDS

- Raising mechanism normally powered by gasoline, propane or electric motors
- Normally raised and lowered by hydraulic cylinders
- Platform capacities vary from 300 to 1000 pounds or more
- Devices with capacity less than 500 pounds are *Not Recommended* for construction – this type is better suited to maintenance activities
- Platforms usually do not exceed 36 feet in height
- As platform is raised, risk of overturning increases
- Extra care required when operating at maximum height

EQUIPMENT SELECTION

Elevating work platforms are designed for different uses. It is essential to select the appropriate equipment for the job.

TYPICAL MISTAKES

- Using an on-slab machine on rough terrain
- Using a unit undersized with respect to height, reach, and lifting capacity
- Lifting large materials that overhang the platform
- Using a scissor lift where the reach of a boom-type machine is needed
- Extending the platform with planks, ladders, or other devices because the machine cannot reach the required height

FACTORS TO CONSIDER

- *Capacity* – Does the machine have the lifting capacity, the reach, and the height to complete the task?
- *Surface Conditions* – Are the surface conditions hard or soft, sloped or level? Will the ground have an effect on the type of machine selected?
- *Platform Size and Configuration* – Do you need a regular or extendable platform? Is rotation required? Are there space restrictions to consider?
- *Mobility* – Is a boom type better suited than a scissor lift to the task?
- *Material to be Lifted* – Will the machine be able to lift the size and weight of material required for the job?
- *Access* – Will the machine be able to travel around the workplace safely? Are there obstructions or depressions that will restrict the use of certain machines?
- *Operator Skill or Training* – Are the people on site competent to operate the machine? If a propane-powered engine is used, has the operator received propane training?
- *Work Environment* – If the work is to be done indoors, or in a poorly ventilated area, will an electrically powered machine be required?

FUNDAMENTAL ELEVATING WORK PLATFORM HAZARDS

- *Machine Tipping or Overturning* – Many factors cause instability – sudden stops, depressions, drop-offs, overreaching, overloading, etc. Overturning and tipping result in many fatalities and injuries
- *Overriding Safety Features* – Disarming features such as the tilt or level warning and the deadman switch can prevent operators from knowing they are in danger
- *Overhead Power line Contact* – Contacting overhead wires can cause electrocution
- *Falls from Elevated Platforms* – Many falls occur because workers get in a hurry and fail to observe standard fall protection procedures. Many such falls cause serious injury or even fatalities
- *Makeshift Extensions* – When the machine cannot reach the working height desired, do not compensate by using scaffold planks, ladders, blocks of wood, or other makeshift arrangements. Such practices lead to falls and machine instability
- *Overloading the Platform* – Elevating work platforms overloaded or loaded unevenly can become unstable and fail. Boom-type machines are especially sensitive to overloading. Always stay within the operating range specified by the manufacturer
- Failure to Cordon Off –
  - Elevating work platforms have been struck by other construction equipment or oncoming traffic when the work area is not properly marked or cordoned off
  - Workers have been injured when they inadvertently entered an unmarked area and were struck by falling material, tools, or debris
  - In unmarked areas, workers have also been injured by swinging booms and pinched by scissor mechanisms

- *Accidental Contact* – Many elevating work platforms have blind spots. Moving the machine or platform may cause contact with workers or with obstacles. Use a designated signaler on the ground to guide the operator when the path of travel is not clear or access is tight
- *Improper Maintenance or Modifications* – Elevating work platforms should be maintained by competent workers in accordance with manufacturer's instructions. No modifications should be made to the machine without the manufacturer's approval
- *Improper Blocking During Maintenance* – Failing to block, or improperly blocking the machine, boom, or platform can cause serious crushing injuries and property damage.
- *Improper Access* – Do not enter or leave the platform by climbing the scissors or the boom. Do not use extension ladders to gain access. Ladders exert lateral loads on the platform that can cause overturning. For the safest access, lower the machine completely
- *Moving with the Platform Raised* – Lower the platform before moving the machine unless: The machine is designed to move with the platform raised, or the supporting surface is smooth and level. Slight dips and drops are amplified when the platform is raised and can cause the machine to overturn
- *Improper Refueling* – Take care when refueling. Gasoline, for instance, should be kept in approved containers and dispensed to prevent spills and sparking
- *Pinch Points* – Clothing, fingers, and hands can get caught in scissor mechanisms. As platforms are raised, machines may sway. Workers can be pinched between guardrails and the structure. Position the platform so that work takes place above guardrail height

STABILITY AND TIPPING

In general, elevating work platforms are well manufactured and are safe to use within their specific limitations. However, as with any equipment or tool, there are do's and don'ts to follow.

One of the most dangerous hazards in operating elevating work platforms is tipping over. This can be caused by one or more of the following factors:

- Sudden movement of the unit or parts of the unit when elevated
- Making sudden stops while in motion with platform elevated
- Uneven or overloading of the platform
- Traveling or operating on a slope or uneven terrain
- Changing the weight distribution of the machine by replacing parts with others of a different weight or adding attachments not approved by the manufacturer
- Holes or drop-offs in the floor surface causing one wheel to drop suddenly
- Operating the equipment in windy conditions (refer to the operator's manual for safe operating conditions)

It is important that users understand what makes a platform stable and what causes it to overturn. To understand stability, one must understand the concept of center of gravity, tipping axis (or tipping point), and forces that shift the center of gravity.

Stability is resistance against tipping over. Stability depends on the location of the center of gravity in relation to the tipping axis.

CENTER OF GRAVITY

Every object has a center of gravity. It is the point where the object's weight would be evenly distributed or balanced. If a support were placed under that point, the object would be perfectly balanced.

The center of gravity is usually located where the mass is mostly concentrated. However, the location does not always remain the same.

Any action that changes the machine's configuration – such as raising the platform, extending the boom, or traveling on a slope – can change the location of the center of gravity.

TIPPING AXIS AND AREA OF STABILITY

When an EWP turns over, it tips around an axis or point. This is called the tipping axis or tipping point. EWPs typically have four tipping axes – front, back, left, and right.

Each EWP has its own area of stability. This varies from platform to platform and from model to model. In most cases, the area of stability is bound by the four tipping axes (or the four tires or outriggers). The platform is stable as long as the center of gravity remains inside the area of stability. This is the key to safe operation.

When the center of gravity shifts beyond the area of stability, the machine will tip over. Some factors that can cause a shift beyond the stability area are overloading, moving on excessively sloped ground, a sudden drop of one wheel, and shock loading.

Raising the platform also raises the EWP's center of gravity. When a scissor lift is situated on a slope, and the platform is raised, the platform's center of gravity will move toward the tipping axis. If the center of gravity moves beyond the tipping axis, the platform will overturn.

Boom-supported aerial devices work in the same way. When the boom is extended outward, the center of gravity moves outwards towards the tipping axis. The aerial device will overturn if the boom is extended such that the center of gravity moves beyond the axis. Boom-type machines have an interlocking system that prevents the machine from moving into an unstable configuration.

FACTORS AFFECTING STABILITY

DYNAMIC FORCES

Dynamic forces are forces generated by movement or change of movement. For example, applying the brakes suddenly or traveling too fast around corners can cause instability – as in a car or van. Sudden stops while raising or lowering the platform can also cause instability.

TRAVELING

Traveling the platform over rough or uneven ground can also cause instability. Lower the platform fully or retract telescoping sections while traveling, particularly on uneven surfaces.

EQUIPMENT INSPECTION

All components that bear directly on the safe operation of the EWP and can change from day to day must be inspected daily. Inspection is mostly visual – done in a quick but thorough manner.

Check the operator's manual for a complete list of pre-operational checks. See the end of this section for Daily Inspection Checklists for Elevating Work Platforms and Aerial Devices.

MINIMUM REQUIREMENTS

BEFORE CLIMBING ONTO THE PLATFORM, CHECK:

- Tires for proper pressure and wheels for loose or missing lug nuts
- Steer cylinder, linkage, and tie rods for loose or missing parts, damage, & leaks
- Hydraulic oil for leaks and fluid level. Hydraulic hoses, lift cylinder(s), and connections for leaks or loose connections
- Fuel supply – adequate fuel, filler cap in place, no damage, leaks, or spills
- Battery for fluid level and state of charge
- Proper connection of all quick-disconnect hoses
- Structural components for damage, broken parts, cracks in welds, including scissor arms, outrigger arms, and pads
- Ladder or steps for damage and debris (ladder must be firmly secured to the platform and relatively free of grease, mud, and dirt)
- Beacon and warning lights for missing and defective lenses or caps
- Ground controls (manual and powered) – including emergency stop switch and platform lower/lift switch – for proper function and damaged and missing control sticks/switches
- Decals and warning signs to make sure they are clean, legible, and conspicuous

AFTER MOUNTING THE PLATFORM, CHECK:

- Platform assembly for missing or loose parts, missing or loose lock pins & bolts
- Platform floor for structural damage, holes, or cracked welds and any dirt, grease, or oil
- Operator's manual to make sure it is in place
- Extendable platform deck for ease of extension/retraction and proper function of locking position of platform
- Guardrails to make sure they are in place and secure
- Access gate for ease of movement, missing parts, latch, and locking capabilities
- All fall protection anchorage points
- All control mechanisms for broken or missing parts
- All emergency controls for proper function – stopping, descending, master OFF switch
- All safety devices such as tilt and motion alarms for malfunction
- Swivels for freedom of rotation
- Scissors for smooth movement up and down
- Brakes for stopping capabilities
- Horn for proper function

MANUALS, SIGNS, AND DECALS

SIGNS CLEARLY VISIBLE TO THE OPERATOR AT THE CONTROLS MUST INDICATE:

- The equipment's rated working load
- All limiting operating conditions, including the use of outriggers, stabilizers, and extendable axles
- The specific firm, level surface conditions required for use in elevated position
- Such warnings as may be specified by the manufacturer
- Other than for a boom-type elevating work platform, the direction of machine movement for each operating control
- The name/number of the ANSI standard to which the platform was designed
- The name and address of the owner

IN ADDITION TO THE ABOVE, ANSI STANDARDS REQUIRE THE FOLLOWING SIGNS:

- The make, model, serial number, and manufacturer's name and address
- The maximum platform height
- The maximum travel height, if not equal to the maximum platform height
- The nominal voltage rating of the batteries, if battery-powered
- A warning to study the operating manual before using the equipment
- A statement as to whether or not the platform is insulated
- A notice outlining the required inspections
- The capacity in each configuration
- Diagrams/description of various configurations in which the platform can be used
- Warnings against replacing, without the manufacturer's consent, components critical to the machine's stability – for example, batteries or ballasted tires with lighter weight components (the minimum weights of such components must be specified)

Many of these signs are vital to the operation of the machine and the protection of workers. All signs and decals must be kept clear of dust and grease so they can be easily read. Torn or damaged signs must be replaced.

Standards require the manufacturer provide a manual that contains:

- Description, specifications, and capacities of the platform
- The operating pressure of the hydraulic or pneumatic system that is part of the work platform
- Instructions regarding operation and maintenance, including recommended daily, weekly, and monthly inspection checklists
- Information on replacement parts
- The manual must be stored on the equipment in a weatherproof storage container

SAFE PRACTICES

Operators must be familiar with the requirements for the specific machine they will use:

- The manufacturer's operating manual
- The manufacturer's warning and caution signs on the machine
- The location of all emergency controls and emergency procedures
- The daily maintenance checks to perform

GENERAL SAFETY GUIDELINES FOR EWPS AND AERIAL DEVICES

- Always check for overhead power lines before moving the machine or operating the platform. The limits of approach from overhead power lines must be observed. If work must be done within these limits, make arrangements with the owner of the utility to have the power line de-energized. Allow for movement or sway of the lines as well as the platform. Be aware of overhanging tools or equipment
- Wear a full body harness and tie off to a designated tie-off point while the machine is moving
- Do not leave the machine unattended without locking it or otherwise preventing unauthorized use
- Do not load the platform above its Rated Working Load (RWL). Wherever possible, keep the load below ⅔ of the RWL
- Make sure that all controls are clearly labeled with action and direction
- Keep guardrails in good condition and ensure that gate is securely closed before moving the platform. Do not remove guardrails while the platform is raised
- Shut off power and insert the required blocking before maintenance or servicing
- Deploy stabilizers or outriggers according to the manufacturer's instructions
- Position the boom in the direction of travel where possible
- Keep ground personnel away from the machine and out from under platform
- Do not access the platform by walking on the boom
- Do not try to push or move the machine by telescoping the boom
- Do not use the machine as a ground for welding
- Do not use a boom-supported platform as a crane
- Do not operate the equipment in windy conditions. For safe wind speeds, refer to the operator's manual
- Do not place the boom or platform against any structure to steady either the platform or the structure
- Secure loads and tools on the platform so that machine movement will not dislodge them
- Make sure that extension cords are long enough for the full platform height and will not be pinched or severed by the scissor mechanism
- Use three-point contact and proper climbing techniques when mounting or dismounting from the machine

Important Note: Never operate equipment on which you have not been trained or which you are not comfortable operating. Your safety and that of others on site depends on competent, knowledgeable operation of the equipment.

WORK AREA INSPECTION

Before operating elevating work platforms and aerial devices, check the work area for:

- Drop offs or holes in the ground
- Slopes, bumps or floor obstructions
- Debris
- Overhead obstructions
- Overhead wires power lines or other electrical conductors
- Hazardous atmospheres
- Adequate operating surface (ground or floor)
- Sufficient ground or floor support to withstand all forces imposed by the platform in every operating condition, wind and weather conditions

FALL PROTECTION

The fall protection required for persons who work on aerial lifts depends on the type of aerial lift used. The table below shows acceptable fall protection.	
Type of Lift	***Fall Protection Required***
Vehicle-Mounted Elevating and Rotating Work Platforms (ANSI A92.2 devices)	Platforms other than buckets or baskets must include guardrail systems – guardrails, a midrail, and toeboards. Each person who works on a boom-supported platform must wear a body harness and lanyard attached to the boom or basket.
Manually Propelled Elevating Aerial Platforms (ANSI A92.3 devices)	The platform must have a guardrail at least 42 inches ±3 inches above the floor, a midrail, and toeboards at least 4 inches high.
Boom-Supported Elevating Work Platforms (ANSI A92.5 devices)	The platform must have a guardrail at least 42 inches ±3 inches above the floor, a midrail, and toeboards at least 4 inches high. Each worker on the platform must wear a body harness and lanyard attached to the boom or platform.
Self-Propelled Elevating Work Platforms (ANSI A92.6 devices)	The platform must have a guardrail 42 inches ±3 inches above the floor, a midrail, and toeboards at least 4 inches high.

FALL PROTECTION FOR ELEVATING WORK PLATFORMS

- Personnel will maintain firm footing on the platform while working on the platform. The use of railings, planks, ladders, or any other devices on the platform for achieving additional height is prohibited
- A safety harness that has a lanyard which complies with construction safety standard "Fall Protection" and which is affixed to attachment points provided and approved by the manufacturer will be provided by Solomon Corporation and used by any occupant of an aerial work platform described in this section. A fall arrest system will only be used where the aerial lift is designed to withstand the vertical and lateral loads caused by an arrested fall
- A body belt may be used with a restraint device with the lanyard and the anchor arranged so that the employee is not exposed to any fall distance. A restraint device is required where the aerial lift cannot withstand the vertical and lateral loads imposed by an arrested fall
- Belting off to an adjacent pole, structure, or equipment while working from an aerial work platform is prohibited
- An employer will not allow employees to exit an elevated aerial work platform, except where elevated work areas are inaccessible or hazardous to reach. Employees may exit the platform with the knowledge and consent of Solomon Corporation. When employees exit to unguarded work areas, fall protection will be provided and used as required

FALL PROTECTION FOR AERIAL DEVICES

- Employees will always stand firmly on the floor of the basket, and will not sit or climb on the edge of the basket or use planks, ladders, or other devices for a work position
- Boom and basket load limits specified by the manufacturer will not be exceeded
- A safety belt or harness will be used with a lanyard attached to the boom or basket when working from an aerial lift. The safety belt, harness, and lanyard will be provided by Solomon Corporation. An in-plant, industrial-type aerial device used on a level surface and equipped with a platform with approved railings is exempt from this rule
- Body belts are not acceptable as part of a personal fall arrest system. The use of a body belt in a tethering system or in a restraint system is acceptable
- A boom platform will be provided with a rail or other structure around its upper periphery that will be not less than 38 inches above the floor of the platform and with a toeboard not less than 4 inches high. A basket of a cherry picker will be considered to meet this requirement. A platform may have the guardrail removed from the working side if a safety belt and lanyard is worn by the employee on the platform
- Belting off to an adjacent pole, structure, or equipment while working from an aerial device will not be permitted
- Climbers will not be worn while on an aerial device unless gaff guards are provided

OSHA REGULATIONS AND RESPONSIBILITIES

OSHA regulations include the following requirements:

- Elevating work platforms must be engineered and tested to meet the relevant standard for that equipment
- Aerial devices must be checked each day before use by a trained worker
- The owner or supplier must keep a log of all inspections, tests, repairs, modifications, and maintenance
- The log must be kept up to date and include names and signatures of persons who performed inspections and other work
- Workers must be given oral and written instruction before using the platform for the first time. Instruction must include items to be checked daily before use

VEHICLE MOUNTED ELEVATING AND ROTATING WORK PLATFORMS & AERIAL DEVICES

This section provides for the safe operation and maintenance by Solomon Corporation and the safe use by the employee of vehicle mounted elevating and rotating work platforms in, around, and about a place of employment. Fire fighting equipment and powered industrial trucks are not included in these rules.

EMPLOYER RESPONSIBILITY

An employer will provide each employee who will operate the aerial work platform with instruction and training regarding the equipment that will be used. Such instruction and training will ensure that each operator complies with the minimum following provisions:

- Is instructed by a qualified person in of the purpose and function of each control
- Is trained by a qualified person or reads and understands the manufacturer's operating instructions and safety rules
- Understands by reading or by having a qualified person explain, all decals, warnings, and instructions displayed on the aerial work platform
- Reads and understands the provisions of these rules or be trained by a qualified person on their content

The manufacturer's operating instructions and safety rules will be provided and maintained in a legible manner on each unit by Solomon Corporation

Maintain an aerial device free of defects and hazards that could cause an injury.

EMPLOYEE RESPONSIBILITY

- Operate an aerial device only after being trained and authorized by Solomon Corporation
- Report known defects and hazards concerning an aerial device to the supervisor

EQUIPMENT INSTRUCTIONS AND MARKING

Each unit will have a manual containing instructions for maintenance and operations. If a unit can be operated in different configurations, then these will be clearly described, including the rated capacity in each configuration.

Each aerial device placed in service will have a conspicuously displayed legible plate or other legible marking verifying the aerial device is designed and manufactured in accordance with the following applicable specifications:

- ANSI A92.2 – Vehicle Mounted Elevating and Rotating Aerial Devices
- ANSI A92.3 – Manually Propelled Elevating Work Platforms
- ANSI A92.5 – Boom Supported Elevating Work Platforms
- ANSI A92.6 – Self-Propelled Elevating Work Platforms

The above plates will contain the following data, when applicable:

- Make, model, and manufacturer's serial number
- Rated capacity
- Maximum capacity at the maximum platform height
- Platform height
- Maximum travel height
- Maximum recommended operating pressure of hydraulic or pneumatic system(s) or both
- Caution or restrictions of operation or both
- Operating instructions
- Manufacturer's rated line voltage (dielectric capability)

Alternative configurations will require in addition to the above:

- Charts, schematics, or scales of capacities in operating positions
- Cautions, restrictions, of operation of all alternate or combinations
- Employees will be instructed in the proper use of the platform

All aerial devices and elevating work platforms will be assembled and erected in accordance with these rules and will be maintained in safe operating condition.

All electrical tests will conform to the requirements of the applicable the National Fire Protection Association NFPA 70 Standard or equivalent DC voltage test approved by the equipment manufacturer or equivalent entity.

FACTORS OF SAFETY IN DESIGN OF WORK PLATFORM ASSEMBLY

- Where the platform is supporting its rated workload by a system of wire ropes or lift chains, or both, the safety factor of the wire or chain will not be less than 6 to 1
- All critical components of a hydraulic or pneumatic system used in a work platform will have a bursting strength that exceeds the pressure attained when the system is subjected to the equivalent of four times the rated workload. Critical components are those in which a failure would result in a free fall or free rotation of the boom. All noncritical hydraulic components will have a bursting safety factor of at least 2 to 1
- Automatic safety devices or systems will be provided to prevent free fall of the work platform should a failure of the power supply or elevating system occur

CONSTRUCTION, MODIFICATION, REMOUNTING, TESTING, AND USE

- An aerial device purchased, modified, or remounted must meet the requirements of ANSI A92.2
- A permanent label or tag will be affixed to an aerial device purchased, modified, or remounted certifying compliance
- An employer modifying the basic design of an aerial device will secure approval of the modification in writing from the manufacturer of the aerial device, a firm offering an equivalent service, or a qualified engineer knowledgeable in the aerial device operations. The results of the modification will be at least as safe as the original design
- An aerial device will bear a permanent plate stating the designed rating capacity
- An aerial device will be mounted on a vehicle capable of sustaining, or reinforced to sustain, the imposed load. The vehicle will be a stable support for the aerial device
- The lifting and outrigger system of an aerial device will be equipped with a means, such as but not limited to, a pilot operated check valve to ensure that the system will not permit the work platform to drop in a free fall in event of a power or hydraulic line failure
- An aerial device that does not meet the requirements ANSI A92.2 will not be used unless it has been inspected and modified as required to conform to the essential stability, structural, electrical insulation, and operational requirements
- In addition to the welding requirements prescribed in ANSI A92.2, an aerial device will conform to the AWS D2.0-69

MAINTENANCE AND REPAIRS

- The materials used in the repair of aerial devices and elevating work platforms will conform to standard specifications of strength, dimensions, and weights, and will be selected to safely support the rated workload
- Electrical wiring and equipment will meet National Fire Protection Association (NFPA) 70 provisions
- All exposed surfaces will be free from sharp edges, burrs, or hazardous projections

ELECTRICAL RATINGS

- The rating plate required will include a statement as to whether the aerial device is insulated or is non-insulated and, if insulated, the rated line voltage for which the aerial device was designed and tested
- The insulating portion of an aerial device will not be altered in any manner that might reduce its insulating value

SAFETY FACTORS AND YIELD POINTS

- The design of the basic structural elements of the aerial device including the platform and its component parts will have a yield point of not less than 3 times the rated load. Structural materials not having a clearly defined yield or break point will have a designed safety factor of not less than 5
- The designed safety factor of not less than 4 will apply to hydraulic and pneumatic parts which would, on failure, permit a free fall, free rotation of the boom, or loss of stability
- Noncritical components will have a bursting safety factor of not less than 2

CONTROLS

- The controls for the operation of an aerial device will be permanently labeled as to their function
- Controls for an aerial device will be designed or guarded to prevent inadvertent start
- Articulating, extensible boom platforms, or both, primarily designed as personnel carriers, will be equipped with both upper and lower controls. functions
- Upper controls will be located within reach of the operator
- Lower controls will be capable of overriding the upper controls. Except in case of an emergency, the lower controls will not be operated unless permission has been obtained from the employee in the basket or on the work platform

STABILITY REQUIREMENTS FOR NEW OR MODIFIED AERIAL DEVICES

Each new or modified aerial device will be inspected and tested before initial use to assure compliance with all of the following requirements.

- An aerial device, mounted on an approved vehicle, when used in a specific configuration, will be capable of sustaining a static load 1 ½ times its rated load capacity in every position that the load can be placed in when the vehicle is on a firm and level surface. If having the outriggers extend to a firm footing is part of the definition of the configuration, they will be extended to provide leveling for the purpose of determining whether the mobile unit meets the stability requirements
- An aerial device, mounted on an approved vehicle, when used in a specific configuration, will be capable of sustaining a static load 1 1/3 times its rated load capacity in every position that the load can be placed in the when the vehicle is on a slope of 5 degrees downward in the direction most likely to cause overturning. If having the outriggers extended to a firm footing is part of the definition of the configuration, they will be extended to provide leveling for the purpose of determining whether the mobile unit meets the stability requirements

- If other facilities, such as a means of turntable leveling, are provided to minimize the effect of the sloping surface, then those facilities will be utilized when determining if the mobile unit meets the stability requirements
- Vertical towers designed specifically for operation only on a level surface will be excluded from this requirement
- None of the stability tests described will produce instability of the mobile unit, or cause permanent deformation of any component. The lifting of a tire or outrigger on the opposite side of the load does not necessarily indicate a condition of instability
- Verification by the manufacturer or an equivalent entity that the stability of an aerial device meets the requirements may be used to demonstrate compliance

INSPECTION AND TESTS

- An aerial device will be inspected and tested at least annually for permanent deformation and cracks by using 1 ½ times the rated load and for defects by visual inspection during and following the load test
- An annual electrical test of insulated aerial devices will be made. An equivalent DC voltage test may be used in place of the prescribed AC voltage
- Field inspection and tests will be performed only by an authorized and trained employee or outside service
- Lift controls will be tested each day before use to determine that the controls are in safe working condition. An aerial device with defective controls will not be used until repaired

USE

- Any overhead line will be considered energized until the owner, owner representative, or utility indicates otherwise and the line has been visibly grounded, and the owner, owner representative, or utility will be notified and provided with all pertinent information of the job before the commencement of operations near electrical lines
- Except as prescribed or where insulating barriers not a part of or an attachment to the aerial device have been erected to prevent physical contact with the lines, an aerial device will maintain the distances from energized distribution and transmission power lines and equipment prescribed in table 1
- A qualified lineman or a qualified line clearance tree trimmer performing work on or near an exposed power transmission or distribution line from an aerial lift will maintain distances prescribed in table 2, unless the employee is insulated or guarded from the energized part by gloves or gloves and sleeves, or insulated, isolated, or guarded from any other conductive part or the energized part is insulated from the employee
- A qualified telecommunications employee will maintain the distances prescribed in table 3 when working from an aerial lift, unless the employee is insulated, isolated, or guarded from any other conductive part or the energized part is insulated from the employee
- The insulated bucket, gloves, and sleeves used to comply will be rated at more than the voltage to be worked on or that with which they might come into contact

- An in-plant, industrial-type aerial lift designed to be used on level surfaces will not be used on slopes, unless the aerial lift is adjusted to a firm, level plane
- A safety belt or harness will be used with a lanyard attached to the boom or basket when working from an aerial lift. The safety belt, harness, and lanyard will be provided by Solomon Corporation. An in-plant, industrial-type aerial device used on a level surface and equipped with a platform with approved railings is exempt from this rule
- A boom platform will be provided with a rail or other structure around its upper periphery that will be not less than 38 inches above the floor of the platform and with a toeboard not less than 4 inches high. A basket of a cherry picker will be considered to meet this requirement. A platform may have the guardrail removed from the working side if a safety belt and lanyard is worn by the employee on the platform
- The designed rated capacity for a given altitude will not be exceeded
- A proximity warning device may be used, but not in place of meeting the requirements of this rule

Table 1

Minimum Clearance Distances for Equipment		
Voltage	Clearance With Boom Raised	Clearance Boom Lowered and No Load in Transit
To 50 kV	10 feet	4 feet
Over 50 kV	10 feet + .4 inch per each 1 kV over 50 kV	10 feet
50 to 345 kV		10 feet
346 to 750 kV		15 feet

Table 2

Minimum Working Distances for Qualified Line Clearance Tree Trimmers and Qualified Linemen	
Voltage Range Phase to Phase (KV)	Minimum Working Distance
2.1 to 15.0	2´0˝
15.1 to 35.0	2´4˝
35.1 to 46.0	2´6˝
46.1 to 72.5	3´0˝
72.6 to 121.0	3´4˝
138.0 to 145.0	3´6˝
161.0 to 169.0	3´8˝
230.0 to 242.0	5´0˝
345.0 to 362.0	*7´0˝
550.0 to 552.0	*11´0˝
700.0 to 765.0	*15´0˝
***NOTE:** For 345 — 362 kV., 500 — 552 kV., and 700 — 765 kV., the minimum working distance and the minimum clear hot stick distance may be reduced that such distances are not less than the shortest distance between the energized part and a grounded surface.	

Table 3

Minimum Approach Distances for Qualified Telecommunications Employees	
Voltage Range (Nominal Phase to Phase)	Minimum Approach Distances
300 V and less	12˝
Over 300 V, not over 750 V	18˝
Over 750 V, not over 2 kV	24˝
Over 2 kV, not over 15 kV	36˝
Over 15 kV, not over 37 kV	42˝
Over 37 kV, not over 87.5 kV	48˝
Over 87.5 kV, not over 121 kV	54˝
Over 121 kV, not over 140 kV	--

VEHICLES

- Before a vehicle supporting an aerial ladder is moved for highway travel, the ladders will be secured in the lower position, and the manually operated device at the base of the ladder, or other effective means, will be used to prevent elevation or rotation of the ladder
- Before a vehicle supporting an aerial lift is moved for travel, the boom will be inspected to insure that it is properly cradled and the outriggers are in the stowed position
- A vehicle supporting an aerial device will not be moved when the boom is elevated with employees in working position, unless the equipment is specifically designed for this type of operation and meets the requirements
- Brakes will be set and outriggers, when used, will be positioned on pads or a solid surface
- Wheel chocks will be installed before using an aerial device on an incline

ELEVATING WORK PLATFORMS

These rules apply to equipment that has a primary function of elevating personnel, together with their tools and necessary materials, on a platform that is mechanically positioned. The following American National Standard Institute (ANSI) units are covered:

- *ANSI Standard A92.2*, "Vehicle-Mounted Elevating Work Platforms"
- *ANSI Standard A92.3,* "Manually Propelled Elevating Work Platforms"
- *ANSI Standard A92.5*, "Boom-Supported Elevating Work Platforms"
- *ANSI Standard A92.6,* "Self-Propelled Elevating Work Platforms"

EQUIPMENT NOT COVERED

- Equipment that has a primary function other than elevating personnel, such as fork trucks or cranes that are adapted to elevating personnel, is not covered by these rules
- Fire fighting equipment

CONSTRUCTION

- Aerial work platforms will be designed, constructed, and tested so as to be in compliance with the requirements of ANSI standards A92.2, A92.3, A92.5, and A92.6
- Aerial work platforms will not be field-modified for uses other than those intended by the manufacturer, unless the modification has been certified in writing by the manufacturer or by any other equivalent entity, such as a nationally recognized testing laboratory, to be in compliance with the applicable ANSI standard and this rule, and to be at least as safe as the equipment was before modification

Directional controls will be in compliance with all of the following provisions:

- Be of the type that will automatically return to the off or neutral position when released
- Be protected against inadvertent operation
- Be clearly marked as to their intended function
- An overriding control will be provided in the platform which must be continuously activated for platform directional controls to be operational and which automatically returns to the off position when released
- Aerial work platforms will be equipped with emergency controls at ground level
- Emergency ground level controls will be clearly marked as to their intended function and be capable of overriding the platform controls

All of the following information will be clearly marked in a permanent manner on each aerial:

- Special workings, cautions, or restrictions necessary for operation
- Rated workload
- A clear statement of whether or not the aerial work platform is electrically insulated
- Rotating shafts, gears, and other moving parts that are exposed to contact will be guarded as required
- Attachment points will be provided for fall protection devices for personnel who occupy the platform on aerial work platforms

INSPECTION, MAINTENANCE, AND TESTING

An employer will comply with all of the following requirements:

- Each aerial work platform will be inspected, maintained, repaired, and kept in proper working condition in accordance with the manufacturer's operating, maintenance, and repair manuals
- Any aerial work platform found not to be in a safe operating condition will be removed from service until repaired. All repairs will be made by an authorized person in accordance with the manufacturer's operating, maintenance, and repair manuals
- If the aerial work platform is rated and used as an insulated aerial device, the electrical insulating components will be tested for compliance with the rating of the aerial platform in accordance with ANSI standard A92.2, Section 6

Such testing will comply with all of the following provisions:

- The test will be performed not less than annually
- Written, dated, and signed test reports will be made available by Solomon Corporation for examination by OSHA
- The insulated portion of an aerial device will not be altered in any manner that might reduce its insulating value
- All danger, caution, and control markings and operational plates will be legible and not obscured

PREOPERATION PROCEDURES

Before use on each work shift, an aerial work platform will be given a visual inspection by the operator for defects that would affect its safe operation and use. The inspection will consist of not less than both of the following procedures:

- Visual inspection for all of the following: cracked welds, bent or broken structural members, hydraulic or fuel leaks, damaged controls and cables, loose wire, tire condition, fuel and hydraulic fluid levels, slippery conditions on the platform
- Operate all platform and ground controls to ensure that they perform their intended function
- Before the aerial work platform is used, and during use on the job site, the operator will inspect the operational area for all of the following: ditches, drop-offs, holes, debris, bumps and floor obstructions, overhead obstructions, power lines
- The area around the aerial work platform will also be inspected to assure clearance for the platform and other parts of the unit
- All unsafe items found as a result of the inspection of the aerial work platform or work area will be corrected before further use of the aerial work platform
- When the specified clearances cannot be maintained, the owner of electrical lines or the authorized representative will be notified and provided with all pertinent information before the commencement of operations near electrical lines
- Any overhead wire will be considered to be an energized line until the owner of the line or the authorized representative states that it is de-energized

OPERATING PROCEDURES

- The aerial work platform will be used only in accordance with the manufacturer's operating instructions and safety rules.
- The following clearances will be maintained when operating aerial work platforms or other equipment under, over, by, or near energized electric power lines:

VOLTAGE	*MINIMUM CLEARANCE*
0 to 50 kV	10 feet
More than 50 kV	10 feet + .4 inch per kV

The clearance requirements of this rule do not apply to the following situations:

- Where work is performed from an insulated aerial device that is insulated for the work and the work is performed in accordance with the provisions of construction safety standard "Power Transmission and Distribution" and "Telecommunications"
- Where the electric power transmission or distribution lines have been de-energized and visibly grounded at the point of work or where insulating barriers that are not a part of an attachment to the aerial work platform have been erected to prevent physical contact with the line
- Where work is being performed by journeymen electricians on equipment up to .5kV.

- Two journeymen electricians will be required for work within the minimum clearance on equipment over .5kV
- Proximity warning devices may be used, but will not be used instead of meeting the requirements of this rule
- The manufacturer's rated load capacity will not be exceeded. Solomon Corporation will ensure that the load and its distribution on the platform are in accordance with the manufacturer's specifications. The aerial work platform rated load capacity will not be exceeded when loads are transferred to the platform at elevated heights
- Only personnel, their tools, and necessary materials will be on or in the platform
- The guardrail system of the platform will not be used to support any of the following: materials, other work platforms, employees
- Personnel will maintain firm footing on the platform while working on the platform. Using railings, planks, ladders, or anything on the platform for more height is prohibited
- Fuel gas cylinders will not be carried on platforms that would allow gas accumulation
- A safety harness that has a lanyard which is in compliance with construction safety standard "Fall Protection" and which is affixed to attachment points provided and approved by the manufacturer will be provided by Solomon Corporation and used by any occupant of an aerial work platform described in these rules. A fall arrest system will only be used where the aerial lift is designed to withstand the vertical and lateral loads caused by an arrested fall
- A body belt may be used with a restraint device with the lanyard and the anchor arranged so that the employee can't fall. A restraint device is required where the aerial lift cannot withstand the vertical and lateral loads imposed by an arrested fall
- Don't belt off to adjacent pole, structure, or equipment while on an aerial work platform
- An employer will not allow employees to exit an elevated aerial work platform, except where elevated work areas are inaccessible or hazardous to reach. Employees may exit the platform with the knowledge and consent of Solomon Corporation. When employees exit to unguarded work areas, fall protection will be provided and used as required
- Only aerial work platforms that are equipped with a manufacturer's installed platform controls for horizontal movement will be moved while in the elevated position
- Before and during driving while elevated, an operator of a platform will:
- Look in the direction of, and keep a clear view of, the path of travel and make sure that the path is firm and level.
- Maintain a safe distance from: obstacles, debris, drop-offs, holes, depressions, ramps, overhead obstructions, overhead electrical lines, other hazards to safe elevated travel.
- Outriggers or stabilizers, are to be used in accordance with the manufacturer's instruction. Outriggers and stabilizers will be positioned on pads or a solid surface
- Aerial work platforms will be elevated only when on a firm and level surface or within the slope limits allowed by the manufacturer's instructions

- A vehicle-mounted aerial work platform will have its brakes set before elevating
- A vehicle-mounted work platform will have wheels chocked before using on an incline
- Climbers will not be worn while performing work from an aerial work platform
- Platform gates will be closed while the platform is in an elevated position
- Stunt driving and horseplay are prohibited
- Altering, modifying, or disabling safety devices or interlocks is prohibited
- Solomon Corporation will prevent ropes, cords, and hoses from entangling in the aerial work platform
- A platform operator will ensure that the area surrounding the aerial work platform is clear of personnel and equipment before lowering the platform
- Before and during travel, except as provided for horizontal movement, an operator will do all of the following: inspect to see that booms, platforms, aerial ladders, or towers are properly cradled or secured; ensure that outriggers are in a stored position; limit travel speed according to the following factors; condition of the surface; congestion; slope; location of personnel; other hazards
- The aerial work platform will not be positioned against another object to steady the platform
- The aerial work platform will not be operated from a position on a truck, trailer, railway car, floating vessel, scaffold, or similar equipment
- The boom and platform of the aerial work platform will not be used to move or jack the wheels off the ground unless the machine is designed for that purpose by the manufacturer
- If the platform or elevating assembly becomes caught, snagged, or otherwise prevented from normal motion by adjacent structures or other obstacles so that control reversal does not free the platform, all personnel will be removed from the platform before attempts are made to free the platform

ELEVATING WORK PLATFORM EQUIPMENT

- The platform deck will be equipped with a guardrail or other structure around its upper periphery that will be 42 inches high, plus or minus 3 inches, with a midrail. (Chains or the equivalent may be substituted where they give equivalent protection.) Where the guardrail is less than 39 inches high, an approved personal fall protection system will be used
- The configuration of an elevating work platform may include a ladder for personnel to use in reaching the platform deck. Any ladder device used in this way will have rungs located on uniform centers not to exceed 12 inches
- Any elevating work platform equipped with a powered elevating assembly and having a platform height exceeding 60 inches will be supplied with safe emergency lowering means compatible with the specific elevating assembly employed
- Any powered elevating work platform will have both upper and lower control devices. Controls will be plainly marked as to their function and guarded to prevent accidental operation. The upper control device will be in or beside the platform, within easy reach of the operator. The lower control device will have the capability to lower the platform where the operator's safety is in jeopardy
- An emergency stopping device will be provided at the upper controls of elevating work platforms
- Elevating Work Platforms will include: toeboards at sides and ends which will not be less than 4 inches high; EXCEPTION: Toeboards may be omitted at the access openings; a hinged trap access door, if applicable; a platform whose minimum width will not be less than 16 inches

GUARDING OF MOVING PARTS

All rotating shafts, gearing, and other moving parts will be guarded.

STABILITY ON INCLINED SURFACES

Unless recommended for such use by the manufacturer, no elevating work platform will be used on an inclined surface. Procedures for maintaining stability must be clearly outlined in the special warnings section of user's manual. The user will not deviate from the manufacturer's instructions.

OPERATING INSTRUCTIONS (ELEVATING WORK PLATFORMS)

- No employee will ride, nor tools, materials, or equipment be allowed on a traveling elevated platform unless the following conditions are met: the travel speed at Maximum Travel Height does not exceed 3 feet per second; self-propelled units will be equipped with electrical or other interlock means that will prevent driving them with the platform height greater than the Maximum Travel Height or at speeds greater than permitted at Maximum Travel Height; the surface upon which the unit is being operated is level with no hazardous irregularities or accumulation of debris that might cause a moving platform to overturn
- Units will be assembled, used, and disassembled in accordance with the manufacturer's instructions
- Units will be assembled, and used only by personnel who have been trained in their use. Units will be inspected for damaged and defective parts before use
- Units will not be loaded in excess of the design working load and will be taken out of service when damaged or weakened from any cause. They will not be used until repairs are completed
- Employees will not sit, stand, or climb on the guardrails of an elevating work platform or use planks, ladders, or other devices to gain greater working height or reach
- Employees will not work on units when exposed to high winds, storms, or when they are covered with ice or snow (unless provisions have been made to ensure the safety of the employees)
- Employees climbing or descending vertical ladders will have both hands free for climbing

NOTE: Remove foreign substances from your shoes (e.g. mud, grease).

- Where moving vehicles are present, the work area will be marked with warnings such as flags, roped off areas or other effective means of traffic control will be provided
- Unstable objects such as barrels, boxes, loose brick, tools, debris, will not be allowed to accumulate on the work level
- In operations involving production of small debris, chips, etc., and the use of small tools and materials, and where persons are required to work or pass under the equipment, screens will be required between toeboards and guardrails. The screen will extend along the entire opening, will equal No. 18 gage U.S. Standard Wire ½-inch mesh

PIN-ON PLATFORMS

- Pin-on platforms will be securely pinned to the boom or boom extension
- Employees on the elevated pin-on platform will be secured to the boom by a safety belt and lanyard or a body belt and safety strap
- Aerial baskets or platforms will not be supported by adjacent structure(s) when workers are on the platform or in the basket while in an elevated position
- Lift controls will be tested in accordance with the manufacturer’s recommendations or instructions prior to use to determine that such controls are in safe working condition.
- Only authorized persons will operate an aerial device
- Belting off to an adjacent pole, structure, or equipment while working from an aerial device will not be permitted
- Employees will not sit or climb on the edge of the basket or use planks, ladders or other devices to gain greater working height
- Boom and basket and platform load limits specified by the manufacturer will not be exceeded
- When elevating personnel with the vehicle stationary the braking systems will be set
- Provided they can be safely installed, wheel chocks will be installed before using an aerial device on an incline
- When used, outriggers will be positioned on pads or a solid surface. All outriggers will be equipped with hydraulic holding valves or mechanical locks at the outriggers
- Climbers will not be worn while performing work from an aerial device
- When an insulated aerial device is required, the aerial device will not be altered in any manner that might reduce its insulating value
- An aerial device truck will not be moved when the boom is elevated in a working position with employees in the basket or platform except when all of the following are complied with:
- The equipment is specifically designed for this type of operation.
- All controls and signaling devices are tested and are in good operating condition.
- An effective communication system will be maintained at all times between the basket or platform operator and where applicable, the vehicle operator.
- The route to be traveled is surveyed immediately prior to the work trip, checking for overhead obstructions, traffic, holes in the pavement, ground or shoulder, ditches, slopes, etc., for areas other than paved, a survey should be made on foot.
- The speed of the vehicle does not exceed three (3) miles per hour.
- Only one employee is in the basket.
- Both the driver and/or the elevated employee have been specifically trained for this type of work (towering) in accordance with the manufacturer's recommendations.
- Lower level controls will not be operated unless permission has been obtained from the employee in the device, except in case of emergency
- Before moving an aerial device for travel, the boom(s) will be inspected to see that it is properly cradled and outriggers are in stowed position

- An employee, while in an elevated aerial device, will be secured to the boom, basket or tub of an aerial device through the use of a safety belt, body belt, or body harness equipped with safety strap or lanyard.
- Safety belts/body belts are prohibited for use in personal fall arrest systems, but may be used as part of a fall restraint or positioning device system.
- Safety belts/body belts used as part of a positioning device system will be rigged such that an employee cannot free fall more than 2 feet.
- A body harness may be used in a personal fall restraint, positioning or fall arrest system. When a body harness is used in a fall arrest system, the lanyard will be rigged with a deceleration device to limit maximum arresting force on an employee to 1,800 pounds and prevent the employee from hitting any levels or objects below the basket or platform, and will limit free fall to a maximum of 6 feet.

ATTACHMENTS

- Aerial Lift Equipment Daily Inspection/Checklist
- Scissor Lift Operator Daily Inspection/Checklist

AERIAL LIFT EQUIPMENT DAILY INSPECTION/CHECKLIST

Use only equipment which is in safe working condition. DO NOT operate equipment that need repair.	
Company: Location of Use: Time: Date:	
Operator's Name: Supervisor's Name:	
Inspector(s) Name: Hour Meter Reading:	
Equipment Type: Equipment I.D. Numbers: Manufacturer:	
OK REPAIR N/A General Site Information:	OK REPAIR N/A
☐ ☐ ☐ Hazard assessment of work area? ☐ ☐ ☐ Controls in place for identified hazards? ☐ ☐ ☐ Work areas properly signed and barricaded? ☐ ☐ ☐ Operator's manual on lift?	☐ ☐ ☐ Ground man available for emergency descent who is knowledgeable of descent valve operation? ☐ ☐ ☐ Test controls – including emergency descent valve?
OK REPAIR N/A Carrier Vehicle:	OK REPAIR N/A
☐ ☐ ☐ Motor ☐ ☐ ☐ Crank case oil is clean and full ☐ ☐ ☐ Engine coolant is about 2" below cap ☐ ☐ ☐ Clutch /Converter ☐ ☐ ☐ Drive Line ☐ ☐ ☐ Transmission fluid at proper level ☐ ☐ ☐ Frame ☐ ☐ ☐ Brakes ☐ ☐ ☐ Differentials ☐ ☐ ☐ Outriggers	☐ ☐ ☐ Cab ☐ ☐ ☐ Steering ☐ ☐ ☐ Lights ☐ ☐ ☐ Tires properly inflated ☐ ☐ ☐ Cuts or bulges in the tires ☐ ☐ ☐ Wheels & Lug Nuts secure ☐ ☐ ☐ Fire Extinguisher ☐ ☐ ☐ Cab Glass ☐ ☐ ☐ Warning Lights and Alarm ☐ ☐ ☐ Access

OK REPAIR N/A	HYDRAULICS:	OK REPAIR N/A
☐ ☐ ☐ Relief Valve(s)		☐ ☐ ☐ Pumps
☐ ☐ ☐ Restrictor Valves		☐ ☐ ☐ Bearings
☐ ☐ ☐ Pipe Lines		☐ ☐ ☐ Check hydraulic oil level
☐ ☐ ☐ Hose Lines		☐ ☐ ☐ Mounting Bolts
☐ ☐ ☐ Outrigger Cylinders		☐ ☐ ☐ Swing Gear
☐ ☐ ☐ Boom Crowd Cylinders		☐ ☐ ☐ Swing Pinion
☐ ☐ ☐ Control Valves		☐ ☐ ☐ Seals - Hydraulic
☐ ☐ ☐ Swing Motor		☐ ☐ ☐ Leaks

OK REPAIR N/A	BOOM:	OK REPAIR N/A
☐ ☐ ☐ Shipper Welds		☐ ☐ ☐ Support Roller
☐ ☐ ☐ Boom Welds		☐ ☐ ☐ Boom Pins
☐ ☐ ☐ Pins - Boom Pivot		☐ ☐ ☐ Boom Main Section

OK REPAIR N/A	OPERATIONAL CHECKS:	OK REPAIR N/A
☐ ☐ ☐ Operators familiar with load charts?		☐ ☐ ☐ Vehicle is leveled, working properly?
☐ ☐ ☐ Test emergency descent valve?		☐ ☐ ☐ Brakes & brake systems check out?
☐ ☐ ☐ Out rigger pads not cracked?		☐ ☐ ☐ Safety pressure relief valves check out?
☐ ☐ ☐ Hydraulic hoses in good condition?		☐ ☐ ☐ Back-up alarm is working?
☐ ☐ ☐ Does boom swing break work properly?		☐ ☐ ☐ Does the horn work?

☐ ☐ ☐ Outriggers fully extended, working properly, and swing radius barricades in place?

☐ ☐ ☐ Boom angle indicator is available and working?

☐ ☐ ☐ Swing through 360 degrees, does boom angle indicator stay the same throughout rotation?

☐ ☐ ☐ Engine is started and gauges are checked and working properly?

☐ ☐ ☐ Extend out the boom, are all sections extending evenly?

Comments:

Signature (person(s) performing inspection/evaluation) Date

Items to check during the daily inspection:

- Check all welds between cylinders and booms for cracks or wear
- Inspect all pivot pins for security of their locking devices
- Check exposed cables, sheaves, and leveling devices for wear and secure attachment
- Inspect hydraulic system for frayed hoses and leaks
- Check lubrication and fluid levels
- Inspect boom and basket for cracks or abrasions
- Check for the load capacity posting
- Operate boom from ground controls through one complete cycle

Prestart Checks:

- Ensure that there are no obstacles around the work platform and in the path of travel such as holes, drop offs, ditches, soft fill, or debris
- Check overhead clearances
- Make sure the batteries are fully charged. Disconnect the AC charger cord from the external power source
- Make sure that the Free-Wheeling Valve is fully closed
- Make sure all guardrails and lock-pins are in place and locked in position
- Make sure both side battery and hydraulic trays are closed and locked

What to do when using a bucket or other aerial device:

- Wear a safety harness connected to the boom. Do not attach safety harness to adjacent pole or structure
- Ensure that no one is in the area before lowering stabilizers, outriggers, or the boom
- Ensure that each axle is horizontal when vehicle is parked on a hill. Work with the boom pointed uphill beyond the vehicle center
- Protect a roadway job site with traffic warning signs, lights, and barricades. Determine if extended boom movements will interfere with traffic
- Secure all tools when not in use
- Maintain the recommended distance from electrical wires unless you and the bucket are certified for electrical work
- Face the direction of travel
- Operate hydraulic controls slowly for smooth platform motion

What not to do:

- Do not stand on top of a bucket or use planks or ladders to gain extra height
- Do not exceed the rated load limit
- Do not ride from one job to another in the bucket
- Don’t climb from bucket to another position without being secured to new position
- Do not work above other workers. Clear the area below
- Do not throw tools to or from an elevated bucket
- Do not attempt to slow any air or hydraulic leak by using your hand or body

SCISSOR LIFT OPERATOR DAILY INSPECTION/CHECKLIST

Company Name:	Time:	Date:
Site Location:	Job Foreman/Supervisor:	
Person(s) Making Inspection:		
Equipment Type:	Equipment #s:	Manufacturer:

OK	REPAIR	N/A	MECHANICAL
☐	☐	☐	Structural damage or cracked welds – Visual walk-around inspection.
☐	☐	☐	Parking brake – Check operation.
☐	☐	☐	Tires/wheels & fasteners – Visually inspect, check operation & tightness.
☐	☐	☐	Guides/rollers & slider pads – Visually inspect, check operation, and ensure there is no metal to metal contact with slider, slider side, or running surface. Check for free movement of surface. Also check for free movement of the slider pin through the slider.
☐	☐	☐	Railings & railing lock pins – Visually inspect & check tightness.
☐	☐	☐	Entry chains or gates – Check operation & tightness.
☐	☐	☐	Bolts and fasteners – Check tightness.
☐	☐	☐	Safety Bar – Check operation.
☐	☐	☐	Wheel Bearings & King pins – Visually inspect, check operation & lubricate.
☐	☐	☐	Pothole Protection – Visually inspect & check operation.
☐	☐	☐	Steering cylinder & tie rod – Visually inspect, check operation & lubricate.

OK	REPAIR	N/A	ELECTRICAL
☐	☐	☐	Battery fluid level – Visually inspect.
☐	☐	☐	Control switches – Visually inspect & check operation.
☐	☐	☐	Cables & wiring harnesses – Visually inspect.
☐	☐	☐	Battery Terminals – Visually inspect & check tightness.
☐	☐	☐	Terminals & Plugs – Check tightness.
☐	☐	☐	Generator/receptacle – Visually inspect & check operation.
☐	☐	☐	Limit switches – Check operation.

OK	REPAIR	N/A	HYDRAULIC
☐	☐	☐	Hydraulic oil reservoir level – Check oil level.
☐	☐	☐	Hydraulic Hoses/Fittings – Visually inspect & check for leaks.
☐	☐	☐	Lift/lowering time – Check operation & refer to specification tables.
☐	☐	☐	Cylinders – Visually inspect & check operation.
☐	☐	☐	Emergency lowering – Check operation.
☐	☐	☐	Lift capacity – Check relief valve setting & refer to specification tables.

OK	REPAIR	N/A	MISCELLANEOUS
☐	☐	☐	Manual – Visually check that proper manual is in box.
☐	☐	☐	Placards, I.D. plates, warnings & control labels – Replace if missing/illegible.

OK	REPAIR	N/A	PRESTART CHECKS
☐	☐	☐	Ensure that there are no obstacles around the work platform and in the path of travel such as holes, drop offs, ditches, soft fill, or debris.
☐	☐	☐	Check overhead clearances.
☐	☐	☐	Make sure the batteries are fully charged. Disconnect the AC charger cord from the external power source.
☐	☐	☐	Make sure that the Free-Wheeling Valve is fully closed.
☐	☐	☐	Make sure all guardrails and lock-pins are in place and locked in position
☐	☐	☐	Make sure both side battery and hydraulic trays are closed and locked.

NOTE: At any point during this inspection there are any deficiencies, do not operate lift any further. Notify the proper personnel or repair unit as needed. Do not operate equipment without proper authorization and training.

Signature (person(s) performing inspection/evaluation) Date

Items to check during the daily inspection:

- Tires for proper pressure and wheels for loose or missing lug nuts
- Steer cylinder, linkage, and tie rods for loose or missing parts, damage, & leaks
- Hydraulic oil for leaks and fluid level. Hydraulic hoses, lift cylinder(s), and connections for leaks or loose connections
- Fuel supply – adequate fuel, filler cap in place, no damage, leaks, or spills
- Battery for fluid level and state of charge
- Proper connection of all quick-disconnect hoses
- Structural components for damage, broken parts, cracks in welds, including scissor arms, outrigger arms, and pads
- Ladder or steps for damage and debris (ladder must be firmly secured to the platform and relatively free of grease, mud and dirt)
- Beacon and warning lights for missing and defective lenses or caps
- Ground controls (manual and powered) – including emergency stop switch and platform lower/lift switch – for proper function and damaged and missing control sticks/switches
- Decals and warning signs to make sure they are clean, legible, and conspicuous

After mounting the platform, check:

- Platform assembly for missing or loose parts, missing or loose lock pins & bolts
- Platform floor for structural damage, holes, or cracked welds and any dirt, grease, or oil that can create a hazard
- Operator's manual to make sure it is in place
- Extendable platform deck for ease of extension/retraction and proper function of locking position of platform
- Guardrails to make sure they are in place and secure
- Access gate for ease of movement, missing parts, latch, and locking capabilities
- All fall protection anchorage points
- All control mechanisms for broken or missing parts
- All emergency controls for proper function – stopping, descending, master OFF switch
- All safety devices such as tilt and motion alarms for malfunction
- Swivels for freedom of rotation
- Scissors for smooth movement up and down
- Brakes for stopping capabilities
- Horn for proper function

POLICY

Solomon Corporation has implemented this policy to ensure no employee is exposed to airborne concentrations of asbestos at levels in excess of permissible exposure limits (PEL). Asbestos exposure poses adverse health effects including respiratory disease and various types of cancer. Exposure to asbestos has been shown to cause lung cancer, asbestosis, mesothelioma, and cancer of the stomach and colon.

Corporate EH&S Manager Mike Dahl is the supervisor responsible for ensuring the following training, engineering controls, and safe work practices are implemented and enforced.

TRAINING

Solomon Corporation will administrate a training program for all employees who are exposed to asbestos at or above PEL.

Employees will be provided with information and instruction on respirators, protective clothing, other Personal Protective Equipment (PPE), and their limitations.

Corporate EH&S Manager Mike Dahl will provide employees with information and training prior to or at the time of their initial assignment to a work area where asbestos is present.

Written materials will be readily available to all affected employees.

Documented Asbestos Awareness Training will be provided for employees whose work activities may contact Asbestos Containing Material (ACM) or Presumed Asbestos Containing Material (PACM) but do not disturb the ACM or PACM during their work activities.

If exposures are above the action level, employees will be provided with information and training at least annually thereafter.

The training program will be accomplished in a manner that employees are able to understand and will include health effects associated with exposure to asbestos.

The training will also include information on the relationship between smoking and exposure to asbestos producing lung cancer.

A certificate of training will be provided and maintained.

POTENTIAL ASBESTOS LOCATIONS

The following are possible locations where employees may be exposed to asbestos during their job functions. Asbestos materials are used in the manufacture of heat-resistant clothing, automotive brake and clutch linings, and a variety of building materials including: insulation, soundproofing, floor tiles, roofing felts, ceiling tiles, and fire-resistant drywall.

Asbestos is also present in pipe and boiler insulation materials, pipeline wrap and in sprayed-on materials located on beams, in crawlspaces and between walls.

Safety Data Sheets for all hazardous materials are available to employees at the Company office. An inventory of PACM and ACM is also maintained at the Company office. The inventory is provided to all employees and contractors working in the inventoried areas.

EXAMPLES OF "FRIABLE" OR "NON-FRIABLE" ASBESTOS INCLUDE:

- Friable means that the material can be crumbled with hand pressure and so is then likely to emit fibers. The fibrous or fluffy sprayed-on materials used for fireproofing, insulation, or sound proofing are considered to be friable and readily release airborne fibers if disturbed
- Materials such as vinyl-asbestos floor tile or roofing felts are considered non-friable and generally do not emit airborne fibers unless subjected to sanding or sawing operations. Asbestos-cement pipe or sheet can emit airborne fibers if the materials are cut, abraded, or sawed, or if they are broken during demolition operations
- All appropriate regulation signs and labels will be posted in areas of potential exposure to asbestos
- Solomon Corporation employees will abide warning signs and labels and will not disturb the Asbestos Containing Material. Signs and labels will identify the material which is present, its location, and appropriate work practices which, if followed, will ensure that Asbestos Containing Material (ACM) and/or Presumed Asbestos Containing Material (PACM) will not be disturbed. Corporate EH&S Manager Mike Dahl will ensure that employees working in and adjacent to regulated areas comprehend the warning signs

The regulation warning signs will bear the following information:

- Warning signs that demarcate the regulated area will be provided and displayed at each location where a regulated area is required to be established. Signs will be posted at such a distance from such a location that an employee may read the signs and take necessary protective steps before entering the area marked by the signs

Where the use of respirators and protective clothing is required in the regulated area, the warning signs will include the following:

- Solomon Corporation will ensure that employees working in and contiguous to regulated areas comprehend the required warning signs that are posted. Means to ensure employee comprehension may include the use of foreign languages, pictographs, and graphics

- Labels will be affixed to all products containing asbestos and to all containers containing such products, including waste containers. Where feasible, installed asbestos products will contain a visible label.
  - Labels will be printed in large, bold letters on a contrasting background.
  - Labels will be used in accordance with the requirements of §1910.1200 of OSHA's Hazard Communication standard, and will contain the following information:

Regular monitoring of air quality in work areas will be provided to ensure that no employee is exposed to an airborne concentration of asbestos in excess of 1.0 fiber per cubic centimeter of air (1 f/cc) in 30 minutes.

Air quality will be determined from breathing zone air samples. The samples will be representative of the 8-hour Time Weighted Average (TWA) and 30-min. short-term exposure. Measurement records of all monitoring tests will be kept available at the Company office.

MEDICAL SURVEILLANCE

- The medical surveillance program for employees who potentially may be exposed to asbestos at or above the action level or Permissible Exposure Limits (PEL) will be provided under the supervision of a licensed physician at no cost to the employee
- The medical surveillance program is provided to ensure employees are not exposed to hazardous levels of asbestos in accordance with §1926.1101. Appendices A and B of this document are available to all employees at the Company office

EXPOSURE CONTROL AND PPE

- If the TWA and/or excursion limit is exceeded, this written program to reduce employee exposure will be implemented. Engineering controls and work practices will be implemented to reduce/maintain the exposure below TWA
- Reducing exposure levels will be accomplished by means of engineering controls, work practice controls, and the use of respiratory protection. Engineering and work practice controls will include exhaust systems for hand tools, wet methods, clean-up procedures, and PPE. This will be done except to the extent that such controls are not feasible
- Respirators will be used in the following 4 circumstances: work practice controls; work operations; to reduce exposure; in emergencies
- Solomon Corporation will provide, at no cost to the employees, respirators that meet National Institute of Occupational Safety and Health (NIOSH) approval. Powered, air-purifying respirators will be available when employees choose to use this type, or when the respirator will provide adequate protection.

ASBESTOS REGULATED AREAS

Employees are informed of all regulated areas and are properly trained in entrance procedures, safety requirements, and practices while in regulated areas.

All Class I, II, and III asbestos work will be conducted within regulated areas. All other operations will be conducted within a regulated area where airborne concentrations of asbestos exceed, or there is a reasonable possibility they may exceed a PEL. Regulated areas will comply with the following requirements:

- The regulated area will be demarcated in any manner that minimizes the number of persons within the area and protects persons outside the area from exposure to airborne asbestos. Where critical barriers or negative pressure enclosures are used, they may demarcate the regulated area. Signs will be provided and displayed as required.

  Access to regulated areas will be limited to authorized persons only.

  All persons entering a regulated area where employees are required to wear respirators will be supplied with a regulation respirator.

- Corporate EH&S Manager Mike Dahl will ensure that employees do not eat, drink, smoke, chew tobacco or gum, or apply cosmetics in the regulated area.
- Corporate EH&S Manager Mike Dahl will ensure that all asbestos work performed within regulated areas is supervised by a Competent Person.
- The Solomon Corporation Respiratory Protection Program and required respiratory protective equipment is provided at no cost for all employees with potential for exposure to asbestos.
- In the event of an emergency where airborne hazardous materials are released at hazardous levels, employees not wearing sufficient PPE for the situation will be immediately evacuated to a safe area until the hazard is contained.
- Adequate ventilation and appropriate engineering controls will be ensured in all enclosed work areas.
- Employees will wear appropriate PPE at all times while in work areas. This PPE will include proper eye/face protection in accordance with §1910.133 where appropriate.
- When airborne concentration of asbestos are above the TWA, appropriate PPE will be provided. PPE will include coveralls, gloves, head coverings, foot coverings, face shields, and vented goggles.

Corporate EH&S Manager Mike Dahl will ensure that the negative pressure respirators fit properly and are checked annually to make sure that the respirator continues to fit properly. Employees wearing negative pressure respirators will have either quantitative or qualitative fit tests; the qualitative fit tests may be used only for testing the fit of a half mask. Corporate EH&S Manager Mike Dahl will supervise this testing.

All employees who perform work in regulated areas are covered by this program. Employees who perform housekeeping activities during and after construction activities are covered by the asbestos construction standard.

Solomon Corporation employees will be protected from exposure when working on multi-contractor worksites. If employees working immediately adjacent to a Class I asbestos job are exposed to asbestos due to the inadequate containment of such job, Corporate EH&S Manager Mike Dahl will either remove the employees from the area until the enclosure breach is repaired; or perform an initial exposure assessment pursuant to 1926.1101(f).

TRAINING

Solomon Corporation will institute a training program for all employees who are potentially exposed to arsenic and assure employee participation.

Training will be provided before initial assignment and at least annually.

EXPOSURE MONITORING

It is the policy of Solomon Corporation that determination of airborne exposure levels will be made from air samples that are representatives of each employee's exposure to inorganic arsenic over an eight (8) period.

If the initial monitoring or subsequent monitoring reveals employee exposure to be above the action level (5ig/m^3)and below the permissible exposure limit the employer will repeat monitoring at least every six months.

Solomon Corporation will continue monitoring at the required frequency until at least two consecutive measurements, taken at least seven (7) days apart, are below the action level at which time Solomon Corporation may discontinue monitoring.

It is the determination of Solomon Corporation to ensure that at 10 micrograms per cubic meter of air (10 ug/m^3) a written compliance program will be implemented.

EMPLOYEE NOTIFICATION

Solomon Corporation within 15 working days after the receipt of the results of any monitoring performed under this section, notify each affected employee of these results either individually in writing or by posting the results in an appropriate location that is accessible to affected employees.

Whenever the results indicate that the representative employee exposure exceeds the permissible exposure limit, Solomon Corporation will include in the written notice a statement that the permissible exposure limit was exceeded and a description of the corrective action taken to reduce exposure to or below the permissible exposure limit.

METHODS OF COMPLIANCE

Solomon Corporation will establish and implement a written program to reduce exposures to or below the permissible exposure limit by means of engineering and work practice controls.

Written plans for these compliance programs will include at least the following:

- A description of each operation in which inorganic arsenic is omitted; e.g. machinery used, material processed, controls in place, crew size, employee job responsibilities and maintenance practices
- Engineering plans and studies used to determine methods selected for controlling exposure to inorganic arsenic
- A report of the technology considered in meeting the permissible exposure limit
- Monitoring data
- A detailed schedule for implementation of the engineering controls and work practices that cannot be implemented immediately and for the adaption and implementation of any additional engineering and work practices necessary to meet the permissible exposure limit
- Whenever the employer will not achieve the permissible exposure limit with engineering controls and work practices by December 31, 1979, the employer will include in the compliance plan an analysis of the effectiveness of the various controls, will install engineering controls and institute work practices on the quickest schedule feasible, and will include in the compliance plan and implement a program to minimize the discomfort and maximize the effectiveness of respirator use

It is the policy of Solomon Corporation that the written plans for the program will be submitted upon request to the Assistant Secretary and the Director, and will be available at the worksite for examination and copying by the Assistant Secretary, Director, or any affected employee or authorized employee representatives.

It is the determination of Solomon Corporation that the written program will be reviewed and updated annually or more often to reflect the status of the program.

HOUSEKEEPING

It is the policy of Solomon Corporation that the following practices will be implemented:

- Surfaces. All surfaces will be maintained as free as practicable of accumulations of inorganic arsenic
- Cleaning floors. Floors and other accessible surfaces contaminated with inorganic arsenic may not be cleaned by the use of compressed air, and shoveling and brushing may be used only where vacuuming or other relevant methods have been tried and found not to be effective
- Vacuuming. Where vacuuming methods are selected, HEPA vacuums will be used and emptied in a manner to minimize the reentry of inorganic arsenic into the workplace
- Housekeeping plan. A written housekeeping and maintenance plan will be kept which will list appropriate frequencies for carrying out housekeeping operations, and for cleaning and maintaining dust collection equipment. The plan will be available for inspection by the Assistant Secretary
- Maintenance of equipment. Periodic cleaning of dust collection and ventilation equipment and checks of their effectiveness will be carried out to maintain the effectiveness of the system and a notation kept of the last check of effectiveness and cleaning or maintenance

RESPIRATORY PROTECTION

It is the policy of Solomon Corporation to ensure all respiratory protection will be in compliance with the 29 CFR 1910.134

For employees who use respirators, Solomon Corporation will provide respirators that comply with 29 CFR 1910.134. Respirators must be used during:

- Periods necessary to install or implement feasible engineering or work-practice controls
- Work operations, such as maintenance and repair activities, for which the employer establishes that engineering and work-practice controls are not feasible
- Work operations for which engineering and work-practice controls are not yet sufficient to reduce employee exposures to or below the permissible exposure limit
- Emergencies

PERSONAL PROTECTIVE EQUIPMENT

Where the possibility of skin or eye irritation from inorganic arsenic exists, and for all workers working in regulated areas, Solomon Corporation will provide appropriate and clean protective work clothing and equipment such as: coveralls or similar full-body work clothing; gloves, and shoes or coverlets; face shields or vented goggles when necessary to prevent eye irritation, which comply with the requirements of §1910.133(a)(2)-(6).

Solomon Corporation will ensure the containers of contaminated protective clothing and equipment in the workplace or which are to be removed from the workplace are labeled and that the labels include the following information:

HYGIENE FACILITIES & PRACTICES

Solomon Corporation will provide for employees working in regulated areas or subject to the possibility of skin or eye irritation from inorganic arsenic, clean change rooms equipped with storage facilities for street clothes and separate storage facilities for protective clothing and equipment.

Solomon Corporation assures that employees working in regulated areas or subject to the possibility of skin or eye irritation from inorganic arsenic shower at the end of the work shift.

Solomon Corporation will provide facilities for employees working in areas where exposure, without regard to the use of respirators, exceeds 100 ug/m^3 to vacuum their protective clothing and clean or change shoes worn in such areas before entering change rooms, lunchrooms or shower rooms and will assure that such employees use such facilities.

MEDICAL SURVEILLANCE

Solomon Corporation will establish and maintain an accurate record for will institute a medical surveillance program for the following employees:

- All employees who are or will be exposed above the action level, without regard to the use of respirators, at least 30 days per year
- All employees who have been exposed above the action level, without regard to respirator use, for 30 days or more per year for a total of 10 years or more of combined employment with the employer or predecessor employers prior to or after the effective date of this standard. The determination of exposures prior to the effective date of this standard will be based upon prior exposure records, comparison with the first measurements taken after the effective date of this standard, or comparison with records of exposures in areas with similar processes, extent of engineering controls utilized and materials used by that employer

This record will include:

- The name, social security number, and description of duties of the employee
- A copy of the physician's written opinions
- Results of any exposure monitoring done for that employee and the representative exposure levels supplied to the physician
- Any employee medical complaints related to exposure to inorganic arsenic

Solomon Corporation will in addition keep, or assure that the examining physician keeps, the following medical records;

- A copy of the medical examination results including medical and work history required under paragraph (n) of this section
- A description of the laboratory procedures and a copy of any standards or guidelines used to interpret the test results or references to that information
- The initial X-ray
- The X-rays for the most recent 5 years
- Any X-rays with a demonstrated abnormality and all subsequent X-rays

Solomon Corporation will maintain or assure that the physician maintains those medical records for at least 40 years.

POLICY

Solomon Corporation will use Ground Fault Circuit Interrupters (GFCI) on all jobsites when possible. When GFCI equipment is infeasible, the Assured Equipment Grounding Conductor Program (AEGCP) with the following guidelines, procedures, engineering controls, and work practices will be enforced to eliminate injuries from malfunctions, improper grounding and defective electrical tools and systems

RESPONSIBILITIES

Corporate EH&S Manager Mike Dahl is the Competent Person in charge of the AEGCP.

TRAINING

Corporate EH&S Manager Mike Dahl will provide training to ensure that the grounding requirements, purpose, function, and proper use of tools to be used in the normal function of their jobs is understood by employees and that the knowledge and skills required for the safe application, and usage is acquired by employees.

PROCEDURES

- A written description of this program, are available on the jobsite for inspection or copying by OSHA and any affected employee from Corporate EH&S Manager Mike Dahl upon request.
- This AEGCP applies to all Solomon Corporation sites, covering all cord sets and receptacles that are not part of the building or structure, and equipment connected by cord and plug which are available for use or used by employees.
- *Solomon Corporation* will not provide or allow employees to use equipment that does not meet the AEGCP requirements.

INSTALLATION

Equipment grounding conductors shall be installed as follows:

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 supplying the receptacles in accordance with the applicable requirements of the National Electrical Code.

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

The exposed noncurrent-carrying metal parts of 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.

INSPECTIONS AND TESTS

Each day, before use, employees are required to visually inspect each extension cord, or other device, and any equipment connected by cord and plug, for external defects, such as deformed or missing pins or insulation damage, and for signs of possible internal damage. Cord sets, devices, and receptacles that are fixed and not exposed to damage are exempt from this inspection. Employees are prohibited from using damaged or defective equipment. Any equipment found to be damaged or defective will be immediately tagged “DO NOT USE” and removed from service.

Inspections and tests performed as required by this program will be recorded as to the identity of each receptacle, cord set, and cord and plug connected equipment that passed the test and will indicate the last date tested or interval for which is was tested. This record will be kept by means of logs, color-coding, or other effective means and will be maintained until replaced by a more current record. These records will be made available at the jobsite for inspection by OSHA and any affected employees.

TESTING SCHEDULE

All required tests must be performed by a competent person:

- Before first use
- Before equipment is returned to service following any repairs
- 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)
- At intervals not to exceed 3 months, except that cord sets and receptacles which are fixed and not exposed to damage shall be tested at intervals not exceeding six months

TEST RECORDS

- A log will be kept on the job-site of all tests performed. These records will be kept until replaced by a newer record. The log will include:
  - Pass/Fail record of each receptacle, cord set, and cord- and plug-connected equipment that was tested
  - Date of testing or test intervals
  - The equipment will be marked with the test date or a color-coded tape will delineate the most recent test, for example

    WINTER - White

    SPRING - Green

    SUMMER - Red

    FALL - Orange

POLICY

Solomon Corporation has adopted this Behavior-based Safety Program for the safety of our employees and help prevent occupational injuries and illness.

The elements of our program consist of:

- Common Goals - Employee and Managerial commitment to the process
- Creating a systematic, ongoing process that defines a set of behaviors that reduce the risk of work-related injury, derived from safety assessments
- Training personnel in the Observation Process
- Observation and data collection on the frequency of critical safety practices
- Feedback and reinforcement to encourage and support positive safety practices
- Action Plan - Team meetings to decide on how to proceed, based on the data
- Review - Monitoring the progress of the Action Plan on a regular basis

OBSERVATION

A critical element in our Behavior-based Safety (BBS) Program depends on site observation. Site observation includes direct and open communication with the employees involved. The observer will:

- Meet with the worker at the site and introduce himself and the job being done
- Observe and monitor the worker, noting his safe behaviors
- Monitor the At-risk behaviors the worker is putting himself in

OBSERVATION PROCESS TRAINING

Training in the observation process will be established and implemented to the proper personnel. These individuals will be experienced employees of the Company. Training will consist of either classroom or on the job training.

ELEMENTS OF THE TRAINING PROGRAM INCLUDE:

- Who is to be trained
- Ensuring employees know the basic elements of the Behavior-based Program
- Ensuring that all employees involved in the process are trained in the classroom or on the job

THE TYPES OF TRAINING THAT WILL BE PROVIDED ARE:

- Management training: to ensure the common goals and process of the program are being met
- New employee training: effectively communicating the program to all employees
- Refresher training: to be performed as needed or when changes are made to the policy or procedure of the program

This training will include:

- Program objectives and incident report reviews
- How to conduct the site observations
- The observer's knowledge of the job procedures they observe
- Knowledge of the correct work and safety procedures involved
- How to complete the observation form
- How to determine and analyze At-risk behaviors
- Feedback training and role play (mentoring and coaching)- Employees should be aware they may be observed at any time

This training process will be documented in order to keep on record those qualified to observe on site behaviors and effectively implement the program's elements.

FEEDBACK

Communication is a crucial element in a successful Behavior-based Safety Program. To effectively accomplish this, feedback is of key importance.

The observer will start by commending the safe behavior the worker was doing during his work. You then want to explain, one by one, the At-risk behaviors the worker was doing. Then the observer asks the worker why he was putting himself at risk. For example, if the worker is welding a piece of metal and the sparks are flying in the workers direction. The observer would then ask the worker why he was not wearing protective clothing, like flame-retardant apron.

At this time the observer and worker will discuss the at-risk behaviors until the worker agrees to try the suggested recommendation made by the observer. The worker might be aware of his at-risk behavior or maybe not. The worker may be doing the at-risk behavior for a long time.

The Observer's job here is to highlight this behavior, then explain the associated negative consequences with this behavior. The above discussion and agreement is the individual feedback which helps the worker to change his behavior. This feedback is considered as a form of reward since:

- The worker got commendable comments on his safe behavior.
- The worker understood his at-risk behavior without being reprimanded at site or reported to his superiors for further penalties.

KEY ELEMENTS FOR THE OBSERVER TO REMEMBER DURING THE FEEDBACK PROCESS ARE:

- Reviewing the observation with the employee
- Start with positive comments on behavior and procedure
- Reinforce these behaviors
- Describe and discuss the unsafe portions observed
- Determine the reasons for the unsafe actions with open-ended questions to the worker.

Re-emphasize that there are no negative consequences at this stage, so long as the observer and worker agree on the change of behavior.

DATA COLLECTION

At the end of the observation, the Observer will:

- Fill out an Observation Form with the safe and at-risk behaviors he noticed
- Record the date, time and location of the observations
- Note the workers comments and reasons for the at-risk behavior
- Record recommended safe behavior

The worker's name or identification number are not noted in the Observation Form.

- These Company forms will be used by Solomon Corporation to summarize the observation process. Recording this interaction is important for later detailed analysis by the committee in charge of the program
- Data gathering and the Observation Form will be gathered and entered into an electronic database. Reports will be generated for the committee to analyze at risk behavior trends
- Information taken from the observation and feedback phase of the program will be compiled in useful data and implemented in the action plan

ELEMENTS OF THE ACTION PLAN

In order to address unsafe behaviors Solomon Corporation will construct its Action Plan based on Observation Reports, trend analysis and recommendations from the Observers and employees. Corporate EH&S Manager Mike Dahl is responsible for the procedures of the Action Plan.

ACTION PLANNING WILL INCLUDE:

- Regularly scheduled meetings to analyze Behavior-based report findings
- Evaluating unsafe behaviors
- Designating responsible parties and time frames to complete the Action Plan
- Ensuring support of management

THE COMMITTEE WILL:

- Produce a set of recommendations to correct workers' behavior
- Recommendations may be as simple as providing Personal Protective Equipment (PPE) to workers in certain location, or increase work force in another location
- Some of the recommendations require site modification or costly machinery. Such recommendations are sent to top management for necessary approvals

THE COMMITTEE'S RESPONSIBILITY IS TO ENSURE THAT RECOMMENDATIONS WILL:

- Change the at-risk behaviors at the targeted location
- Eliminate hazards and risks caused by hardware or wrong design

FOLLOW-UP

Any Action Plans set out by Solomon Corporation at the direction of Corporate EH&S Manager Mike Dahl will be completed in a time frame agreed upon by the entire committee.

Regularly scheduled meetings will be held to:

- Assign responsibility for the completion of the Action Plan
- Ensure that the guidelines of the Action Plan are being carried out
- To document the Action Plan and its progress

POLICY

Solomon Corporation has implemented this policy to ensure that no employee is exposed to Benzene past the permissible exposure limits (PELs). Corporate EH&S Manager Mike Dahl is responsible for enforcing these engineering controls and work practices:

- Employees with information and training at their initial assignment to a work area where Benzene is present. Annual training If exposures are above the action level
- When any exposures are over the PEL, a written program will be established and implemented to reduce employee exposure to or below the PEL primarily through engineering and work practice controls
- A schedule for development and implementation of the engineering and work practice controls. These plans will be reviewed and revised based on the most recent exposure monitoring data
- Written compliance programs will be given upon request for to OSHA, affected employees and designated employee representatives
- Employees will be informed of all regulated areas and are properly trained in entrance procedure, safety requirements, and practices when in regulated areas

TRAINING

Solomon Corporation will institute, and enforce participation, a training program for all employees potentially exposed to benzene.

Solomon Corporation conduct training for employees who are assigned to workplaces where there is a potential for exposure to benzene. This training must occur prior to or at the time of initial assignment, and whenever a new exposure to benzene is introduced into the work area. The training will be repeated annually thereafter if exposures are above the action level.

The training program will be conducted in a manner which the employee is able to understand and will include:

- Requirements of OSHA's Benzene Standard and information available in Appendices A and B of the standard as well as how to access or obtain a copy of it in the workplace
- Description of the medical surveillance program and the information contained in Appendix C of OSHA's Benzene Standard
- Information on the quantity, location, manner of use, release and storage of benzene and the specific operations in the workplace that could result in exposure to benzene

The supervisor will inform all affected employees of the location of written training materials and will make these materials readily available, without cost, to the affected employees.

Employees will be instructed as to potential locations where they may be exposed to Benzene including: petroleum refining sites, tank gauging (tanks at producing, pipeline, and refining operations), field maintenance, confined spaces.

Training will be provided before initial assignment and at least annually.

EXPOSURE MONITORING

It is the policy of Solomon Corporation that determination of airborne exposure levels will be made from air samples that are representatives of each employee's exposure to benzene over an eight (8) period.

The PEL for benzene is 1 part benzene per million parts air (ppm). Since this is an 8-hour average, short-term exposures above the PEL are permitted as long as the average exposure over an 8-hour period does not exceed the PEL.

However, OSHA has set a Short Time Exposure Limit (STEL) for benzene that cannot be exceeded. The STEL is the greatest concentration of benzene in air to which exposure may occur for a fifteen-minute period. The current STEL is 5 ppm.

The action level is 0.5 ppm, measured over 8 hours. At this level, certain provisions of the standard, such as employee exposure monitoring and medical surveillance, are initiated. The action level is set lower than the PEL to better protect against overexposure. Solomon Corporation will continue monitoring at the required frequency until at least two consecutive measurements, taken at least seven (7) days apart, are below the action level at which time Solomon Corporation may discontinue monitoring.

Results	Frequency
Less than the action level (0.5 ppm) twice within 7 days	May discontinue monitoring
At or above the action level (0.5 ppm), and at or below the PEL (1 ppm)	Annual
Above the PEL	Semi-annual

EMPLOYEE NOTIFICATION

Solomon Corporation within 15 working days after the receipt of the results of any monitoring performed under this section, notify each affected employee of these results either individually in writing or by posting the results in an appropriate location that is accessible to affected employees.

Whenever the results indicate that the representative employee exposure exceeds the permissible exposure limit, Solomon Corporation shall include in the written notice a statement that the permissible exposure limit was exceeded and a description of the corrective action taken to reduce exposure to or below the permissible exposure limit.

METHODS OF COMPLIANCE

Solomon Corporation will establish and implement a written program to reduce exposures to or below the permissible exposure limit by means of engineering and work practice controls.

Written plans for these compliance programs shall include at least the following:

- A description of each operation in which benzene is used; e.g. machinery used, material processed, controls in place, crew size, employee job responsibilities and maintenance practices
- Engineering plans and studies used to select methods to control benzene exposure
- A report of the technology considered in meeting the permissible exposure limit
- Monitoring data
- A detailed schedule for implementation of the engineering controls and work practices that cannot be implemented immediately and for the adaption and implementation of any additional engineering and work practices necessary to meet the permissible exposure limit
- Whenever the employer will not achieve the permissible exposure limit with engineering controls and work practices, the employer must include in the compliance plan an analysis of the effectiveness of the various controls, shall install engineering controls and institute work practices on the quickest schedule feasible, and shall include in the compliance plan and implement a program to minimize the discomfort and maximize the effectiveness of respirator use

Written plans for the program will be submitted upon request to the Assistant Secretary and the Director, and will be available at the worksite for examination and copying by the Assistant Secretary, Director, or any affected employee or authorized employee representatives.

Solomon Corporation will review and update the program annually or more often to reflect the current status.

RESPIRATORY PROTECTION

Solomon Corporation has implemented and will maintain a Respiratory Protection Program in accordance with §1910.134. The Respiratory Protection Program and respiratory protective equipment is provided for all employees with potential for exposure to Benzene.

For employees who use required respirators, Solomon Corporation will provide respirators that comply with the Respiratory Protection Program and OSHA. Respirators will be used during periods necessary to install or implement feasible engineering and work practice controls and emergencies.

For air-purifying respirators, Corporate EH&S Manager Mike Dahl will ensure the replacement of the air-purifying element when it expires or at the beginning of each shift in which it is used, whichever comes first. An air-purifying element with a National Institute of Occupational Safety and Health (NIOSH) approved end-of-service-live indicator for benzene may be used until the indicator shows no further useful life.

Corporate EH&S Manager Mike Dahl will select approved respirators according to the table below:

Airborne concentration of benzene or condition of use	Respirator type
(a) Less than or equal to 10 ppm	(1) Half-mask air-purifying respirator with organic vapor cartridge.
(b) Less than or equal to 50 ppm	(1) Full facepiece respirator with organic vapor cartridges.
	(1) Full facepiece gas mask with chin style canister[1].
(c) Less than or equal to 100 ppm	(1) Full facepiece powered air-purifying respirator with organic vapor canister[1].
(d) Less than or equal to 1,000 ppm	(1) Supplied air respirator with full facepiece in positive-pressure mode.
(e) Greater than 1,000 ppm or unknown concentration	(1) Self-contained breathing apparatus with full facepiece in positive pressure mode.
	(2) Full facepiece positive-pressure supplied-air respirator with auxiliary self-contained air supply.
(f) Escape	(1) Any organic vapor gas mask; or
	(2) Any self-contained breathing apparatus with full facepiece.
(g) Firefighting	(1) Full facepiece self-contained breathing apparatus in positive pressure mode.
[1]Canisters must have a minimum service life of four (4) hours when tested at 150 ppm benzene, at a flow rate of 64 LPM, 25 ^{o}C, and 85% relative humidity for non-powered air purifying respirators. The flow rate shall be 115 LPM and 170 LPM respectively for tight fitting and loose fitting powered air-purifying respirators	

Employees who can’t use a negative-pressure respirator will be allowed to use a respirator with less breathing resistance, such as a powered air-purifying respirator or supplied-

PERSONAL PROTECTIVE EQUIPMENT

Personal protective clothing and equipment shall be worn where appropriate to prevent eye contact and limit dermal exposure to liquid benzene. Protective clothing and equipment shall be provided by the employer at no cost to the employee and the employer shall assure its use where appropriate. Eye and face protection shall meet the requirements of 29 CFR 1910.133. Protective clothing and equipment will be provided by Solomon Corporation at no cost to the employee and Solomon Corporation will assure its use where appropriate.

VENTILATION

Adequate ventilation will be ensured in all enclosed work areas.

Regular monitoring of air quality in work areas will be provided to ensure that PELs are not being exceeded. Records of all monitoring tests will be kept available at the Company office.

SIGNS & LABELS

All containers or vessels containing Benzene will be appropriately labeled to indicate the contents and the hazards of the contents Solomon Corporation will post signs demarcating regulated areas bearing the legend:

- DANGER
- BENZENE
- CANCER HAZARD
- FLAMMABLE
- NO SMOKING
- AUTHORIZED PERSONNEL ONLY
- RESPIRATOR REQUIRED

MEDICAL SURVEILLANCE

Solomon Corporation will institute medical surveillance programs for all employees exposed to benzene at concentrations at or exceeding the action level on 30 or more days per year, or exceeding the PEL or STEL for 10 or more days per year.

All medical procedures, including administration of medical disease questionnaires, will be performed by or under the supervision of a licensed physician and will be provided without cost to the employee, without loss of pay, and at a reasonable time and place. An accredited laboratory will conduct all laboratory tests.

Initial medical surveillance must occur prior to assignment to a job. The initial examination must consist of the following elements:

A detailed occupational history which includes:

- Past work exposure to benzene or any other hematological toxins
- A family history of blood dyscrasias including hematological neoplasms
- Blood dyscrasias including genetic hemoglobin abnormalities, bleeding abnormalities, abnormal function of formed blood elements
- Renal or liver dysfunction
- Medicinal drugs routinely taken
- Previous exposure to ionizing radiation
- Exposure to marrow toxins outside of the current work situation
- A complete physical examination

- Laboratory tests, which must consist of a complete blood count including a leukocyte, count with differential, a quantitative thrombocyte count, hematocrit, hemoglobin, erythrocyte count, and erythrocyte indices (mean corpuscular volume (MCV), mean corpuscular hemoglobin (MCH), and MCH concentration (MCHC)). The examining physician will review the results of these tests
- Additional tests the examining physician deems necessary

The physical examination must pay special attention to the cardiopulmonary system and shall include a pulmonary function test for all employees required to wear respirators for at least 30 days a year.

Solomon Corporation will provide each affected employee with a medical examination annually following the initial examination. These periodic examinations must include at least the following elements:

- A brief history regarding any new exposure to potential marrow toxins, changes in medicinal drug use and the appearance of physical signs relating to blood disorders
- A complete blood count including a leukocyte count with differential, quantitative thrombocyte count, hemoglobin, hematocrit, erythrocyte count and erythrocyte indices (MCV, MCH, MCHC)
- • Appropriate additional tests as necessary, in the opinion of the examining physician, in consequence of alterations in the components of the blood or other signs which may be related to benzene exposure

In addition to the monitoring required above, if an employee is exposed to benzene in an emergency, the Solomon Corporation will have the employee provide a urine sample at the end of the employee's shift and have a urinary phenol test performed on the sample within 72 hours. The urine specific gravity shall be corrected to 1.024. If the result of the urinary phenol test is below 75 mg phenol/L of urine, no further testing is required. If the result of the urinary phenol test is equal to or greater than 75 mg phenol/L of urine, the Solomon Corporation will provide the employee with a complete blood count including an erythrocyte count, leukocyte count with differential and thrombocyte count at monthly intervals for a duration of three (3) months following the emergency exposure.

- If the results of the complete blood count required for the initial, periodic and emergency examinations indicate any of the following abnormal conditions exist, then the blood count shall be repeated within 2 weeks
- The hemoglobin level or the hematocrit falls below the normal limit [outside the 95% confidence interval (C.I.)] as determined by the laboratory for the particular geographic area and/or these indices show a persistent downward trend from the individual's pre-exposure norms, provided these findings cannot be explained by other medical reasons
- The thrombocyte (platelet) count varies more than 20 percent below the employee's most recent values or falls outside the normal limit (95% C.I.) as determined by the laboratory; and the leukocyte count is below 4,000 per mm^3 or there is an abnormal differential count

The referred hematologist's or internist's evaluation shall include a determination as to the need for additional tests, and the Solomon Corporation will assure that these tests are provided. Supervisors will provide the following information to the examining physician:

- A copy of OSHA's Benzene Standard and Appendix A, B, and C of the standard
- A description of the affected employee's duties related to benzene
- The employee's actual or representative exposure level
- A description of any personal protective equipment used or to be used
- Information from previous employment-related medical examinations of the affected employee which is not otherwise available to the examining physician

The examining physician must provide a written opinion that contains the results of the affected employee's medical examination within 15 days of the examination, limited to the following information:

- The occupationally pertinent results of the medical examination and tests
- The physician's opinion concerning whether the employee has any detected medical condition(s) that would place the employee's health at increased risk of material impairment from exposure to benzene
- Any recommended limitations upon the employee's exposure to benzene, including removal from benzene exposure, or upon the employee's use of respirators, protective clothing, or other protective equipment
- A statement that the employee has been informed by the physician of the results of the medical examination and any medical conditions resulting from benzene exposure which require further explanation or treatment

Solomon Corporation will not reveal specific records, findings, and diagnoses in the written opinion with no bearing on the employee's ability to work in a benzene-exposed workplace.

MEDICAL REMOVAL PLAN

When referred to a hematologist/internist, the employee will be removed from areas where exposure may exceed the action level until evaluated. Following the examination, a decision will be made with the primary physician to allow the employee to return to areas where benzene exposure is above the action level or remove the employee. This decision will be reported, in writing, to the employee. The physician will state the required probable duration of removal from occupational exposure to benzene above the action level and the requirements for future medical examinations to review the decision.

For any removed employee, Solomon Corporation will provide a follow-up examination where the physician, in consult with the hematologist/internist, will decide within six months of the date the employee was removed as to whether the employee will be returned to the usual job or whether the employee should be removed permanently.

Whenever an employee is temporarily removed from benzene exposure, the Solomon Corporation will transfer the employee to a comparable job for which the employee is qualified (or can be trained for in a short period) and where benzene exposures are as low as possible, but in no event higher than the action level. The Solomon Corporation will maintain the employee's current wage rate, seniority and other benefits. If there is no such job available, the Solomon Corporation will provide medical removal protection benefits until such a job becomes available or for 6 months, whichever comes first.

In the case that an employee is removed permanently from benzene, the employee shall be given the opportunity to transfer to another position which is available or later becomes available for which the employee is qualified (or can be trained for in a short period) and where benzene exposures are as low as possible but in no event higher than the action level. Solomon Corporation will assure that such employee suffers no reduction in current wage rate, seniority or other benefits as a result of the transfer.

Medical Removal Protection Benefits

Solomon Corporation will provide to the affected employee six months of medical removal protection benefits immediately following each occasion an employee is removed from exposure to benzene because of hematological findings, unless the employee has been transferred to a comparable job where benzene exposures are below the action level. Those benefits include the current wage rate, seniority and other benefits of an employee as though the employee had not been removed.

Solomon Corporation obligation to provide medical removal protection benefits to a removed employee will be reduced to the extent that the employee receives compensation for earnings lost during the period of removal either from a publicly or employer-funded compensation program, or from employment with another employer made possible by virtue of the employee's removal.

Record Keeping

Solomon Corporation will maintain an accurate record of:

- Exposure monitoring data, which must be maintained for at least thirty years, including the dates, number, duration, and results of each of the samples taken, including a description of the procedure used to determine representative employee exposures
- A description of the sampling and analytical methods used
- A description of the type of respiratory protective devices worn, if any

- The name, social security number or company ID number, job classification and exposure levels of the employee monitored and all other employees whose exposure the is intended to represent. Medical surveillance records, which will be maintained for the at least the duration of the employment plus thirty years, including:
  - The name and social security number or Solomon Corporation ID number of the employee
  - The copy of the physicians written opinion on the initial, periodic and special examinations, including results of medical examinations and all tests, opinions and recommendations;
  - Any employee medical complaints related to benzene exposure;
  - A copy of the information provided to the physician; and
  - A copy of the employee's medical and work history related to exposure to benzene or any other hematologic toxins.

Upon request, Solomon Corporation will provide records maintained as a requirement of this policy for examination and copying to OSHA. Employee exposure and medical records required by this policy shall be provided upon request for examination and copying, to the subject employee or former employee or to anyone having the specific written consent of the subject employee or former employee.

BENZENE AWARENESS

All employees who may be exposed to benzene need to know the following characteristics, health effects and safety precautions including when to wear the needed Personal Protective Equipment (PPE), not smoking and even when to use the available fire extinguishers and what to do in an emergency.

BENZENE CHARACTERISTICS

Benzene is a flammable, clear colorless liquid with a pleasant sweet odor. The smell is not enough warning of the hazardous presence of benzene and should not be relied upon alone. Exposure to high concentrations can cause a breathless, irritable, euphoric or giddy experience with eye nose and respiratory irritation and even a headache, dizziness, nausea or a drunk feeling. Long term exposure to low concentrations can cause blood disorders that show now symptoms (e.g. anemia, leukemia).

PPE

When employees are instructed to wear certain types of PPE such as eye and face protection, boots, gloves, sleeves and aprons it is because their work environment has been analyzed and it's been determined that type of PPE is necessary to provide an acceptable level of safety from Benzene's characteristics.

This is why employees always have to wear and properly maintain the PPE according to the steps described in their training.

FIRE EXTINGUISHERS

Fire extinguishers of the carbon dioxide, dry chemical, or foam type will be readily available. Employees will know where they are located and how to operate them. Benzene is classified as a 1 B flammable liquid and is highly flammable and vapors may form explosive mixtures in air. Locations where Benzene may be present in quantities sufficient to produce explosive or ignitable mixtures are considered Class I Group D locations.

SMOKING

Smoking is prohibited in areas where Benzene is used or stored.

EMERGENCY RESPONSE PLANS

Before any employees begin work they will know the site specific emergency plans including how to recognize and warn others of a benzene related emergency, how to recognize there is an emergency, what to do and where to go including who to report to at primary and secondary meeting locations.

POLICY

Solomon Corporation is committed to the safety and health of our employees and to preventing the spread of bloodborne pathogens by eliminating occupational exposure to blood and other potentially infectious materials (OPIM). Therefore, Solomon Corporation adheres to the following bloodborne pathogen policy and Exposure Control Plan (ECP).

To eliminate occupational exposure to OPIM, all employees will follow the policy of universal precautions, which is assuming all blood and body fluids are infectious and taking the necessary precautions to not contact them without the proper personal protective equipment (PPE), and properly disinfecting themselves and the environment afterwards.

This written exposure control plan will be available to all employees that request it.

If employees — such as those designated as responsible for first aid and medical assistance, or those doing work in certain medical or sanitation facilities —are exposed to bloodborne pathogens, all measures within this program will be taken to prevent the spread of disease.

RESPONSIBILITIES

EMPLOYER RESPONSIBILITIES

- Enact and enforce an exposure control plan to prevent occupational exposure to potentially infectious materials
- Identify employees who may reasonably be anticipated to come into contact with blood and other potentially infectious materials
- Provide for post-exposure evaluation and follow-up should an employee be exposed to potentially infectious materials
- Ensure employees receive appropriate bloodborne pathogens training
- Ensure an adequate supply of Personal Protective Equipment

SAFETY COMMITTEE RESPONSIBILITIES

- Develop and implement a site-specific exposure control plan
- Identify employees who may reasonably be anticipated to come into contact with blood and other potentially infectious materials
- Develop, conduct, and document training for bloodborne pathogens safety
- Investigate exposure incidents and recommend work-practice changes
- Recommend personal protective equipment (PPE), if necessary

EMPLOYEE RESPONSIBILITIES

- Offer input on ECP as appropriate, including identification, evaluation, and selection of new control methods
- Follow all elements of the bloodborne pathogens policy and training
- Notify a supervisor if they encounter any problems or concerns related to this policy

TRAINING

Solomon Corporation will ensure employees who may reasonably be exposed to potentially infectious materials participate in a BBP training program. Solomon Corporation will provide this training at no cost to the employee during working hours.

Training will be provided: at the time of assignment to/prior to working on tasks where occupational exposure may take place; and at least annually. Solomon Corporation will provide additional training when tasks or procedures are added or changed that affect the employee's occupational exposure. It is acceptable for additional training to be limited to addressing only the changes or additions to the employees' exposure. Solomon Corporation will use only training material that is appropriate in content and vocabulary to educational level, literacy, and language of employees.

TRAINING COMPONENTS

The training program will contain, at a minimum, the following elements:

- An accessible copy of the regulatory text of CFR 1910.1030, this bloodborne pathogen policy and exposure control plan, and an explanation of its contents
- A general explanation of the epidemiology and symptoms of bloodborne diseases
- An explanation of the modes of transmission of bloodborne pathogens
- An explanation of the appropriate methods for recognizing tasks and other activities that may involve exposure to blood and other potentially infectious materials
- An explanation of the use and limitations of methods to prevent or reduce exposure, including engineering controls, work practices, and personal protective equipment
- Information on the types, proper use, location, removal, handling, decontamination, and disposal of personal protective equipment
- An explanation of the basis for selection of personal protective equipment (PPE)
- Information on the hepatitis B vaccine, including information on its efficacy, safety, method of administration, the benefits of being vaccinated, and that the vaccine and vaccination will be offered free of charge to employees who face occupational exposure
- Information on the appropriate actions to take and persons to contact in an emergency involving blood or other potentially infectious materials
- An explanation of the procedures to follow if an exposure incident occurs, including the method of reporting the incident and the medical follow-up that will be made available
- Information on the post-exposure evaluation and follow-up that the employer is required to provide for the employee following an exposure incident
- An explanation of the applicable signs, labels, and/or color coding
- An opportunity for interactive questions and answers with the person conducting the training session
- The person conducting the training will be knowledgeable in the subject matter of the training program as it relates to the workplace

TRAINING RECORDS

Training records will include the following information:

- Dates of the training sessions
- Contents or a summary of the training sessions
- Names and qualifications of persons conducting the training
- Names and job titles of all persons attending the training sessions
- Employee training records will be maintained for three years from the date on which the training occurred

SAFE PRACTICES

EXPOSURE DETERMINATION

It is crucial to determine which jobs expose an employee to blood and other potentially infectious material, as well as the means by which that exposure might occur. Accordingly, the Solomon Corporation safety committee or management will determine which job classifications can reasonably expect occupational exposure to potentially infectious material. The following will be determined and documented:

- Job classifications in which all employees have occupational exposure
- Job classifications in which some employees have occupational exposure
- Tasks and procedures in which occupational exposure occurs
- Further, input from non-managerial employees exposed to contaminated sharps and infectious material is vital to the success of this exposure control plan, and every employee is encouraged to offer suggestions that will help the effectiveness of the exposure control plan

METHODS OF COMPLIANCE

All body fluids will be treated as infectious and employees will take steps against contact.

ENGINEERING AND WORK PRACTICE CONTROLS

As part of this exposure control plan, Solomon Corporation will seek methods to eliminate occupational exposure to the greatest extent possible. Solomon Corporation will examine regularly, and maintain or replace, engineering controls to ensure their effectiveness.

HANDWASHING

- Solomon Corporation will provide accessible handwashing facilities to every employee. If providing handwashing facilities is not feasible, Solomon Corporation will provide antiseptic towelettes or an appropriate antiseptic hand cleanser in conjunction with clean cloth/paper towels
- For construction projects, employers must: provide onsite general washing facilities (one per 20 employees), keep them in sanitary condition, and provide suitable cleaning agents/towels for the removal of hazardous and other substances
- In addition to basic workplace hygiene requirements, employees will wash their hands as soon as possible after removing gloves or other PPE
- Should an employee's skin or mucous membrane be exposed to potentially infectious materials, the employee will immediately wash their skin with soap and water or flush their mucous membranes with water

SHARPS

- Employees will handle and dispose of contaminated sharps in a way that prevents unnecessary exposure to hazards. Employees will not bend, recap, or remove contaminated sharps unless no alternative is feasible and it can be done using a mechanical device or one-handed technique
- As soon as possible after use, contaminated reusable sharps will be placed in a container that is: puncture resistant, labeled or color-coded appropriately, leak-proof on the sides and bottom, and made so employees can't reach into it

OTHER ENGINEERING AND WORK-PRACTICE CONTROLS

- Don't store food or drink, eat, drink, smoke, apply cosmetics or handle contact lenses near possible exposures
- Employees may not use their mouths to suck up potentially infectious materials
- Containers used to store or transport potentially infectious materials should be closable, prevent leaks, be appropriately labeled or color-coded, and puncture resistant
- Employees will examine any equipment that may be contaminated before servicing or shipping, and will decontaminate it as necessary and feasible. If decontamination is impossible, the employee will attach a label to the equipment, and inform all appropriate personnel of the contamination to ensure they take proper precautions

PERSONAL PROTECTIVE EQUIPMENT (PPE)

- Where the possibility of occupational exposure exists, Solomon Corporation will provide PPE appropriate to the hazards and the work. Appropriate PPE is impermeable to blood or OPIM under normal conditions and durations
- PPE will be provided and maintained free to employees in appropriate sizes, and provisions will be made should an employee be allergic to gloves normally provided
- An employee may decline using appropriate PPE under “rare and extraordinary circumstances” when PPE use might prevent the delivery of health care or public safety services. These exceptions will be investigated and documented to prevent future occurrences
- PPE will be removed as soon as feasible before leaving the general work area. After removal, the employee will place contaminated PPE in an appropriate area or container to be stored, washed, decontaminated, or disposed of

GLOVES

Employees must wear gloves if they anticipate hand contact with OPIM. Do not reuse single-use gloves, and replace as quickly as possible if torn, punctured, or compromised.

MASKS, EYE PROTECTION, AND FACE SHIELDS

Employees will wear masks, together with proper eye-protection devices whenever splashes, spray, spatter, or droplets of blood or other potentially infectious materials may be generated and eye, nose, or mouth contamination can be reasonably anticipated.

GOWNS, APRONS, ETC.

Employees will wear appropriate protective clothing like gowns or clinic jackets when appropriate; the type of protective clothing is determined by the nature of exposure, and will be sufficient to protect against occupational exposure.

HOUSEKEEPING

- Employees will keep the workplace clean and sanitary. Solomon Corporation will implement a written schedule for cleaning and decontamination based on the demands of the site
- Employees will use an appropriate disinfectant to clean and decontaminate contaminated or potentially contaminated work surfaces after any spill of infectious materials, and at the end of the work shift. Solomon Corporation will replace protective surface coverings as soon as possible if they are contaminated. Bins, cans, pails or other receptacles that may become contaminated should be inspected and decontaminated regularly, in addition to being decontaminated as soon as feasible after visible contamination. Employees must not pick up, by hand, any broken glassware that may be contaminated. Use a brush/dustpan or tongs

LAUNDRY

Employees will handle any contaminated laundry as little as possible. They must put such laundry into a color-coded or labeled container at the site where it was used. Wet laundry should be placed into a leak-proof container. Employees handling contaminated laundry must use appropriate PPE. Employees must never take or wear contaminated clothing outside of the work site.

HEPATITIS B VACCINATION

Solomon Corporation will make available the hepatitis B vaccination series at no cost to any Solomon Corporation employee who faces occupational exposure. If not vaccinated, employees will be informed of the opportunity to be vaccinated within 24 hours of an exposure incident.

An employee occupationally exposed to potentially infectious material may decline the hepatitis B vaccine, but must sign a declination statement to be kept on file. Anyone who declines vaccination may request and receive the vaccination later at no cost.

Medical records relating to employees' hepatitis B vaccination status and post-exposure evaluation and follow-up must be kept for 30 years plus the duration of employment.

POST-EXPOSURE EVALUATION AND FOLLOW UP

Should an exposure incident occur, the employee should contact Corporate EH&S Manager Mike Dahl (or designate) immediately.

IN CASE OF EXPOSURE

A licensed health care professional will conduct a confidential medical evaluation and follow-up, and will provide a medical opinion on diagnosis/course of action, as soon as possible following an exposure incident. After administering initial first aid (cleaning the wound, flushing the eyes or other mucous membranes, etc.), follow the procedure below:

1. Document the routes of exposure and how the exposure occurred
2. Identify and document the source individual (unless the employer can establish that identification is infeasible or prohibited by state or local law)
3. Obtain consent and arrange to have the source individual tested as soon as possible to determine human immunodeficiency virus (HIV), hepatitis C virus (HCV), and hepatitis B virus (HBV) infectivity; convey and document conveyance of the source individual's test results to the employee's health care provider. If the source individual is known to be HIV, HCV, and/or HBV positive, new testing is not necessary
4. Provide the exposed employee with the source individual's test results and with information about applicable disclosure laws and regulations concerning the identity and infectious status of the source individual (e.g., laws protecting confidentiality)

5. After obtaining consent, collect the exposed employee's blood as soon as feasible after an exposure incident, and test the blood for HBV and HIV serological status. This will establish a baseline for periodic testing over the next six months. Depending upon the circumstances of the exposure, post-exposure prophylaxis may be recommended to reduce the risk of infection from HIV or HBV
6. If the employee does not give consent for HIV serological testing during collection of blood for baseline testing, preserve the baseline blood sample for at least 90 days; if the exposed employee elects to have the baseline sample tested during this waiting period, perform testing as soon as feasible

ADMINISTRATIVE RESPONSIBILITIES FOLLOWING EXPOSURE

Solomon Corporation will ensure that the health care professional responsible for post-exposure evaluation and follow-up receives the following:

COUNSELING

Solomon Corporation will ensure that post-exposure counseling will be given to employees following an exposure incident. Counseling should include Centers for Disease Control & Prevention (CDC) recommendations for prevention and transmission of bloodborne infections including HIV, HBV, and HCV. Counseling must be made available regardless of the employee's decision to accept serological testing.

Figure 1

RECORDKEEPING

MEDICAL RECORDS

Solomon Corporation will maintain a confidential medical record for every employee with occupational exposure that will include at least the following:

- Name and social security number of the employee
- Copy of the employee's HBV status (with dates of all Hep B vaccinations)
- Copy of all post-exposure documentation and healthcare professional's written opinion
- Copy of the information provided to the healthcare professional
- Do not share or report this record unless the employee provides written consent

SHARPS INJURY/EXPOSURE INCIDENT LOG

A Sharps Injury Log is a record of each exposure incident involving a sharp. The purpose of the Sharps Injury Log is to generate a record of exposure incidents that will include enough information about the cause of the incidents to allow the company to analyze them and take preventive action.

The Sharps Injury Log must include:

- The date and time of the sharps-related exposure incident
- The type and brand of the sharp involved in the incident

- A description of the incident including:
  - The job classification of the exposed employee
  - The department or work area where the incident occurred
  - The procedure being performed
  - How the incident occurred
  - The body part injured
  - For sharps with engineered sharps injury protection (ESIP), if the safety mechanism was activated
  - If the incident occurred before action, during activation or after activation of the mechanism; for sharps without ESIP, the employee's opinion if ESIP could have prevented the injury

Sharps injuries/exposures must be recorded on the log within 14 working days of when the incident was reported to the employer.

The Sharps Injury Log must be maintained for five years from the date of the occurrence of the exposure incident.

HAZARD COMMUNICATION

Label containers of regulated biological waste, any container used to store or transport potentially infectious material, as well as contaminated equipment, to prevent exposure. Labels for such containers will include the legend depicted in Figure 1.

All such labels will be fluorescent orange or orange-red and be attached on, or as close as feasible to, the container.

REVIEW AND UPDATE OF EXPOSURE CONTROL PLAN (ECP)

The Solomon Corporation safety committee will review this ECP and update it at least annually, and whenever necessary, to reflect new or changed tasks and procedures that affect occupational exposure.

Reviews and updates will:

- Reflect changes in technology that eliminate or reduce exposure to bloodborne pathogens
- Document the annual consideration and implementation of effective medical, and commercially available, devices and services designed to eliminate or minimize occupational exposure

Solomon Corporation will seek the input of non-managerial employees to identify, evaluate, and select controls to reduce occupational exposure. This input will be documented as part of this ECP.

ATTACHMENTS

- Exposure Control Plan Documentation
- Declination Statement
- Exposure Incident Report
- Evaluating Physician's Written Opinion
- Sharps Injury Log

These forms may be reproduced for the purposes of implementing and maintaining a safety and health program.

EXPOSURE CONTROL PLAN DOCUMENT FORM

Exposure Determination	
Jobs in which all employees have occupational exposure to potentially infectious materials	Task or procedure where exposure occurs
Jobs in which some employees have occupational exposure to potentially infectious materials	Task or procedure where exposure occurs

Engineering controls and work practice controls:

_____

_____

_____

_____

The following types of PPE are available in the following locations:	
Personal Protective Equipment	Location

HEPATITIS B DECLINATION STATEMENT FORM

DECLINATION STATEMENT

I understand that due to my occupational exposure to blood or other potentially infectious materials I may be at risk of acquiring Hepatitis B virus (HBV) infection. I have been given the opportunity to be vaccinated with Hepatitis B vaccine, at no charge to myself. However, I decline Hepatitis vaccination at this time. I understand that by declining this vaccine, I continue to be at risk of acquiring Hepatitis B, a serious disease. If in the future, I continue to have occupational exposure to blood or other potentially infectious materials and I want to be vaccinated with Hepatitis B vaccine, I can receive the vaccination series at no charge to me.

Employee Signature: _____ Date: _____

DECLINATION STATEMENT

I understand that due to my occupational exposure to blood or other potentially infectious materials I may be at risk of acquiring Hepatitis B virus (HBV) infection. I have been given the opportunity to be vaccinated with Hepatitis B vaccine, at no charge to myself. However, I decline Hepatitis vaccination at this time. I understand that by declining this vaccine, I continue to be at risk of acquiring Hepatitis B, a serious disease. If in the future, I continue to have occupational exposure to blood or other potentially infectious materials and I want to be vaccinated with Hepatitis B vaccine, I can receive the vaccination series at no charge to me.

Employee Signature: _____ Date: _____

DECLINATION STATEMENT

I understand that due to my occupational exposure to blood or other potentially infectious materials I may be at risk of acquiring Hepatitis B virus (HBV) infection. I have been given the opportunity to be vaccinated with Hepatitis B vaccine, at no charge to myself. However, I decline Hepatitis vaccination at this time. I understand that by declining this vaccine, I continue to be at risk of acquiring Hepatitis B, a serious disease. If in the future, I continue to have occupational exposure to blood or other potentially infectious materials and I want to be vaccinated with Hepatitis B vaccine, I can receive the vaccination series at no charge to me.

Employee Signature: _____ Date: _____

EXPOSURE INCIDENT REPORT FORM

(Routes and Circumstances of Exposure Incident) – Please Print

Employee's Name _____Date_____

Date of Birth _____SS#_____

Telephone (Business) _____ (Home) _____

Job Title _____

Date of Exposure_____ Time of Exposure _____ AM _____ PM _____

Hepatitis B Vaccination Status: _____

Location of Incident: _____

Describe job duties you were performing when the exposure incident occurred:

_____

_____

Describe the circumstances under which the exposure incident occurred:
(What happened that resulted in the incident?)

_____

_____

What body fluid(s) were you exposed to? _____

_____

What was the route of exposure? *(e.g., mucosal contact, contact with non-intact skin, percutaneous)*

_____

_____

Describe any personal protective equipment in use at time of exposure incident:

_____

_____

Did PPE fail? _____ If yes, how? _____

_____

Identification of source individual(s) (names): _____

_____

Other pertinent information: _____

_____

_____

EVALUATING PHYSICIAN'S WRITTEN OPINION FORM

To the Evaluating Physician:

This employee may have suffered an exposure incident to a Bloodborne Pathogen. In accordance with OSHA standards covering post-exposure evaluation and follow up, the following documents are provided for you:

- A copy of OSHA regulations covering Occupational Exposure to Bloodborne Pathogens
- A description of the exposed employee's duties as they relate to the exposure incident
- Documentation of the routes of exposure and circumstances under which exposure occurred
- Results of the source individual's blood testing, if available
- All medical records relevant to this employee's appropriate treatment, including vaccination status

---

After you have determined whether there are contra-indications to vaccination of this employee with Hepatitis B vaccine, please state in the space below if:

Vaccine was indicated Vaccine was received

(All other findings are to remain confidential and are not to be included on this page)

_____

Please return this sheet to this employee:

Thank you for your evaluation of this employee.

_____ _____

Physician's name (printed) Date

Physician's signature_____

SHARPS INJURY LOG

Facility/Location: _____ Year: _____

Address: _____

City: _____ State: _____ ZIP: _____

Date	Time	Type, Brand, Model of Sharp Device	Department / Work Area	Description of How Incident Occurred

(Retain at least 5 years)

POLICY

Solomon Corporation has adopted this policy for the prevention of employee exposure to electrical hazards.

REFERENCES

- §2320 – Electrical Low Voltage
- §2940 – Electrical High Voltage
- §2946 – Provisions for Preventing Accidents Due to Proximity to Overhead Lines
- §2947 – Warning Signs Required
- §3203 – Injury and Illness Prevention Program
- National Fire Protection Association (NFPA) 70E – Considered a best practice by CAL/OSHA

RESPONSIBILITIES

EMPLOYER RESPONSIBILITIES

- Identifying employees who are qualified welders
- Ensuring that safety inspections of the facility occur on regular basis
- Training personnel in how to perform a job hazard analysis
- Responding quickly to eliminate workplace hazards
- Ensuring all equipment is kept in good repair
- Ensuring employees follow safe job procedures
- Reviewing job hazard analysis whenever there is a significant change to any element of the job or there has been an injury or illness

SUPERVISOR RESPONSIBILITIES

- Establishing and maintaining safe and healthful working conditions
- Familiar with electric safety and health hazards to which their employees are exposed, how to recognize them, the potential effects these hazards have on the employees, and rules, procedures and work practices for controlling exposure to those hazards
- Setting good examples, instructing their employees, making sure they fully understand and follow safe procedures

EMPLOYEE RESPONSIBILITIES

- No employee is expected to undertake a job until he/she has received instructions on how to do it properly and safely, and is authorized to perform the job
- No employees should undertake a job that appears to be unsafe
- Mechanical safeguards must always be in place and kept in place
- Employees are to report to a superior or designated individual all unsafe conditions encountered during work
- PPE must be used when and where required, and properly maintained

TRAINING

Electrical work will be performed only by qualified individuals. Training and documentation is required for qualified individuals. A qualified person will be trained and knowledgeable in the construction and operation of equipment or a specific work method and be trained to identify and avoid the electrical hazards that might be present with respect to that equipment or work method.

Qualified persons (those permitted to work on or near exposed energized parts) will, at minimum, be trained in and familiar with the following:

- The skills and techniques necessary to distinguish exposed live parts from other parts of electric equipment
- The specific task they are going to perform
- The skills necessary to determine the nominal voltage of exposed live parts
- The clearance distances required
- The proper use of special precautionary techniques, personal protective equipment, insulating and shielding materials, and insulated tools for working on or near exposed energized parts of electric equipment (e.g., panels or equipment supplied from more than one source)

A person must have this training to be considered qualified.

- Prior to performing electrical work, personnel must be qualified to perform job-related electrical tasks as required by NFPA 70E 110.2(D) . Electrical safety awareness training for qualified personnel does not in itself qualify personnel for job-related electrical tasks. A government electrician's license may be acceptable as documented proof of qualification
- Personnel exposed to the presence of 50 volts or more will have formal documented electrical training in both the job-related electrical tasks and electrical safety awareness
- Tasks that are performed less often than once per year will require retraining before the performance of the work practices involved
- An employee who is undergoing on-the-job training for the purpose of obtaining the skills and knowledge necessary to be considered a qualified person, and who in the course of such training demonstrates an ability to perform specific duties safely at his or her level of training and who is under the direct supervision of a qualified person will be considered to be a qualified person for the performance of those specific tasks

Documentation of qualifications will be maintained in departmental personnel files. Documentation will include records of academic courses, experience, on-the-job training, safety courses, and task-related certification. The employer will document that each employee has received the training required by 110.2(D). This documentation will be made when the employee demonstrates proficiency in the work practices involved and will be maintained for the duration of the employee's employment. The documentation will contain the content of the training, each employee's name, and dates of training.

Solomon Corporation requires retraining when workplace changes necessitate safety-related work practices that are different from what the employee normally uses. Different work practices may be new technology, types of equipment or changes in procedures. Retraining will be performed at least every three years.

SAFE PRACTICES

ENERGIZED WORK

The decision to work “hot” (energized) should only be made after careful analysis of the determination of what constitutes “infeasibility”. NFPA 70E and CAL/OSHA require employers to prove that working in a de-energized state creates more or worse hazards, or is not practical because of equipment design or operational limitations. Examples include:

- Working on life-support systems
- Emergency alarm systems
- Ventilation equipment for hazardous locations,
- Work on circuits that are part of a continuous process that cannot be completely shut down

In addition, some maintenance and testing operations can only be done on live electric circuits or equipment. Many of the electrical occupational fatalities were the result of poor decisions to work hot without conducting an appropriate feasibility study to determine if de-energizing was even an option. Quick decisions that conclude “the electrical service can’t be interrupted” are often made for monetary reasons by personnel unfamiliar with the electrical circuit or equipment and/or lack the knowledge of safe electrical work practices.

The philosophy to work energized to avoid additional cost or time will invariably result in a severe electrical incident which will cause major shut downs, outages, and equipment replacement. Thus, what would not be shut down on a temporary basis will be shut down for an extended time following an arc flash or electrocution. The time and cost of an accident will always far exceed the time and cost of a properly planned outage.

The decision-making process which leads to energized work should only be made by personnel experienced in safe electrical work practices and should be documented in writing, such as included in an *Energized Electrical Work Permit (EEWP)*. The EEWP should also identify the expected nominal voltage, appropriate protection boundaries to be followed, safe work practices and procedures, as well as the personal protective equipment (PPE) which should be worn. Justification requests should include a sign-off provision before any energized work is authorized. The process of de-energizing an electrical circuit can also result in an arc flash due to equipment failure. Therefore, de-energizing electrical circuits must follow appropriate lockout/tagout procedures.

ELECTRICAL LOW VOLTAGE

Low-Voltage Electrical Safety applies to all electrical installations and electrical equipment operating or intended to operate on systems of 600 volts, nominal, or less and to all work performed directly on or in proximity to such electrical installations, equipment or systems in all places of employment. Only qualified personnel are authorized to perform work, service, or maintenance on electrical parts or systems at Solomon Corporation.

All employees will treat the electrical equipment as energized until tested as required by Cal/OSHA 2320.2 until tested or otherwise proven to be de-energized. This will be done to ensure the safety of the personnel working on or around the electrical equipment.

LOCKOUT/TAGOUT PROCEDURES:

Corporate EH&S Manager Mike Dahl will be responsible for following Solomon Corporation's Lockout Tagout (LOTO) procedures, maintaining a written copy, and will make them available for inspection by employees and Cal/OSHA. While any employee is exposed to contact with parts of fixed electric equipment or circuits which have been de-energized, the circuits energizing the parts will be locked out and/or tagged.

Corporate EH&S Manager Mike Dahl will be responsible for the following before working on de-energized electrical equipment or systems unless the equipment is physically removed from the wiring system:

- Notifying all involved personnel
- Locking the disconnecting means in the “open” position with the use of lockable devices, such as padlocks, combination locks or disconnecting of the conductor(s) or other positive methods or procedures which will effectively prevent unexpected or inadvertent energizing of a designated circuit, equipment or appliance

ENERGIZING (OR RE-ENERGIZING) EQUIPMENT OR SYSTEMS:

Corporate EH&S Manager Mike Dahl will be responsible for the following before energizing equipment or systems which have been de-energized:

- Determining that all persons are clear from hazards which might result from the equipment or systems being energized
- Removing locking devices and tags

Locking devices and tags may be removed only by the employee who placed them. Locking devices and tags will be removed upon completion of the work and after the installation of the protective guards and/or safety interlock systems. When the employee has left the work site or is otherwise unavailable, another employee may be authorized by the employer to remove the locking devices and tags in compliance with the employer’s procedures.

Accident Prevention Tags:

Suitable accident prevention tags will be used to control a specific hazard. These tags will provide at least the following information:

- Reason for placing tag
- Name of person placing the tag and how that person may be contacted
- Date tag was placed

SAFETY PRECAUTIONS:

Whenever there is access to opened enclosures containing exposed energized equipment that is not under the control of an authorized or certified person, suitable temporary barriers, or barricades, will be installed. These can be any one of the following:

- Barricades may be of a single placard, vertical type, a double placard, horizontal type
- A solid orange, plastic cone designed to be moved or rearranged quickly
- Barricades may be equipped with flashers for use at night and are often used with temporary signs which give specific directions to be followed
- Caution, Warning, or Danger Barricade Tape

CONDUCTIVE EQUIPMENT:

When working on or near exposed energized conductors or parts of equipment conductive measuring tapes, ropes or similar measuring devices will not be used. Conductive fish tapes will not be used in raceways entering enclosures containing exposed energized parts unless such parts are isolated by suitable barriers.

ELECTRICAL HIGH VOLTAGE

HIGH VOLTAGE RESPONSIBILITIES:

All work locations will be safely accessible whenever work is to be performed.

Solomon Corporation will furnish such safety devices and safeguards as will be necessary to make the employment or place of employment as free from danger for the safety and health of its employees as the nature of the employment reasonably permits. Corporate EH&S Manager Mike Dahl will examine or test each safety device at such intervals as may be reasonably necessary to ensure that it is in good condition and adequate to perform the function for which it is intended. All devices furnished by Solomon Corporation found to be unsafe will be repaired or replaced.

All employees will be instructed to inspect each safety device, tool or piece of equipment, each time that it is used, and to use only those items that are found to be in good condition. Solomon Corporation will require the use of all safety devices and safeguards where applicable.

Only qualified employees will work on energized conductors or equipment connected to energized high-voltage systems. Except for the following:

- Replacing fuses
- Operating switches
- Operations that do not require the employee to contact energized high-voltage conductors or energized parts of equipment
- Clearing “trouble” or in emergencies involving hazard to life or property

Note: No such employee will be assigned to work alone in these situations.

Employees in training, who are qualified by experience and training, will be permitted to work on energized conductors or equipment connected to high-voltage systems while under the supervision or instruction of a qualified electrical worker.

During the time work is being done on any exposed conductors or exposed parts of equipment connected to high-voltage systems, a qualified electrical worker, or an employee in training, will be in close proximity at each work location to:

- Act primarily as an observer for the purpose of preventing an accident
- Render immediate assistance in the event of an accident

The observer will not be required in connection with work on overhead trolley distribution circuits not exceeding 1,500 volts D.C. where there is no conductor of opposite polarity less than four feet (4ft) there from, or where such work is performed from suitable tower platforms or other similar structures.

Employees will not be permitted to approach or take any conductive object without an approved insulating handle closer to energized parts. To provide clearance distances as specified in Cal/OSHA table 2940.2-1: *NOTE:* These distances are the air, bare-hand, and live-line tool distances.

ILLUMINATION:

Illumination will be provided as needed to perform the work safely. This can be done by using any one of the following: drop lights, flood lights, flash lights, etc.

PROTECTIVE EQUIPMENT:

Insulating equipment will be provided by Solomon Corporation and designed for the voltage levels to be encountered. Solomon Corporation will ensure that the equipment is used by its employees as required by this section. This equipment will meet the electrical and physical requirements contained in the standards shown in Appendix C. (see page 13)

Solomon Corporation will be responsible for the periodic visual and electrical re-testing of all insulating gloves, sleeves, and blankets. The following maximum re-testing intervals in accordance with the listed American Society for Testing and Materials (ASTM) standards, which are hereby incorporated by reference, will apply:

- In–Service Care of Insulating Gloves and Sleeves ASTM F 496-97: six (6) Months
- In–Service Care of Insulating Blankets ASTM F 479-95: twelve (12) Months
- In–Service Care of Line Hose and Covers ASTM F 478-92: When to be found damaged or defective

All gloves, sleeves, and blankets will be marked to indicate compliance with the re-test schedule and will be marked with either the date tested, or the date of the next scheduled test.

All insulating equipment found to be defective or damaged will be immediately removed from service.

Portable conductive ladders will not be used near energized conductors or exposed energized parts of equipment except as may be necessary in specialized work, such as in high voltage substations where non-conductive ladders might present a greater hazard than conductive ladders.

- Portable conductive ladders will be legibly marked with signs reading “Caution – Do Not Use Near Energized Equipment” or equivalent wording

OVERHEAD POWER LINES:

When working on or near overhead power lines Solomon Corporation has adopted the following safeguards to ensure the safety of their employees:

- They will not require or permit any employee to perform any function in proximity to energized high-voltage lines
- To enter upon any land, building, or other premises and there engage in any excavation, demolition, construction repair, or other operation
- To erect, install, operate, or store in or upon such premises any tools, machinery, equipment, materials, or structures (including scaffolding, house moving, well drilling, pile driving, or hoisting equipment) unless and until danger from accidental contact with said high-voltage lines has been effectively guarded against

BOOM OPERATIONS:

A clearance safe clearance distance during operations of Boom-type lifting or hoisting equipment in/and around overhead power lines will be done when doing the following:

- The erection, operation, or dismantling of any boom-type lifting or hoisting equipment, or any part thereof, closer than the minimum clearances from energized overhead high-voltage lines set forth in Table 2 will be prohibited.

Table 2 - Boom-Type Lifting or Hoisting Equipment Clearances Required from Energized Overhead High-Voltage Lines	
Nominal Voltage (Phase to Phase)	Minimum Required Clearance (Feet)
600 to 50,000	10
over 50,000 to 75,000	11
over 75,000 to 125,000	13
over 125,000 to 175,000	15
over 175,000 to 250,000	17
over 250,000 to 370,000	21
over 370,000 to 550,000	27
over 550,000 to 1,000,000	

WARNING SIGNS:

Solomon Corporation will place warning signs when equipment is working around or near overhead power lines. The warning signs will be posted and maintained in plain view of the operator and driver on each of the following that may be in use: crane, derrick, power shovel, drilling rig, hay loader, hay stacker, pile driver or similar apparatus.

A durable warning sign legible at twelve feet (12ft) reading “Unlawful To Operate This Equipment Within Ten Feet (10ft) Of High-Voltage Lines of 50,000 Volts Or Less.”

ENERGIZED ELECTRICAL WORK PERMIT

Part I: TO BE COMPLETED BY THE REQUESTER:

Job/Work Order Number_____

(1) Description of circuit/equipment/job location:

_____

(2) Description of work to be done:

_____

(3) Justification of why the circuit/equipment cannot be de-energized or the work deferred until the next scheduled outage:_____

_____

_____ _____

Requester/Title Date

Part II: TO BE COMPLETED BY THE ELECTRICALLY QUALIFIED PERSONS *DOING* THE WORK:

(1) Description of the Safe Work Practices to be employed:

_____

(2) Shock Hazard Analysis: Voltage Level Phase to Phase _____

Approach Boundaries: Limited _____ Restricted _____

(3) Results of Flash Hazard Analysis:

Flash Protection Boundary: _____ (Assumed or Calculated) _____

Hazard/Risk Category _____ OR Calculated Flash Hazard at 18" _____

(4) Necessary personal protective equipment to safely perform the assigned task:

_____

(5) Means employed to restrict the access of unqualified persons from the work area:

_____

(6) Evidence of completion of a Job Briefing including discussion of any job-related hazards:

_____

_____

(7) Do you agree the above described work can be done safely? YES / NO (circle: If *no* return to requester)

_____ _____ _____ _____

Electrically Qualified Person(s) Date Electrically Qualified Person(s) Date

Part III: APPROVAL(S) TO PERFORM THE WORK WHILE ELECTRICALLY ENERGIZED:

_____ _____

Approving Supervisor Date

Part IV: DOCUMENTATION OF ELECTRICALLY ENERGIZED WORK:

I understand that the above Energized Work was completed on _____

Date

_____

Administrative Supervisor

POLICY

Solomon Corporation has developed this policy to ensure proper safe work practices and procedures are followed to protect employees from the fall hazards. This policy applies to all employees, jobsites, and all personnel working on property owned by Solomon Corporation, including subcontractors who provide services to Solomon Corporation.

REFERENCES

- §1510 – Code of Safe Practices
- §1511 – General Safety Precautions
- §1513 – Housekeeping
- California Code of Regulations Article 24 – Fall Protection
- §3203 – Injury and Illness Prevention Program
- §3209 – Standard Guardrails

RESPONSIBILITIES

Solomon Corporation has developed this policy to ensure proper safe work practices and procedures are followed to protect employees from the fall hazards. *Corporate EH&S Manager Mike Dahl* is the Program Administrator responsible for managing and supervising the fall protection program.

SUPERVISORS

- Establishing and maintaining safe and healthful working conditions
- Being familiar with electrical safety and health hazards to which their employees are exposed, how to recognize them, the potential effects these hazards have on the employees, and rules, procedures and practices for controlling exposure to hazards
- Setting good examples, instructing their employees, making sure they fully understand and follow safe procedures

EMPLOYEES:

Employees will wear approved personal fall arrest, personal fall restraint, or positioning systems when work exposes them to falling more than 7.5 feet from any of the following: the perimeter of a structure; unprotected sides and edges; leading edges; shaftways and openings; sloped roof surfaces steeper than 7:12; or any other sloped surface steeper than 40 degrees not otherwise protected.

- No employee is expected to undertake a job until he/she has received instructions on how to do it properly and safely, and is authorized to perform the job
- No employees should undertake a job that appears to be unsafe
- Mechanical safeguards must always be in place and kept in place
- Report to a designated supervisor unsafe conditions

TRAINING

Solomon Corporation will ensure all employees are trained and aware of all present jobsite hazards, including fall hazards, hazard recognition, the procedures to follow in order to protect themselves from the injury, basic emergency first aid procedures in the event of an injury, and the applicable personal protective equipment.

Documentation of qualifications will be maintained in departmental personnel files. Documentation will include records of academic courses, experience, on-the-job training, safety courses, and task-related certification. The employer will document that each employee has received the training. This documentation will be made when the employee demonstrates proficiency in the work practices involved and will be maintained for the duration of the employee's employment. The documentation will contain the content of the training, each employee's name, and dates of training.

Solomon Corporation requires retraining when workplace changes require new safe work practices. Retraining will be performed at least every three years.

PROCEDURES

PERSONAL FALL ARREST SYSTEM RULES

When Solomon Corporation employees use PFAS, Corporate EH&S Manager Mike Dahl will inspect the fall arrest systems implemented and ensure:

- When stopping a fall, the impact force to the body is no greater than 1,800 lbs, when using shock absorbing lanyards and a body harness
- Employees rig the fall arrest system to minimize free fall distance by no more than 6 feet nor contact any lower level, and, where practicable, secure the anchor end of the lanyard at waist level to the employee
- The fall arrest system, when stopping a fall, brings the employee to a complete stop and maximum deceleration distance an employee travels to 3.5 feet
- The fall arrest system(s) are strong enough to withstand twice the potential impact energy of an employee free falling from a distance of 6 feet, or the fall distance permitted by the system, whichever is less

FALL PROTECTION ANCHOR POINTS

PFAS anchors need to be separate from platforms and capable of supporting at least 5,000 pounds for each employee attached. Otherwise, the anchorages must be designed, installed, and used as part of a complete fall arrest system that maintains a safety factor of no less than two, and underneath the supervision of a competent, qualified person.

POSITIONING DEVICE SYSTEMS

For any positioning device systems being used by Solomon Corporation employees, Corporate EH&S Manager Mike Dahl will ensure the systems are rigged so that the employee cannot free fall a distance greater than two (2) feet. Corporate EH&S Manager Mike Dahl, or a designated competent person, will inspect the positioning device system prior to use for wear, damage, and other deterioration. Defective parts will be immediately removed from service.

Corporate EH&S Manager Mike Dahl will ensure any snaphooks used can be locked and fastened securely. Non-locking snaphooks are prohibited from use. If a snaphook is unable to lock completely, it will be removed from service immediately and replaced.

Corporate EH&S Manager Mike Dahl will inspect the anchorage points for the positioning device and ensure the anchorage points are capable of supporting at least two times the intended load or 3,000 pounds, whichever is greater.

EMERGENCY PLANNING

If a hazard cannot be eliminated, workers will be protected with an appropriate fall-protection system or method. Solomon Corporation will provide for the prompt rescue of any worker suspended in a personal fall-arrest system.

Solomon Corporation will prepare, update, and approve written rescue and evacuation procedures that include anchorage locations, connecting means, body supports, and other required fall protection equipment. Solomon Corporation will provide and ensure a prompt rescue can be accomplished in the event of a fall with the rescue and evacuation procedures.

All fall arresting, descent control, and rescue equipment must be approved, used according to manufacturer’s recommendations, and kept in good repair. Safety belts, harnesses, and lanyards will meet American National Standards Institute (ANSI) A10.14-1975 and labeled accordingly.

Solomon Corporation will ensure all lifelines and anchorages utilized are capable of supporting, at a minimum, a dead weight of 5,000 pounds.

THE FALL PROTECTION PLAN

Employees doing leading edge work, precast concrete work, or residential construction work for whom conventional fall protection equipment is not feasible or creates a greater hazard may be protection by a fall protection plan instead. Fall protection plans used by Solomon Corporation will conform to the following standards, and will be approved by Corporate EH&S Manager Mike Dahl or other qualified person who must be named on the plan.

Fall Protection Plan Rules

- The fall protection plan will be prepared and kept up to date by Corporate EH&S Manager Mike Dahl or a designated qualified person specifically for the site where the leading edge, concrete, or residential construction work is performed
- A qualified person must approve any changes to the fall protection plan
- A copy of the fall protection plan and changes must be maintained at the jobsite
- A competent person – named in the fall protection plan - will implement the plan
- protection systems (such as guardrail systems, personal fall arrest systems, or safety nets systems) is infeasible or why their use would create a greater hazard
- The fall protection plan will include a written discussion of other measures that will be taken to reduce or eliminate the fall hazard for workers who cannot be provided with protection from the conventional fall protection systems. For example, Solomon Corporation will discuss the extent to which scaffolds, ladders, or vehicle mounted work platforms can be used to provide a safer working surface and thereby reduce the hazard of falling
- The fall protection plan will identify each location where conventional fall protection methods cannot be used. These locations will then be classified as “controlled access zones” and adhere to all appropriate policies and regulations
- Where no other alternative measure has been implemented, Solomon Corporation will implement a safety monitoring system
- The fall protection plan must include a statement which provides the name or other method of identification for each employee who is designated to work in controlled access zones. No other employees may enter controlled access zones
- In the event that an employee falls, or some other related serious incident occurs, Solomon Corporation will investigate the circumstances of the fall or other incident to determine if the fall protection plan needs to be changed (e.g. new practices, procedures, or training) and will implement those changes to prevent similar types of falls or incidents

SAFETY NETS

Safety net systems consist of mesh nets and connecting components. They must be used where working surfaces are 25 feet or more above the ground, water surface, or continuous floor level below.

When the use of more conventional types of protection (such as personal fall arrest systems, personal fall restraint systems, positioning device systems, etc.) are clearly impractical, the interior and/or exterior perimeter of the structure must be provided with an approved safety net reaching no less than 8 feet horizontally from the perimeter and positioned at a distance no more than 10 feet vertically below the hazards, or equivalent protection provided safety nets will extend outward from the outermost projection of the surface as illustrated in the following table:

Minimum horizontal distance from the edge of working surface to the net's outer edge

Net distance below working surface	Minimum horizontal distance
Up to 5 feet	8 feet
5 feet to 10 feet	10 feet
10 feet to 30 feet	13 feet

- Safety net openings can't be more than six inches on a side, center to center
- Safety nets must not be installed more than 10 feet below where the fall hazards exist
- An installed net must be able to withstand a drop test consisting of a 400 pound sandbag, 30 inches in diameter, dropped from the working surface and provide adequate clearance to the surface or structures below
- Safety nets will be regularly inspected and any debris will be removed no later than the start of the next work shift

CONTROLLED ACCESS ZONES

Whenever the Fall Protection Plan identifies a Controlled Access Zone (e.g. an area where leading edge and other operations are taking place), the controlled access zone will be marked by a control line or other equivalent means that restricts access to the zone. Solomon Corporation will post signs in easily visible areas to warn unauthorized employees to stay out of the controlled access zone. Corporate EH&S Manager Mike Dahl will designate a competent person to monitor the control zone and ensure the safety of other (unauthorized) employees.

PROTECTING WORKERS FROM FALLING OBJECTS

Any Solomon Corporation employee working on an elevated surface must be familiar with the systems and methods that control their exposure to fall hazards; they must also ensure their tools and equipment don't endanger workers below them.

Waste, materials, and tools must not be thrown from any building or structure to an area where employees may be located, unless the area where the material is dropped is guarded by fences, barricades, or other means to prevent employees from entering the area and being struck by a falling object. Signs must be posted to warn employees of any falling object hazards.

Solomon Corporation will implement methods for protecting workers from falling objects such as the following: canopies suspended above the work area; barricades and fences to keep people from unsafe area; screens, guardrail systems, and toe boards to prevent materials from falling to lower levels.

Employees will follow the following guidelines to keep tools and equipment where they belong:

- If utilized, toeboards must be strong enough to withstand a force of at least 50lbs applied in any downward or outward direction and be at least 3 ½ inches high
- If material must be piled higher than the top edge of a toeboard, panels or screens must be installed to keep the material from dropping over the edge
- If canopies are used as falling object protection, ensure they will not collapse or tear from an object's impact
- Guardrails with toeboards may be used as falling object protection if the guardrails openings are small enough to keep the objects from falling through

GUARDRAIL SYSTEMS

Solomon Corporation will ensure that any guardrail systems utilized consist of a top rail, midrail or other equivalent protection, and posts, and have a vertical height between 42 to 45 inches from the upper surface of the top rail to the floor, platform, runway or ramp level.

Guardrail systems can also be combined with toeboards that prevent materials from rolling off the walking/working surface.

Guardrail systems must be free of anything that might cut a worker or snag a worker's clothing. Top rails and midrails must be at least 1/4th of an inch thick to reduce the risk of hand lacerations. Steel and plastic banding cannot be used for top rails or midrails.

- Wire rope used for a top rail must be marked at least every six feet with high-visibility material
- The top rail of a guardrail must be 42 inches above the walking/working surface. The top-edge height can exceed 45 inches if the system meets all other performance criteria
- Midrails must be installed midway between the top rail and the walking/working surface unless there is an existing wall or parapet at least 21 inches high
- Screens and mesh are required when material could fall between the top rail and midrail or between the midrail and the walking/working surface
- Intermediate vertical members, when used instead of midrails between posts, must be no more than 19 inches apart
- A guardrail system must be capable of withstanding a 200-pound force applied within two inches of its top edge in any outward or downward direction
- Midrails, screens, and intermediate structural members must withstand at least 150 pounds of force applied in any downward or outward direction

Fall Hazard Assessment		
Job Name:	Location:	
Date Assessed:	Related Operating Procedures Reviewed: ☐ YES ☐ NO	Location Marked and Entry Controlled: ☐ YES ☐ NO

FALL HAZARD ASSESSMENT CHECKLIST		
1. Can an employee enter the area without restriction and perform work?	☐ YES	☐ NO
2. Are fall prevention systems such as cages, guardrails, toeboards, and manlifts in place?	☐ YES	☐ NO
3. Have slipping and tripping hazards been removed or controlled?	☐ YES	☐ NO
4. Have visual warnings of fall hazards been installed?	☐ YES	☐ NO
5. Can the distance a worker could fall be reduced by installing platforms, nets etc.?	☐ YES	☐ NO
6. Are any permanently installed floor coverings, gratings, hatches, or doors missing?	☐ YES	☐ NO
7. Does the location contain any other recognized safety and or health hazards?	☐ YES	☐ NO
8. Is the space designated as a Permit Required Confined Space?	☐ YES	☐ NO
9. Have anchor points been designated and load tested?	☐ YES	☐ NO

ASSESSMENT INFORMATION		
Initials	Hazard	Remarks/Recommendations
	Total potential fall distance:	
	Number of workers involved:	
	Frequency of task:	
	Obtainable anchor point strength:	
	Required anchor point strength: (not less than 5000 lbs)	

ADDITIONAL REQUIREMENTS		
Potential environmental conditions that could impact safety:		
Initials	Condition	Remarks/Recommendations
Possible required structural alterations:		
Initials	Alteration	Remarks/Recommendations
Possible task modification that may be required:		
Initials	Task	Remarks/Recommendations
Training requirements:		
Initials	Requirement	Remarks/Recommendations
Personal protective equipment required:		
Initials	Requirement	Remarks/Recommendations
Comments:		
☐ *Approved* *AUTHORIZATION* I certify that I have conducted a Fall Hazard Assessment of the above designated location and have detailed the findings of the assessment on this form. * Further detailed on attachment: ☐ YES ☐ NO		

Title:	Date:	Time:
Name:	Signature:	

Employee Training For Fall Protection

Solomon Corporation certifies that the following employee has been trained in the understanding, knowledge, and skills necessary for the safe performance of duties assigned in areas of fall protection hazards.

_____ has demonstrated proficiency in the following areas of fall protection:

- ☐ The nature of fall hazards in the work area
- ☐ The correct procedures for erecting, maintaining, disassembling, and inspecting the fall protection systems to be used
- ☐ The use and operation of guardrail systems, personal fall arrest systems, safety net systems, warning line systems, safety monitoring systems, personal fall restraint systems, slide guard systems, positioning devices, and other protection to be used
- ☐ The role of each employee in the safety monitoring system when this system is used
- ☐ The limitations on the use of mechanical equipment during the performance of roofing work
- ☐ The correct procedures for the handling and storage of equipment and materials and the erection of overhead protection
- ☐ The role of employees in the fall protection work plan

_____ _____

Employee Trained By Date of Training

_____ _____

Signature of Trainer Date

_____ _____

Employee Signature Date

cc: Employee Personnel File

POLICY

Solomon Corporation is committed to the safety and health of its employees. To identify and control the risks of using hazardous chemicals in the workplace, Solomon Corporation will develop, implement, and have in place a written hazard communication program at each workplace that describes how labels and other forms of warning, current Safety Data Sheets (SDS), and employee information will be accomplished. The written hazard communication program will be made available when requested.

REFERENCES

- §3203 – Injury and Illness Prevention Program
- §5194 – Hazard Communication
- §5203 – Carcinogen Report of Use Requirements.

RESPONSIBILITIES

EMPLOYER RESPONSIBILITIES

Solomon Corporation is responsible for:

- Identifying hazardous materials used by employees
- Gathering identification of hazardous materials by contractors
- Ensuring that hazardous material container inspections of the facility occur on regular basis
- Training personnel in hazard communication
- Responding quickly to eliminate workplace hazards
- Ensuring all equipment is kept in good repair
- Ensuring employees follow safe job procedures
- Reviewing job hazard analysis whenever there is a significant change to any element of the job or there has been an injury or illness

Corporate EH&S Manager Mike Dahl is designated as the administrator responsible for ensuring the policies and procedures in the written hazard communication program are communicated to all employees and maintained according to all applicable regulations, standards, and industry best practices.

SUPERVISOR RESPONSIBILITIES

- Establishing and maintaining safe and healthful working conditions
- Being familiar with chemical safety and health hazards to which their employees are exposed, how to recognize them, the potential effects these hazards have on the employees, and rules, procedures and work practices for controlling exposure to those hazards
- Setting good examples, instructing their employees, making sure they fully understand and follow safe procedures

TRAINING

Solomon Corporation will provide employees and new hires at their initial assignment effective training that will include:

- Requirements of this program
- Any operations in their work area where hazardous chemicals are present
- Location of written hazard communication, listing of hazardous chemicals present & SDS
- How to detect the presence/release of hazardous chemicals by use of monitoring devices, visual appearance, or odor
- The physical & health hazards of chemicals in the work area
- Protection measures to be utilized to prevent exposure, appropriate work practices, emergency procedures, and proper PPE to be used
- Details of the hazard communication program, explanation of the labeling system and the SDS and how employees can obtain and use the appropriate hazard information.

Changes of job assignments, materials, or any non-routine tasks involving hazardous substances or conditions will require notification and/or retraining of effected employees of any new or additional hazards, hazard abatement or elimination methods, PPE, or engineering controls. Notifications and retraining will be documented with the employee name, date, description of action taken, and verification by Corporate EH&S Manager Mike Dahl.

SAFE PRACTICES

CHEMICAL INVENTORY

A list of all known chemicals used at the workplace by will be available for review at the jobsite and in the office. Current SDS for all chemicals used in the workplace by are available to employees at the worksite from the job foreman or in the office. Corporate EH&S Manager Mike Dahl Will periodically review SDS to ensure they are current and any received SDS and replace all SDS with the most current updated version.

Solomon Corporation will maintain a current chemical inventory list of all hazardous substances known to be on the jobsite, which will be kept on each individual jobsite and at the main company office.

LABELS

Corporate EH&S Manager Mike Dahl will ensure each container of hazardous chemicals in the workplace is labeled, tagged, or marked with the following information: identity of the hazardous chemicals, pictograms, signal word, hazard and precautionary statements, product identifier, and supplier identification.

Corporate EH&S Manager Mike Dahl will ensure labels or other forms of warning in English are legible and prominently displayed on the container, or readily available in the work area throughout each work shift. Hazardous product containers will be periodically checked to ensure they have an accurate and legible label

When Solomon Corporation has employees who do not speak English, information will be presented in a language they understand.

All containers used on the job will be labeled for content and precautions if substance contained is hazardous. Materials will be left in their manufacturer's container, returned to the container immediately after use, or any unused portion disposed of properly. If labels become illegible for any reason, a new label will be affixed containing all required precautionary information, or the material disposed of properly.

SOLOMON CORPORATION HAZARD COMMUNICATION PROGRAM

A copy of the company's Hazard Communication Program is available to all employees, and will be kept at each jobsite by the foreman in charge, or in the office. Translations of the hazard communication program are available to non-English speaking employees upon request from Corporate EH&S Manager Mike Dahl.

General Policy Statement

The management of Solomon Corporation is committed to preventing accidents and ensuring the safety and health of our employees. We will comply with all applicable federal and state health and safety rules and provide a safe, healthful environment for all our employees. This written hazard-communication plan is available at the following location for review by all employees:

Solomon Corporation Location: _____

Address: _____

_____

CONTAINER LABELING

- All hazardous chemical containers used at this workplace will clearly identify the chemical on the label, and include an appropriate hazard warning and the manufacturer's name and address
- All containers used on the job must be labeled for content and precautions if substance contained is hazardous. Materials will be left in their manufacturer's container where possible. When hazardous materials are transferred to other containers for ease of use, the container will be clearly marked for content, and any remaining material returned to its original manufacturer's container immediately after use
- If labels become illegible for any reason, a new label must be affixed containing all required information, or the material disposed of properly
- No container will be released for use until this information is verified. Corporate EH&S Manager Mike Dahl will ensure that all containers are labeled with a copy of the original manufacturer's label or a label that has the appropriate identification and hazard warning

SAFETY DATA SHEETS

SDS of all hazardous chemicals at the workplace are readily available to all Solomon Corporation employees to review. SDS are kept with the hazard communication plan at the office. The SDS are updated and managed by Corporate EH&S Manager Mike Dahl. If a SDS is not available for a hazardous chemical, before use, notify Corporate EH&S Manager Mike Dahl.

Prior to purchasing new products, Corporate EH&S Manager Mike Dahl will review the SDS sheets to determine if the product carries carcinogens or other extremely hazardous chemicals. If a potential carcinogen or other extremely hazardous chemical is to be used, Corporate EH&S Manager Mike Dahl will inform employees of the hazards, safe usage, and proper handling techniques.

EMPLOYEE TRAINING

New workers will get hazard communication training on the following before they start work.

- An overview of the requirements in Cal OSHA §5194 – Hazard Communication and §5203 – Carcinogen Report of Use Requirements
- Hazardous chemicals in their workplace
- The written hazard-communication plan, and where it may be reviewed
- Physical and health effects of the hazardous chemical
- Methods that determined the presence or release of hazardous chemicals in the area.
- How to reduce or prevent exposure chemicals through controls and PPE
- Steps we have taken to reduce or prevent exposure to these chemicals
- Emergency procedures to follow if an employee is exposed to these chemicals
- How to read labels and review Safety Data Sheets

After attending the training, each employee will sign a company training form verifying that they understand the above topics and how the topics are related to our hazard-communication plan. The training will be documented, including a brief description of the training, the trainer's name, and retrained. Documentation will be kept for 1 year.

HAZARDOUS CHEMICALS LIST

The following list identifies all hazardous chemicals used at this workplace. Detailed information about the physical and health effects of each chemical is included in a Safety Data Sheet; the identity of each chemical on the list matches the identity of the chemical on its Safety Data Sheet. Safety Data Sheets are readily available to employees in their work areas.

Product or Brand Name	Manufacturer	Hazardous Ingredient

HAZARDOUS NON-ROUTINE TASKS

Before employees perform non-routine tasks that may expose them to hazardous chemicals, they will be informed by their supervisors about the chemicals' hazards. Their supervisors also will inform them about the safe work practices necessary to control exposure and what to do in an emergency. Examples of non-routine tasks that may expose employees to hazardous chemicals include the following:

Task:	Hazard:

HAZARDOUS CHEMICALS IN PIPES, CLOSED, OR HIDDEN SYSTEMS

Before working in areas where hazardous chemicals are transferred through pipes or where pipes are insulated with asbestos-containing material, employees will contact _____ for the following information:

- The chemicals in the pipes
- The physical or health effects of the chemicals or the asbestos insulation
- The safe work practices to prevent exposure

NOTIFICATION OF CONTRACTORS

It is the responsibility of the assigned job foreman to provide any workplace associated contractors and their employees with the following information if they may be exposed to hazardous chemicals in our workplace:

- The identity of the chemicals, how to review Safety Data Sheets, and an explanation of the container and pipe labeling system
- Safe work practices to prevent exposure

This person will also obtain a Safety Data Sheet for any hazardous chemical a contractor brings into the workplace to which an employee of Solomon Corporation may be exposed.

HAZARD COMMUNICATION IN THE WORKPLACE

The essence of hazard communication is a warning. We use thousands of chemical products throughout our lives, at home and at work. However, most of us would be hard-pressed to distinguish safe products from hazardous ones without a warning – the familiar skull-and-crossbones, for example. The warning tells us the product is hazardous, that it can harm us if we use it improperly.

In the workplace, hazard communication ensures that workers who may be exposed to hazardous chemicals know about the chemicals' hazards and understand how to protect themselves from exposure.

THE HAZARD COMMUNICATION PROCESS

Hazard communication begins when chemical manufacturers and importers evaluate their products to determine each product's chemical hazards. Next, they prepare a *Safety Data Sheet* (SDS) for each product. An SDS includes detailed information about the product's hazards. Manufacturers and importers must include an SDS and a warning label with each container of product that they ship to a customer.

The part of the process that affects your workplace is the "*Written Hazard-Communication Plan*." The plan identifies hazardous chemicals at your workplace and describes how you will use safety data sheets, warning labels, and training to protect employees and keep informed about the product's chemical hazards.

DEFINITION OF A HAZARDOUS CHEMICAL

OSHA's hazard-communication rule, 1910.1200, defines a hazardous chemical as "any element, chemical compound, or mixture that is a physical hazard or a health hazard."

CHEMICALS THAT ARE PHYSICAL HAZARDS

Chemicals that are physical hazards are unstable and, when handled improperly, can cause fires or explosions. A chemical that is a physical hazard has one of the following characteristics:

- Is a combustible liquid
- Is a compressed gas
- Is explosive
- Is flammable
- Is water-reactive
- It starts or promotes combustion in other materials
- It can ignite spontaneously in air

CHEMICALS THAT ARE HEALTH HAZARDS

Chemicals that are health hazards can damage an exposed person's tissue, vital organs, or internal systems. Generally, the higher the chemical's toxicity the lower the amount or dose necessary for it to have harmful effects. The effects vary from person to person, ranging from temporary discomfort to permanent damage, depending on the dose, the toxicity, and the duration of exposure to the chemical.

Health effects range from short-duration symptoms that often appear immediately (acute effects) to persistent symptoms that usually appear after longer exposures (chronic effects). Health effects can be classified by how they affect tissue, vital organs, or internal systems:

- Agents that damage the lungs, skin, eyes, or mucous membranes
- Carcinogens cause cancer
- Corrosives damage living tissue
- Hematopoietic agents affect the blood system
- Hepatotoxins cause liver damage
- Sensitizers cause allergic reactions & Irritants cause inflammation of living tissue
- Nephrotoxins damage cells or tissues of the kidneys
- Neurotoxins damage tissues of the nervous system
- Reproductive toxins damage reproductive systems, endocrine systems, or a developing fetus.

HOW TO DETERMINE WHETHER A CHEMICAL IS HAZARDOUS

A chemical is hazardous if it is listed in one of the following documents:

- OSHA Division 2, Subdivision Z safety and health rules, Toxic and Hazardous Substances; Division 3, Subdivision Z, Toxic and Hazardous Substances (Construction); Division 4, Subdivision Z, Chemical/Toxins (Agriculture)
- Threshold Limit Values for Chemical Substances and Physical Agents in the Work Environment (latest edition). Published by the American Conference of Industrial Hygienists (ACGIH)
- The Registry of Toxic Effects of Chemical Substances, published by the National Institute for Occupational Safety and Health (NIOSH)
- The chemical is listed in Cal/OSHA §5203 – Carcinogen Report of Use Requirements.
- The container label of the product will issue a warning of hazardous effects.

COMMONLY USED HAZARDOUS CHEMICALS

Listed below are chemicals among those most commonly used in U.S. workplaces.

Hazardous Chemical	Harmful Effects
Trichloroethane	May cause mutations in cells; can irritate the skin and eyes and cause unconsciousness and death. High exposures may damage the liver and kidneys.
Acetone	Can irritate the skin, eyes, nose, and throat. High concentrations can cause dizziness and loss of consciousness.
Aluminum oxide	Can irritate the eyes, nose, and throat. Repeated high exposure can cause scarring of the lungs and shortness of breath.
Ammonia	Can irritate the lungs and burn the eyes and skin. Long-term exposure can cause irritation of the eyes, nose, mouth, and throat.
Benzene	A cancer-causing agent that has been shown to cause leukemia. May also cause headaches and irritation of the eyes, nose, and throat. High exposure can cause convulsions and death.
Ethylbenzene	Can irritate the eyes, nose, and throat. Repeated contact can cause drying and scaling of skin and may cause liver damage. High concentrations may cause dizziness and loss of consciousness.
Ethylene glycol	Can irritate the eyes, nose, or throat and cause nausea, vomiting, and headaches. Repeated or high exposure levels can cause kidney damage or stones and brain damage. May cause birth defects.
Freon 113	May cause skin irritation and rashes as well as drowsiness.
Glycol ethers	Can irritate the eyes, nose, and throat and may cause birth defects. Repeated or high exposure can cause kidney damage. Brain damage also may occur.
Hydrochloric acid	Can irritate the lungs. High exposure can cause buildup of fluid in the lungs, which can cause death.
Lead	Can cause weakness and insomnia. Higher exposure can result in damage to the nervous and reproductive systems.
Methanol	Irritates the eyes, nose, mouth, and throat and can cause liver damage.
Methyl ethyl ketone	Can cause dizziness, headaches, blurred vision, and loss of consciousness. May cause birth defects.
Methyl isobutyl ketone	Irritates the skin, eyes, nose, and throat, and may cause dizziness, nausea, diarrhea, and loss of consciousness. Long-term exposure may damage the liver and kidneys.
Phenol	Can irritate the mouth, nose, throat, and eyes. Long-term exposure may damage the liver and kidneys and lead to genetic damage. May be a cancer risk. Major skin contact or inhaling it can cause death.
Sodium hydroxide	Breathing the dust or droplets can irritate and burn the lungs. Contact can cause severe skin burns.
Sulfuric acid	Can severely burn the skin and eyes. Repeated long-term exposure can cause bronchitis, shortness of breath, and emphysema.
Tetrachloroethylene	A suspected human carcinogen that has caused liver cancer in animals. It may damage the liver and kidneys after low but repeated exposure. It can cause dizziness and loss of consciousness.
Xylene	Can irritate the eyes, nose, and throat; high levels can cause loss of consciousness and death. It may damage fetuses. Repeated exposure may damage bone marrow and eyes and cause stomach problems.

USING SAFETY DATA SHEETS

A Safety Data Sheet contains detailed information about a hazardous chemical product's health effects, physical and chemical characteristics, and safe practices for using it.

RESPONSIBILITIES OF CHEMICAL MANUFACTURERS, IMPORTERS, AND DISTRIBUTORS

Chemical manufacturers and importers must prepare a Safety Data Sheet for each hazardous chemical product they produce. Distributors are responsible for ensuring that you have a Safety Data Sheet for each hazardous chemical product they sell to you.

WHAT TO DO IF YOU USE HAZARDOUS CHEMICAL PRODUCTS AT YOUR WORKPLACE

You must have a current Safety Data Sheet for each product. Employees must be able to review Safety Data Sheets in their work area at any time. You can keep Safety Data Sheets in a notebook or on a computer; however, employees must be able to obtain the information immediately in an emergency. One person should be responsible for managing all the Safety Data Sheets at your workplace. The person should ensure that the list of hazardous chemicals is current, that the identity of each chemical on the list matches its identity on its Safety Data Sheet, and that incoming hazardous-chemical containers have Safety Data Sheets.

WHAT TO DO WHEN YOU NO LONGER USE A HAZARDOUS CHEMICAL AT YOUR WORKPLACE

When you no longer use a hazardous chemical, you do not need to keep its Safety Data Sheet. However, you do need to keep a record of the chemical's identity, the locations, and the calendar years it was used in your workplace, for at least 30 years. For more information about record-keeping requirements, see 1910.1020(d)(ii)(B), "Access to employee exposure and medical records."

INFORMATION REQUIRED ON SAFETY DATA SHEETS

Chemical manufacturers and importers must prepare a Safety Data Sheet for each hazardous chemical product they ship to you. The following information must appear on each sheet.

Section 1, Identification includes product identifier; manufacturer or distributor name, address, phone number; emergency phone number; recommended use; restrictions on use.

Section 2, Hazard(s) identification includes all hazards regarding the chemical; required label elements.

Section 3, Composition/information on ingredients includes information on chemical ingredients; trade secret claims.

Section 4, First-aid measures includes important symptoms/effects, acute, delayed; required treatment

Section 5, Fire-fighting measures lists suitable extinguishing techniques, equipment; chemical hazards from fire.

Section 6, Accidental release measures lists emergency procedures; protective equipment; proper methods of containment and cleanup.

Section 7, Handling and storage lists precautions for safe handling and storage, including incompatibilities.

Section 8, Exposure controls/personal protection lists Cal OSHA's Permissible Exposure Limits (PELs); Threshold Limit Values (TLVs); appropriate engineering controls; personal protective equipment (PPE)

Section 9, Physical and chemical properties lists the chemical's characteristics.

Section 10, Stability and reactivity lists chemical stability and possibility of hazardous reactions.

Section 11, Toxicological information includes routes of exposure; related symptoms, acute and chronic effects; numerical measures of toxicity.

Section 12, Ecological information*

Section 13, Disposal considerations*

Section 14, Transport information*

Section 15, Regulatory information*

*OSHA does not require these sections.

Section 16, Other information, includes the date of preparation or last revision.

USING CONTAINER WARNING LABELS

The purpose of a container warning label is to warn employees about the container's contents and to refer employees to an appropriate Safety Data Sheet for more information about the chemical's physical and health hazards. Manufacturers, importers, and distributors must ensure that each hazardous chemical product sold to you has a label that includes the chemical's identity, a hazard warning, and a name and address for additional information about the product. If you use hazardous chemicals at your workplace, you must ensure that each hazardous chemical container has a legible label, in English, that identifies the chemical and warns of its hazards.

CONTENTS OF A WARNING LABEL

A warning label must identify the chemical – a common chemical name or a code name is acceptable – and display a hazard warning such as DANGER or the familiar skull and crossbones.

- The identity of the chemical on the label, on its Safety Data Sheet, and on your hazardous chemical list must match
- If you are not sure that a hazardous chemical container is properly labeled, contact the manufacturer or supplier
- Make someone at your workplace responsible for ensuring that all hazardous-chemical containers are properly labeled

CONTAINERS THAT MUST BE LABELED

Original containers of hazardous chemicals from a manufacturer, importer, or distributor must have warning labels. Do not remove or deface them. If you transfer a hazardous chemical from a labeled container to an unlabeled container, label the container.

SECONDARY/PORTABLE CONTAINERS

Secondary containers are used to hold material transferred from the manufacturers' original container. These are required to be labelled if:

- Is not used within the work shift by the individual who makes the transfer
- The worker who made the transfer leaves the work area
- The container is moved to another work area and is no longer in the possession of the person who filled the container

Labels for secondary containers must include:

- The identity of the chemical and appropriate hazard warnings must be shown on the label.
- The hazard warning that provides users with an immediate understanding of the primary health and/or physical hazard(s) of the chemical through the use of words, pictures, symbols, or any combination of these elements
- The name and address of the manufacturer, importer or other responsible party

The hazard label message must be legible, permanently displayed and written in English

Portable containers are intended for immediate use of a chemical by the person who makes the transfer. Labels on portable containers are not required if the worker who made the transfer uses all of the contents during the work shift, or the chemical is return to a labelled primary or secondary container at the end of the shift, or when work is completed.

Example of original container GHS label

SAMPLE LABEL

CODE _____
Product Name _____

Product Identifier

Company Name _____
Street Address _____
City _____ State ____
Postal Code _____ Country ____
Emergency Phone Number _____

Supplier Identification

Hazard Pictograms

Signal Word
Danger

Hazard Statements

Highly flammable liquid and vapor.
May cause liver and kidney damage.

Precautionary Statements

Keep container tightly closed. Store in a cool, well-ventilated place that is locked.
Keep away from heat/sparks/open flame. No smoking.
Only use non-sparking tools.
Use explosion-proof electrical equipment.
Take precautionary measures against static discharge.
Ground and bond container and receiving equipment.
Do not breathe vapors.
Wear protective gloves.
Do not eat, drink or smoke when using this product.
Wash hands thoroughly after handling.
Dispose of in accordance with local, regional, national, international regulations as specified.

In Case of Fire: use dry chemical (BC) or Carbon Dioxide (CO_2) fire extinguisher to extinguish.

First Aid
If exposed call Poison Center.
If on skin (or hair): Take off immediately any contaminated clothing. Rinse skin with water.

Supplemental Information

Directions for Use
_____
_____
_____

Fill weight: _____ Lot Number: _____
Gross weight: _____ Fill Date: _____
Expiration Date: _____

OSHA 3492-02 2012

TRAINING EMPLOYEES

REQUIRED HAZARD-COMMUNICATION TRAINING

If you have employees who may be exposed to hazardous chemicals, you must inform them about the chemicals and train them when they are hired and whenever they are exposed to a new chemical hazard or a process change. Required employee training:

- Where to find and how to read the hazard-communication plan, the list of hazardous chemicals, and Safety Data Sheets
- The operations in which hazardous chemicals are used
- The physical and health hazards of hazardous chemicals used by employees
- The meaning of warning labels on hazardous-chemical containers and on pipes that contain hazardous substances
- How to recognize emergencies involving hazardous chemicals
- How to use personal protective equipment

LABEL ELEMENTS TRAINING

Solomon Corporation will ensure all employees know the following elements of the labels.

- *Product Identifier* – Including the chemical name, code number or batch number based on the manufacturer, importer or distributer's decisions
- *Signal Word* – The two signal words "Danger" and "Warning" indicate the hazard's severity. Within a specific hazard class only one of the words will be used. "Danger" for more severe hazards and "Warning" for less severe. Danger will always be used if one of the hazards justifies it
- *Pictogram* – Employees need to understand the OSHA designated pictograms to indicate a hazard category. The pictograms are a red diamond with a black hazard on a white background, and are sufficiently wide enough to be clearly visible
- *Hazard Statement* – The Hazard Statement describes the nature of the hazard including the degree of the hazard. The hazard statements will be specific to the hazard classification category, and the same statements will be used regardless of the chemical or who produces it
- *Precautionary Statement* – The precautionary statement is a phrase describing recommended measures taken to minimize or prevent effects of exposure, improper storage or handling.
- Name, address and phone number of chemical manufacturer, distributor, or importer

Employees will also be trained on how to use the labels.

- Using the labels to ensure proper storage
- Quickly locate first aid information

They also need to know how the elements work together on a label.

- The different pictograms to indicate multiple hazards
- Where there are similar precautions, the one with most protective information will be on the label

SAFETY DATA SHEET (SDS) TRAINING

- Employees will be trained on the standardized 16-section format and the type of information found in each one.
- Training will also explain how the SDS information is related to the label information.

POLICY

Solomon Corporation has implemented this plan to ensure no employee is exposed to Heat Related Illnesses (HRI) in the workplace and will evaluate if heat could be a problem on a particular day based on temperature and humidity levels, and then implement adequate controls, methods, or procedures to reduce the risk of HRI. This policy will be available to all employees.

REFERENCES

- §3203 – Injury and Illness Prevention Program
- §3395 – Heat Illness Prevention in Outdoor Places of Employment

RESPONSIBILITIES

EMPLOYER RESPONSIBILITIES

- Training personnel in heat related illnesses
- Responding quickly to prevent heat related illnesses in high heat environments
- Ensuring all equipment is kept in good repair
- Ensuring employees follow safe job procedures
- Reviewing job hazard analysis whenever there is a significant change to any element of the job or there has been an injury or illness

CORPORATE EH&S MANAGER MIKE DAHL RESPONSIBILITIES

Corporate EH&S Manager Mike Dahl is responsible for ensuring the heat illness prevention program policies are communicated to all employees and maintained according to all applicable regulations, standards, and industry best practices.

SUPERVISOR RESPONSIBILITIES

- Establishing and maintaining safe and healthful working conditions
- Being familiar with heat when working outdoor safety and health hazards to which their employees are exposed, how to recognize them, the potential effects these hazards have on the employees, and rules, procedures and work practices for controlling exposure to those hazards
- Setting good examples, instructing their employees, making sure they fully understand and follow safe procedures

EMPLOYEE RESPONSIBILITIES

- Drinking liquids in high heat situations
- No employees should undertake a job that appears to be unsafe
- Report all unsafe conditions

TRAINING

According to the National Institute of Occupational Safety and Health (NIOSH), heat stress training should cover the following components:

- Knowledge of heat stress hazards
- Recognition of risk factors, danger signs, and symptoms
- Awareness of first-aid procedures for, & potential health effects of, heat stroke
- Employee responsibilities in avoiding heat stress
- Dangers of using alcohol and/or drugs (including prescription drugs) in hot work environments

EMPLOYEE TRAINING

- Environmental and personal risk factors for heat illness
- Procedures for identifying, evaluating, and controlling exposures to the environmental and personal risk factors for heat illness
- Importance of frequent consumption of water (up to 4 cups per hour)
- The importance of acclimatization
- Different types of heat illness and common signs and symptoms of heat illness
- The importance of immediately reporting to the employer or designee symptoms or signs of heat illness
- Procedures for responding to symptoms of possible heat illness, including how emergency medical services will be provided should they become necessary
- Procedures for contacting emergency medical services, and if necessary, for transporting employees to a point where they can be reached by medical service personnel
- How to provide clear and precise directions to the work site

SUPERVISOR TRAINING

Prior to assignment to supervision of employees working in the heat, training on the following topics will occur:

- The information provided for employee training
- Procedures the supervisor will follow to implement controls as determined by the employer
- Procedures the supervisor will follow when an employee exhibits symptoms consistent with possible heat illness, including emergency response procedures

All training will be documented and kept on file. The training roster will identify the names of the employees who attended the training, a brief description of what the training was on, and the supervisor’s name and signature who held the training. Training on heat stress will be given on an annual basis, or as deemed necessary by management.

PROCEDURES

Heat Illness Prevention Measures include:

- Access to Water
- Access to Shade
- Weather Monitoring and Acclimatization
- High Heat Procedures
- Employee and Supervisory Training
- Written Procedures Including Emergency Response

ACCESS TO WATER

- Potable drinking water must be made available at no cost to the employee
- Maintain, at all times, sufficient quantities of cool potable drinking water (i.e. enough to provide at least one quart per employee per hour for the entire shift)
- Water must be fit to drink. Water containers CANNOT be refilled from non-potable water sources (e.g. irrigation wells, sprinkler or firefighting systems)
- Take care to prevent contamination of the drinking water supplied to the workers
- Implement and maintain effective replenishment procedures when beginning the shift with smaller quantities
- Locate the water containers as close as practicable given the working conditions and layout of the worksite
- Keep it readily accessible, move it with the workers!
- Encourage the frequent drinking of water

SHADE (WHEN TEMPERATURE EXCEEDS 85 FAHRENHEIT)

- Maintain one or more areas of shade at all times, when employees are present
- Locate the shade as close as practical to the area where employees are working
- Provide enough shade to accommodate at least 25% of the employees on the shift at any one time. However, retain the ability to permit access to all workers that request it
- Remember: Access to shade must be permitted at all times
- Encourage employees to take a cool-down rest in the shade, for a period of no less than 5 minutes at a time
- Shaded area must not cause exposure to another health or safety hazard. Areas underneath mobile equipment (e.g. tractor), or areas that require crouching in order to sit fully in the shade are not acceptable
- Shade (when temperature below 85 Fahrenheit) - When the temperature does not exceed 85° F, provide timely access to shade upon request
- When Infeasible or Unsafe- In situations where the employer can demonstrate that it is not safe or feasible to shade upon request or, for non-agricultural employers, alternative cooling measures that provide equivalent protection

MONITOR THE WEATHER

- Instruct supervisors to track the weather of the job site [by monitoring predicted temperature highs and periodically using a thermometer]
- Determine, and instruct supervisors on, how weather information will be used to modify work schedule, increase number of water and rest breaks or cease work early if necessary

ADDRESS LACK OF ACCLIMATIZATION

As an employer, we are responsible for the working conditions of our employees, so we must act effectively when conditions result in sudden exposure to heat that our workers are not used to. Thus, determine how we will:

- Lessen the intensity and/or shift length of the newly-hired employees' work during a two or more week break-in period
- Modify the work schedule or reschedule non-essential duties, during the hot summer months
- Be extra-vigilant with our employees to recognize immediately symptoms of possible heat illness

HIGH HEAT PROCEDURES (WHEN TEMPERATURE EQUALS OR EXCEEDS 95 F)

We will implement additional preventive measures:

- Ensure effective communication (by voice, observation or electronic means)
- Observe employees for alertness and signs and symptoms of heat illness
- Give more frequent reminders to drink plenty of water
- Closely supervise new employees, for the first 14 days

ATTACHMENTS

- Recognizing and Avoiding Heat Stress
- Heat Stress Risk Assessment Factors

RECOGNIZING AND AVOIDING HEAT STRESS

HEAT STRESS IN CONSTRUCTION

Construction operations involving heavy physical work in hot, humid environments can put considerable heat stress on workers. Hot and humid conditions can occur either indoors or outdoors.

Outdoors

- Road building
- Residential construction
- Work on bridges
- Trenching
- Pouring and spreading tar or asphalt
- Roofing operations
- Steel Erection
- Excavation and grading

Indoors

- Steel mills and foundries
- Boiler rooms
- Pulp and paper mills
- Electrical utilities
- Petrochemical plants
- Smelters
- Furnace operations
- Oil and chemical refineries
- Electrical vaults
- Interior construction and renovation

Asbestos removal, work with hazardous wastes, and other operations that require workers to wear semi-permeable or impermeable protective clothing can contribute significantly to heat stress. Heat stress causes the body's core temperature to rise.

When the Body's Core Temperature Rises

The human body functions best within a narrow range of internal temperature. This "core" temperature varies from 96.8° F to 100.4° F. A construction worker performing heavy work in a hot environment builds up body heat. To get rid of excess heat and keep internal temperature below 100.4° F, the body uses two cooling mechanisms:

- The heart rate increases to move blood – and heat – from heart, lungs, and other vital organs to the skin
- Sweating increases to help cool blood and body. Evaporation of sweat is the most important way the body gets rid of excess heat

When the body's cooling mechanisms work well, core temperature drops or stabilizes at a safe level (around 98.6° F). But when too much sweat is lost through heavy labor or working under hot, humid conditions, the body does not have enough water left to cool itself. The result is dehydration. Core temperature rises above 100.4° F. A series of heat-related illnesses, or heat stress disorders, can then develop.

RECOGNIZING HEAT STRESS DISORDERS

Heat stress disorders range from minor discomforts to life-threatening conditions: heat rash, heat cramps, heat exhaustion, heat strokes.

Heat Rash

Heat rash – also known as prickly heat – is the most common problem in hot work environments.

Symptoms include:

- Red blotches and extreme itchiness in areas persistently damp with sweat
- Prickling sensation on the skin where sweating occurs

Treatment — cool shaded environment, cool shower, thorough drying. In most cases, heat rashes disappear a few days after heat exposure ceases. If the skin is not cleaned frequently enough, the rash may become infected.

Heat Cramps

Under extreme conditions, such as removing asbestos from hot water pipes for several hours in heavy protective gear, the body may lose salt through excessive sweating. Heat cramps can result. These are spasms in larger muscles – usually back, leg, and arm. Cramping creates hard painful lumps within the muscles.

Treatment — shade, stretch and massage muscles; replace salt by drinking commercially available carbohydrate/electrolyte replacement fluids.

Heat Exhaustion

Heat exhaustion occurs when the body can no longer keep blood flowing to supply vital organs and send blood to the skin to reduce body temperature at the same time. Signs and symptoms of heat exhaustion include: weakness, difficulty continuing work, headache, breathlessness, nausea or vomiting, feeling faint or actually fainting.

Workers fainting from heat exhaustion while operating machinery, vehicles, or equipment can injure themselves and others.

Treatment — heat exhaustion casualties respond quickly to prompt first aid. If not treated promptly, however, heat exhaustion can lead to heat stroke—a medical emergency

- Call 911
- Help the casualty to cool off by: resting in a cool shaded place, drinking cool water, removing unnecessary clothing, loosening clothing, showering or sponging with cool water

It takes at least 30 minutes to cool the body down once a worker becomes overheated and suffers heat exhaustion.

Heat Stroke

Heat stroke occurs when the body can no longer cool itself and body temperature rises to critical levels.

WARNING: Heat stroke requires immediate medical attention.

The primary signs and symptoms of heat stroke are:

• Confusion • Irrational behavior • Loss of consciousness • Convulsions	• Lack of sweating • Hot, dry skin • Abnormally high body temperature — for example, 104° F

For any worker showing signs or symptoms of heat stroke, Call 911:

- Provide immediate, aggressive, general cooling in a shaded area
- Immerse casualty in tub of cool water
- Place in cool shower
- Spray with cool water from a hose
- Wrap casualty in cool, wet sheets and fan rapidly
- Transport casualty to hospital
- Do not give anything by mouth to an unconscious casualty

WARNING — Heat stroke can be fatal even after first aid is administered. Anyone suspected of suffering from heat stroke should not be sent home or left unattended unless that action has been approved by a physician. If in doubt as to what type of heat-related disorder the worker is suffering from, call for medical assistance.

HEAT STRESS RISK ASSESSMENT FACTORS

Factors that should be considered in assessing heat stress include: personal risk factors, environmental factors, job factors.

PERSONAL RISK FACTORS

It is difficult to predict just who will be affected by heat stress and when, because individual susceptibility varies. There are, however, certain physical conditions that can reduce the body's natural ability to withstand high temperatures:

Weight – Workers who are overweight are less efficient at losing heat.

Poor physical condition – Being physically fit aids your ability to cope with the increased demands that heat places on your body.

Previous heat illnesses – Workers are more sensitive to heat if they have experienced a previous heat-related illness.

Age – As the body ages, its sweat glands become less efficient. Workers over the age of 40 may therefore have trouble with hot environments. Acclimatization to the heat and physical fitness can offset some age-related problems.

Heart disease or high blood pressure – In order to pump blood to the skin and cool the body, the heart rate increases. This can cause stress on the heart .

Recent illness – Workers with recent illnesses involving diarrhea, vomiting, or fever have an increased risk of dehydration and heat stress because their bodies have lost salt and water.

Alcohol consumption – Alcohol consumption during the previous 24 hours leads to dehydration and increased risk of heat stress.

Medication – Certain drugs may cause heat intolerance by reducing sweating or increasing urination. People who work in a hot environment should consult their physician or pharmacist before taking medications.

Lack of acclimatization – When exposed to heat for a few days, the body will adapt and become more efficient in dealing with raised environmental temperatures. This process is called acclimatization. Acclimatization usually takes 6 to 7 days.

Benefits include:

- Lower pulse rate and more stable blood pressure
- More efficient sweating (causing better evaporative cooling)
- Improved ability to maintain normal body temperatures

Acclimatization may be lost in as little as three days away from work. People returning to work after a holiday or long weekend – and their supervisors – should understand this. Workers should be allowed to gradually re-acclimatize to work conditions.

ENVIRONMENTAL FACTORS

Environmental factors such as ambient air temperature, air movement, and relative humidity can all affect an individual's response to heat. The body exchanges heat with its surroundings mainly through radiation and sweat evaporation. The rate of evaporation is influenced by humidity and air movement.

RADIANT HEAT

Radiation is the transfer of heat from hot objects through air to the body. Working around heat sources such as kilns or furnaces will increase heat stress. Additionally, working in direct sunlight can substantially increase heat stress. A worker is far more comfortable working at 80° F under cloudy skies than working at 80° F under sunny skies.

HUMIDITY

Humidity is the amount of moisture in the air. Heat loss by evaporation is hindered by high humidity but helped by low humidity. As humidity rises, sweat tends to evaporate less. As a result, body cooling decreases and body temperature increases.

AIR MOVEMENT

Air movement affects the exchange of heat between the body and the environment. As long as the air temperature is less than the worker's skin temperature, increasing air speed can help workers stay cooler by increasing both the rate of evaporation and the heat exchange between the skin surface and the surrounding air.

JOB FACTORS

CLOTHING AND PERSONAL PROTECTIVE EQUIPMENT (PPE)

Heat stress can be caused or aggravated by wearing PPE such as fire - or chemical -retardant clothing. Coated and non-woven materials used in protective garments block the evaporation of sweat and can lead to substantial heat stress. The more clothing worn or the heavier the clothing, the longer it takes evaporation to cool the skin. Remember that darker clothing absorbs more radiant heat than lighter-colored clothing.

WORKLOAD

The body generates more heat during heavy physical work. For example, construction workers shoveling sand or laying brick in hot weather generate a tremendous amount of heat and are at risk of developing heat stress without proper precautions. Heavy physical work requires careful evaluation even at temperatures as low as 75° F to prevent heat disorders. This is especially true for workers who are not acclimated to the heat.

CONTROLLING HEAT STRESS

Heat stress can be controlled through education, engineering, and work procedures. Controls will:

- Protect Health – Illness can be prevented or treated while symptoms are still mild
- Improve Safety – Workers are less liable to develop a heat-related illness and have an accident. Heat stress often creeps up without warning. Many heat-induced accidents are caused by sudden loss of consciousness
- Increase Productivity – Workers feel more comfortable and are likely to be more productive as a result

POLICY

The personal safety and health of each employee of Solomon Corporation is of primary importance. Prevention of occupationally-induced injuries and illnesses is of such consequence that it will be given precedence over operating productivity, whenever necessary. To the greatest degree possible, management will provide all mechanical and physical activities required for personal safety and health, in keeping with the highest standards.

We will maintain an injury and illness program conforming to the best practices of organizations of this type. To be successful, such a program must embody proper attitudes towards injury and illness prevention on the part of supervisors and employees. It also requires cooperation in all safety and health matters, not only between supervisor and employee, but also between each employee and their co-workers. Only through such a cooperative effort can a safety and health program, in the best interest of all, be established and preserved.

Our objective is an injury and illness program that will reduce the number of injuries and illnesses to an absolute minimum, not merely in keeping with, but surpassing, the best experience of operations similar to ours. Our goal is zero accidents and injuries.

REFERENCES

- §3203 – Injury and Illness Prevention Program

RESPONSIBILITIES

The Safety Coordinator(s) and/or Safety Committee Members

Solomon Corporation has designated:

Safety Coordinator	Corporate EH&S Manager Mike Dahl
Safety Coordinator	
Safety Committee Chair	
Safety Committee Vice-chairman	
Safety Committee Alternate Chair/Vice-chair	

Corporate EH&S Manager Mike Dahl will assist management in the initiation, education, and execution of an effective safety program including the following:

- Introducing the safety program to new employees
- Following up on recommendations, suggestions, etc., made at the “Weekly” safety meetings. All topics of safety concerns must be documented accordingly
- Assisting the personnel in the execution of standard policies
- Conducting safety inspections on a periodic basis
- Addressing all hazards or potential hazards as needed
- Preparing monthly accident reports and investigations
- Maintaining adequate stock of first aid supplies and other safety equipment to insure their immediate availability
- Ensure an adequate number of qualified “First Aid Certified” people on the work site
- Know Cal/OSHA regulations and local and state safety codes
- Defining the responsibilities for safety and health of all subordinates and holding each person accountable for their results through the formal appraisal system and where necessary, disciplinary procedures
- Emphasize accidents create unnecessary personal and financial losses

Solomon Corporation accepts responsibility for leadership of the injury and illness program, for its effectiveness and improvement, and for providing the safeguards required to ensure safe work conditions.

EMPLOYEE INVOLVEMENT & RESPONSIBILITIES

It is the duty of each and every employee to know the safety rules, and conduct his work in compliance with these rules. Disregard of the safety and health rules will be grounds for disciplinary action up to and including termination. It is also the duty of each employee to make full use of the safeguards provided for their protection. Every employee will receive an orientation when hired and receive a copy of any Company Injury and Illness Programs. Employee responsibilities include the following:

- Reading, understanding and following safety and health rules and procedures
- Signing the Code of Safe Practices and any other policy acknowledgements
- Wearing Personal Protective Equipment (PPE) when working in areas where there is a possible danger of injury
- Wearing suitable work clothes as determined by the supervisor/foreman
- Performing all tasks safely as directed by their supervisor/foreman
- Reporting ALL injuries, no matter how slight, to their supervisor/foreman immediately and seeking treatment promptly
- Knowing the location of first aid, firefighting equipment, and safety devices
- Attending any and all required safety and health meetings
- Not performing potentially hazardous tasks, or using any hazardous material until properly trained, and following all safety procedures for those tasks
- Stop and ask questions if in doubt about operation safety

TRAINING

Training is another essential element of any injury and illness prevention plan. Cal/OSHA rules require Solomon Corporation to train workers for any job or task they are assigned.

Our plan includes training and instruction: for all employees when they are first hired, for all new employees for each specific task, for all employees given new job assignments for which training has not already been received.

TRAINING DOCUMENTATION

The documentation of employee safety and health training will include the following elements: employee name, training dates, assigned trainer.

This documentation will be maintained for at least one (1) year.

PROCEDURES

Employees are required to *work* in *compliance* with the safety rules, *report* all accidents and near misses, and report all *unsafe* conditions or unsafe *practices*. To demonstrate Solomon Corporation*'s* commitment to support the employees in these responsibilities, Solomon Corporation will do the following:

COMMUNICATION SYSTEM:

- Encourage employees to inform Solomon Corporation about workplace hazards without fear of reprisal, and allow anonymous reports
- Establish and maintain a centrally located "Safety Bulletin Board" where current, relevant information may be easily reviewed by employees
- Schedule general employee meetings at which time safety is freely and openly discussed by those present. These meetings will be regular, scheduled, and announced to all employees and managers to achieve maximum attendance. The purpose of these meetings is safety, and the concentration will be on:
  - Occupational accident and injury history at our work sites, with possible comparison to other locations within The Company
  - Feedback from the Safety Committee
  - Guest speakers concerned with workplace safety and health
  - When possible, brief audio-visual materials that relate to our business
- Conduct training programs for communicating with employees
- Provide a safety suggestion box so that employees, anonymously if desired, can communicate their concerns with management
- Document all communication efforts to demonstrate that an effective communication system is in place

SUPERVISORS/FOREMEN

The Supervisors and/or Foremen will establish an operating atmosphere to insure that safety and health is managed in the same manner and with the same emphasis as production, cost, and quality control. This will be accomplished by:

- Regularly emphasizing that accident and health hazard exposure prevention are not only moral responsibilities, but also a condition of employment
- Identifying operational oversights that could contribute to accidents which often result in injuries and property damage
- Participating in safety and health related activities, including routinely attending safety meetings, reviews of the facility, and correcting employee behavior that can result in accidents and injuries
- Spending time with each person hired explaining the safety policies and the hazards of his/her particular work
- Ensuring that initial orientation of "new hires" is properly carried out
- Making sure that if a “Competent Person” is required, that one is present to oversee, and instruct employees when necessary
- Never short-cutting safety for expediency, nor allowing workers to do so
- Enforcing safety rules consistently, and following Solomon Corporation discipline and enforcement procedures.
- Conducting daily job-site inspections and correcting noted safety violations

HAZARD IDENTIFICATION & CONTROL

Periodic inspections and procedures for correction provide methods of identifying existing or potential hazards in the workplace, and eliminating or controlling them. Hazard control is essential to an effective injury and illness plan. We will be sure to look at work practices and ensure that they are being followed, and that unsafe conditions or procedures are identified and corrected properly and promptly. The inspections and procedures for correction will be documented and will be maintained for at least one (1) year. These procedures will be reevaluated:

- Whenever new substances, processes, procedures, or equipment are introduced into the workplace and present a new hazard
- Whenever new personal protective equipment or different work practices are used on existing hazards
- Whenever the Solomon Corporation is made aware of a new or previously unrecognized hazard
- To ensure supervisors are familiar with the safety and health hazards to which employees under their immediate direction and control may be exposed

Employees are encouraged to report possible hazardous situations, knowing their reports will be given prompt and serious attention.

Workplace equipment and personal protective equipment will be maintained in good, safe working condition.

Hazards, where possible, will be corrected as soon as they are identified. For those that cannot be immediately corrected, a target date for correction will be set. Solomon Corporation will provide interim protection for workers while hazards are being corrected. A written tracking system will be established to help monitor the progress of the hazard correction process.

Accident Incident Investigation

Solomon Corporation and safety committees are required to investigate or assign responsibility for investigating accidents. Accidents/incidents will be investigated by trained individuals, with the primary focus of understanding why the accident or incident occurred, and what actions can be taken to preclude recurrence. The focus will be on *solutions* and never on *blame*. They will be in writing, and adequately identify the causes of the accident or near-miss occurrence.

Periodic Program Evaluation

A periodic review is scheduled to look at each critical component in our injury and illness prevention plan to determine what is working well and what changes, if any, are needed. All employees are encouraged to participate by keeping Solomon Corporation informed of their concerns regarding the elements of this safety and health plan.

The success of this injury and illness prevention plan is dependent upon two things: First, Solomon Corporation must provide a *safe* and *healthful* environment in which the employee has the opportunity to work safe, and second, the employee must *choose* to *work safe*.

POLICY

This Solomon Corporation Confined work spaces policy is to identify all confined work spaces at this workplace and ensure authorized employees will enter, work in, and exit the spaces safely.

REFERENCES

- §3203 – Injury & Illness Prevention
- §5157 – Permit-Required Confined Spaces
- §5158 – Other Confined Space Operations

RESPONSIBILITIES

Corporate EH&S Manager Mike Dahl is the administrator responsible for the enforcement of this policy.

EMPLOYER RESPONSIBILITIES

- Evaluate the workplace to determine whether any spaces are Permit Required Confined Spaces (PRCS)
- Inform exposed employees of presence of permit-required confined spaces with signs or equally effective means
- Take measures to prevent employees from entering permit spaces without permit
- Develop and implement a written permit space program — available for inspection by employees or their representatives — if employees are permitted to enter permit spaces
- Reevaluate, and reclassify as necessary, a non-permit confined space when there are changes in use or configuration of that space that may increase hazards to entrants
- Follow applicable standards and regulations when a contractor enters permit spaces
- Provide at no cost to the employee and keep in good repair all equipment necessary for the written permit space program including, but not limited to Personal Protective Equipment (PPE), communication equipment, testing equipment, and ventilation equipment
- Evaluate permit space conditions when entry operations are concluded
- Provide at least one attendant outside permit space during entry operations able to respond to an emergency
- Designate individuals with active roles in entry operations, identify their duties and provide appropriate training
- Develop and implement all other elements of a permit space program including:
- Procedures for rescuing entrants from confined permit spaces, providing rescue and emergency services and preventing unauthorized personnel from attempting rescue
- System for preparing, issuing, using and cancelling entry permits
- Procedures to coordinate entry operations with another employer so employees of one employer don’t endanger employees of another
- Procedures for concluding entry
- Review entry operations and the permit space program yearly to ensure employees are protected from permit space hazards

- Consult with affected employees or their representatives in the development and implementation of all elements of the permit space program, and make available to them all information required for the permit space program

SAFETY COMMITTEE RESPONSIBILITIES

It is the responsibility of the Solomon Corporation safety committee to:

- Assist in identifying confined spaces and permit spaces
- Assist in training employees regarding permit space procedures
- Participate in regular review of permit space program as necessary
- Offer management recommendations from employees about the permit space program
- Assist in confined space entry procedures and rescue operations as required

EMPLOYEE RESPONSIBILITIES

Employees are expected to abide by the confined space entry program These responsibilities vary according to the role the employee serves with each entry:

AUTHORIZED ENTRANT

- Know the hazards that may be faced during entry, including information on the mode, signs or symptoms, and consequences of the exposure
- Properly use all equipment necessary for safe entry into any permit space, as well as any equipment necessary to ensure safe conditions within the permit space and equipment to provide safe rescue from the space
- Communicate with the attendant as necessary to enable the attendant to monitor entrant status and to enable the attendant to alert entrants of the need to evacuate the space
- Alert the attendant whenever the entrant recognizes any warning sign or symptom of exposure to a dangerous situation, or the entrant detects a prohibited condition
- Exit from the permit space as quickly as possible whenever any of the following occur:
- An order to evacuate is given by the attendant or the entry supervisor
- The entrant recognizes any warning sign or symptom of exposure to a dangerous situation
- The entrant detects a prohibited condition
- An evacuation alarm is activated

ATTENDANT

- Know the hazards that may be faced during entry, including information on the mode, signs or symptoms, and consequences of the exposure; and possible behavioral effects of hazard exposure in authorized entrants
- Continuously maintain an accurate count of authorized entrants in the permit space and ensure the means used to identify authorized entrants accurately identify entrants
- Remain outside the permit space during entry operations until relieved by another attendant (If the permit entry program allows attendant entry for rescue, attendants may enter a permit space to attempt a rescue if they have been trained and equipped for rescue operations and if they have been relieved.)

- Communicate with authorized entrants as necessary to monitor entrant status and alert entrants of the need to evacuate the space
- Monitor activities inside and outside the space to determine if it is safe for entrants to remain in the space and orders the authorized entrants to evacuate the permit space immediately under any of the following conditions: if the attendant detects a prohibited condition; if the attendant detects the behavioral effects of hazard exposure in an authorized entrant; if the attendant detects a situation outside the space that could endanger the authorized entrants; if the attendant cannot effectively and safely perform all the duties required
- Summon rescue and emergency services as soon as the attendant determines that authorized entrants may need assistance to escape from hazards
- Takes the following actions when unauthorized persons approach or enter a permit space while entry is underway: warn the unauthorized persons that they must stay away from the permit space; advise the unauthorized persons that they must exit immediately if they have entered the permit space
- Inform the authorized entrants and the entry supervisor if unauthorized persons have entered the permit space
- Perform rescues as specified by the rescue procedure
- Perform no duties that might interfere with the primary duty to monitor and protect the authorized entrants

ENTRY SUPERVISOR

- Know the hazards that may be faced during entry, including information on the mode of possible exposure, signs or symptoms, and consequences of the exposure
- Verify, by checking that the appropriate entries have been made on the permit, that all tests specified by the permit have been conducted and all procedures and equipment specified by the permit are in place before allowing entry to begin
- Terminate the entry and cancel the permit when required
- Verify rescue services are available and there are means for summoning them.
- Implement control measures to prevent unauthorized individuals from entering the permit-required confined space
- Remove unauthorized individuals who enter or who attempt to enter the permit space.
- Determine — upon transfer of responsibility for a permit space entry operation and when dictated by the hazards and operations performed within the space — that entry operations remain consistent with terms of the entry permit and that acceptable entry conditions are maintained
- Perform a PRCS hazard assessment before entering

TRAINING

Corporate EH&S Manager Mike Dahl will ensure every affected employee is provided training on confined spaces. This training will be provided at no cost to the employee during working hours.

Solomon Corporation will use only training material that is appropriate in content and vocabulary to the educational level, literacy, and language of employees.

Training Components – Corporate EH&S Manager Mike Dahl will ensure that every employee will be trained in the following minimum elements:

- How to identify a confined workspaces
- The need for safe confined space entry procedures
- Hazards present in confined spaces and inherent hazards presented by any confined space in the workplace
- The roles of individuals involved in safe confined-space entry

Employees expected to perform duties as an entry supervisor, hazardous confined space entry attendant or authorized entrant will receive training and demonstrate the understanding, knowledge and skills necessary to participate safely in the confined space entry program, including, but not limited to the following:

- The specific hazards of all confined spaces in the workplace
- Conditions under which a confined space may or must be reclassified under the confined space entry program
- Conditions required to participate in alternate confined-space entry procedures and the alternate procedures for permit space entry
- Pre-entry procedures for confined space entry
- Any equipment provided or used as part of the confined space entry program
- Plans and procedures for response or rescue in case of an emergency in a permit space and permit-space evacuation
- The contents and requirements of a confined-space entry permit
- The roles and responsibilities of each employee involved in confined space entry
- The importance of atmospheric monitoring and how to perform such monitoring
- Steps required following permit space entry
- The permit space program review process

Training will be provided at the following times:

- Before an employee is first assigned duties that involve confined-spaces work
- Before there is a change in the employee's assigned duties
- When there is a change in permit-space operations that presents a hazard for which the employee has not been trained
- When the employee does not follow entry procedures

TRAINING RECORDS

Training records will include the following information:

- The dates of the training sessions
- The contents or a summary of the training sessions
- The names, signatures and qualifications of persons conducting the training
- The names and job titles of all persons attending the training sessions

Employee training records shall be documented and include the name of the employee(s), signature of the trainer, and the date the training was held and maintained for 3 years from the date on which the training occurred.

REFRESHER TRAINING

Refresher training will be given on an annual basis. Additional training shall be given whenever Solomon Corporation determines the permit space entry procedures are not being followed, or that the employee(s) have shown inadequacy in the knowledge or use of the procedures

SAFE PRACTICES

CONFINED SPACES

Confined spaces are enclosed spaces that are large enough to work in but are difficult to enter and exit and are not designed to be occupied continuously.

A confined space can present life-threatening hazards that employees must control before workers may enter that space.

PERMIT-REQUIRED CONFINED SPACES

Confined spaces that may contain life-threatening hazards require workers to complete, sign and display an entry permit in accordance with confined-space entry permit regulations and the workplace permit space program.

The workplace must be assessed to determine whether any spaces present a hazard to workers and are permit-required confined spaces according to regulatory standards and industry best practices for safety. See Figure 2.

Solomon Corporation will implement measures necessary to prevent unauthorized entry into permit spaces and will inform exposed employees of the existence, location and hazards of permit spaces confined by posting warning signs in a clear, easily visible location near the confined space.

Each confined space must be assessed and the hazards identified, evaluated and controlled before any employee may enter. The following hazards may present risk to employees in confined spaces and must be controlled before any employee is permitted to enter.

Solomon Corporation shall designate at least one employee as a “standby”. The standby employee shall be trained in the dangers of permit-required confined spaces, including Immediately Dangerous to Life and Health (IDLH) atmospheres, and kept available to immediately respond to an emergency and perform rescue services.

POTENTIAL CONFINED SPACE HAZARDS

Hazardous Atmospheres

An atmosphere that exposes employees to the risk of death, incapacitation, impairment of ability to self-rescue, injury, or acute illness is a hazardous atmosphere and requires a permit (unless an approved alternate procedure renders the space safe for entry).

Oxygen-Deficient Atmospheres

An atmosphere with an oxygen concentration below 19.5% has insufficient oxygen for an employee and is a hazardous atmosphere. Such spaces require an approved breathing apparatus and a permit.

Flammable Atmospheres

An atmosphere is flammable, and hazardous, if any of the following conditions are true:

- Flammable gas, vapor or mist is present in excess of 10% of its lower flammable limit (LFL)
- Airborne combustible dust is present at a concentration at or above its LFL
- Atmospheric oxygen concentration exceeds 23.5%

Toxic Atmospheres

An atmospheric concentration of any substance in excess of its safe dose or permissible exposure limit (PEL) creates a hazardous atmosphere, as does any other atmospheric condition that is immediately dangerous to life or health.

Engulfing Potential

Any liquid or flowable solid that can kill by suffocation, strangulation, constriction or crushing has engulfing potential. A confined space that contains a material that can engulf an entrant is hazardous and requires a confined-space entry permit.

Trapping or Asphyxiation Risk

If the walls of a confined space converge inwardly or the floor of a confined space slopes downward to taper to a smaller cross-section an entrant runs the risk of becoming trapped and can face an asphyxiation risk. Confined spaces with such hazards are permit spaces.

Temperature Extremes

Extremely hot or cold temperatures can present problems for workers. Confined spaces can trap heat to create a condition dangerous to the life or health of a worker entering the space.

Noise

The design and acoustic properties in a confined space can amplify noise. Excessive noise can not only damage hearing and reduce reaction time to hazards but can also affect communication. This can cause a shouted warning to go unheard.

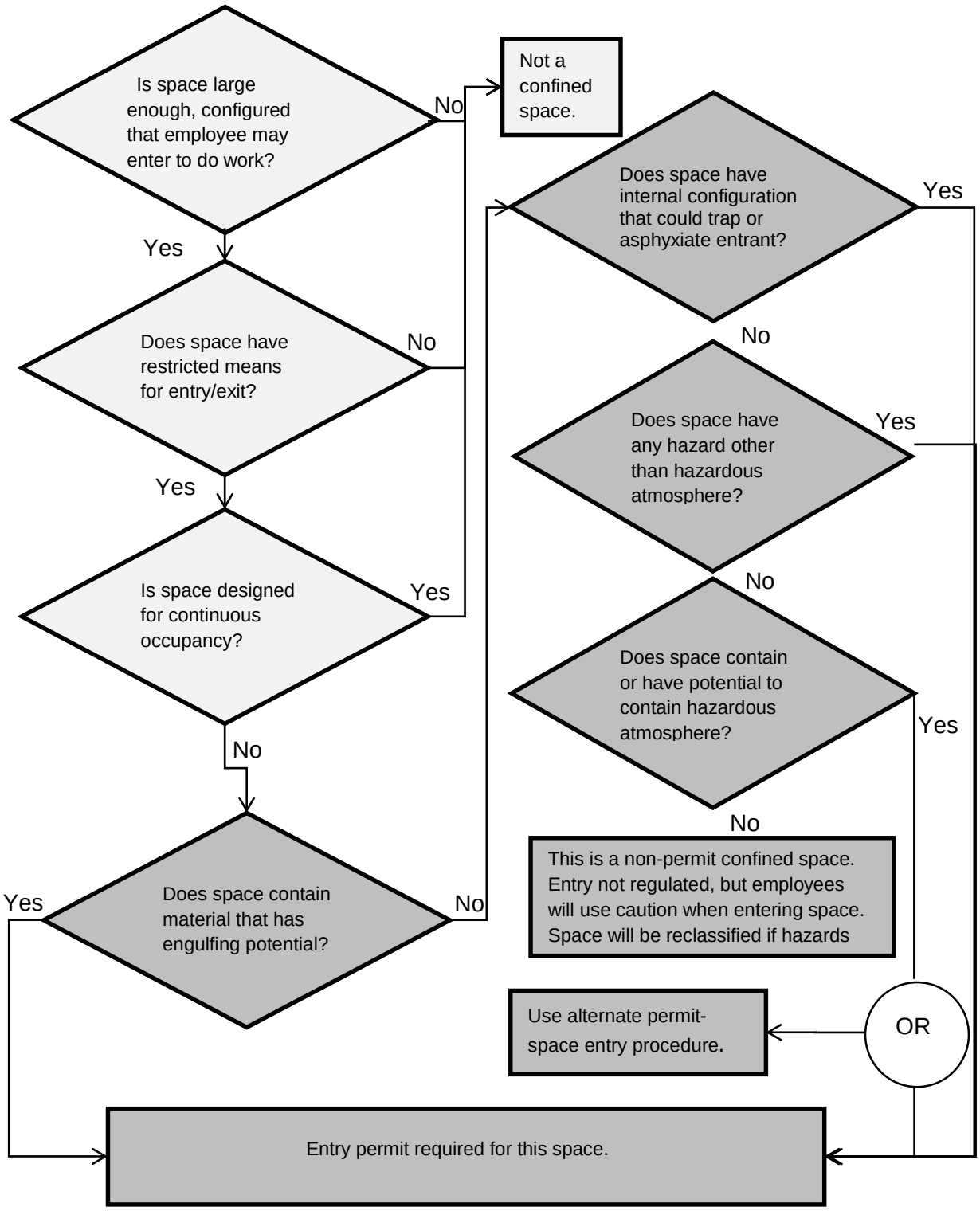
Slippery Surfaces

Slips and falls can occur on a slick, wet or icy surface, causing injury or death to workers. Further, wet environments can increase the likelihood of electric shock.

Falling Objects

Many confined spaces have openings above the worker that introduce hazards from the objects falling from above onto a worker below. Before any worker may enter a confined space, appropriate barriers must protect entrants from falling objects.

CAL/OSHA PERMIT-REQUIRED CONFINED SPACES



RECLASSIFYING PERMIT SPACES

If hazards arise within a non-permit-required space, or if hazards arise within a permit-required space that was declassified to a non-permit space, each employee in the space shall exit the space immediately. The space must be reevaluated to determine whether to reclassify it as a permit-required confined space.

Once a confined space is classified as a permit-entry space, an authority can only reclassify the space as a non-permit confined space if there are no actual or potential atmospheric hazards and all hazards within the space are eliminated and remain eliminated. If entry is required to eliminate hazards, such entry must occur under a permit.

The elimination of hazards must be certified with documentation that includes the date, the location of the space, and the signature of the person who determined the reclassification.

Unusual Conditions

Confined Space Within a Confined Space - By the very nature of construction, situations are created which illustrate one of the most hazardous confined spaces of all — a confined space within a confined space. This situation appears as tanks within pits, pipe assemblies or vessels within pits, etc. In this situation, not only do the potential hazards associated with the outer confined space require testing, monitoring, and control, but those of the inner space also require similar procedures. Often, only the outer space is evaluated. When workers enter the inner space, they are faced with potentially hazardous conditions.

Hazards In One Space Entering Another Space - During an examination of confined spaces in construction, one often encounters situations that are not always easy to evaluate or control. For instance, a room or area that is a confined space may be relatively safe for work. However, access passages from other areas outside or adjacent to the room could, at some point, allow the transfer of hazardous agents into the "safe" one.

ALTERNATE PERMIT SPACE ENTRY PROCEDURES

If the only hazard present in a permit space is an actual or potential hazardous atmosphere, alternate permit space entry procedures may be used, provided continuous forced air ventilation can render the atmosphere safe (as supported by monitoring and inspection data). The steps of the alternate procedure are as follows:

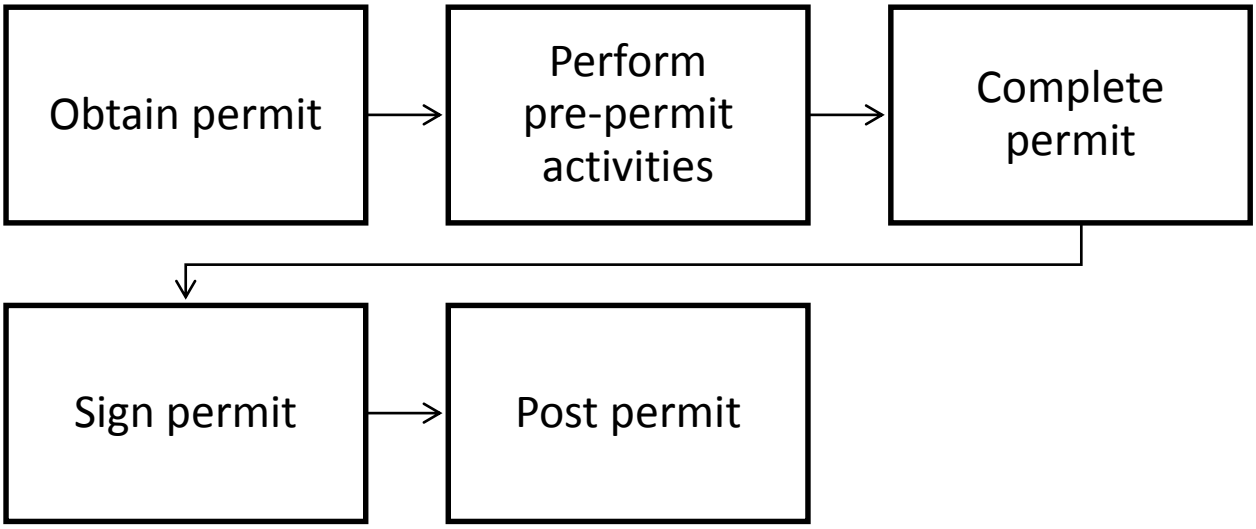
- Eliminate conditions that would make removing an entrance cover unsafe before removing a cover
- Guard the opening to prevent foreign objects from entering the space
- With a calibrated direct-reading instrument, test the internal atmosphere for the following (in this order): oxygen content, flammable gases and vapors, and potential toxic air

NOTE: Employees who enter the space or their authorized representative may observe pre-entry atmospheric testing.

- Continuous air ventilation from a clean source will ventilate the area where an employee is working to eliminate any hazardous atmosphere. Continuous air ventilation must not increase hazards in the space and shall continue until all employees have left the space
- Test the atmosphere in the space periodically to ensure that a hazardous atmosphere has not accumulated. The space must remain free of hazardous atmosphere when an employee is in the space

NOTE: Employees who enter the space or their authorized representative may observe periodic atmospheric testing.

- If hazardous atmosphere is detected during entry, all employees must evacuate the space, which must then be evaluated to determine how the hazardous atmosphere developed. Take necessary measures to protect employees from the hazardous atmosphere before re-entry
- *Corporate EH&S Manager Mike Dahl* will verify the space is safe for entry with a written certification including the date, location of the space, and the signature of the person providing the certification



PERMIT SPACE PROCEDURES

PRE-ENTRY

Before employees may enter a permit space, Corporate EH&S Manager Mike Dahl will identify and eliminate all hazards in the space or control the hazards so employees may complete their job and exit safely. A confined-space entry permit will document the process, and must be complete and posted at the entry of the permit space before entry.

Entrants or their authorized representative may observe all testing and monitoring of permit spaces and will be provided with the results of testing when requested. If an entrant or his authorized representative has reason to believe evaluation inadequate, the permit space will be reevaluated in their presence. Corporate EH&S Manager Mike Dahl shall develop rescue procedures for each permit-required confined space entry.

GUARD THE SPACE

Measures such as posting warning signs or erecting barriers against pedestrians or vehicles will be implemented to prevent unauthorized entry into permit spaces and to protect entrants from falling objects and other hazards from outside of the space.

TEST FOR ATMOSPHERIC HAZARDS

Testing the atmosphere in a confined space ensures the presence of sufficient oxygen and an absence of hazardous atmosphere. Authorized entrants or their representative may observe any monitoring or testing of the space. Monitoring of a potentially hazardous atmosphere must continue through the entry to ensure the permit remains valid. See “Appendix: Atmospheric Testing.”

NOTE: Where isolation is infeasible (such as exceptionally large spaces or spaces part of a larger, continuous system) testing will be performed to the extent feasible and entry conditions must be continuously monitored where entrants are working.

ISOLATE (LOCKOUT/TAGOUT)

Before any employee enters the permit space, the space must be isolated from hazards. The authorized entrant will disconnect any hazardous equipment, and prevent the flow of any hazardous chemical into the confined space according to the appropriate hazard control procedure.

ELIMINATE/CONTROL ATMOSPHERIC HAZARDS

When possible, continuous ventilation will be provided in a confined space to eliminate atmospheric hazards and the space will be purged, inerted, flushed or ventilated as necessary to eliminate or control atmospheric hazards.

EQUIPMENT

All equipment necessary for safe entry into any permit space will be provided by Solomon Corporation, as well as any equipment necessary to ensure safe conditions within permit spaces and provide safe rescue from a permit space at no cost to the employee. This may include, but is not limited to the following: atmospheric testing and monitoring equipment; ventilating equipment; communications equipment; PPE; lighting equipment; barriers to protect entrants from outside hazards; equipment to allow authorized entrants safe ingress and egress; rescue and emergency equipment.

ENTRY PERMIT

Before any employee may enter a permit space, the entry supervisor must complete and sign documentation of measures to render the space safe for entry and maintain control over potential hazards to workers (an entry permit). The permit will be readily available to all authorized entrants or their representatives, posted at the entry. If the nature of the space prevents permit posting at the entry, the permit must remain available by an equally effective means.

DURING ENTRY

While employees work in permit spaces the company will ensure every effort is taken to remove hazards and provide a safe working environment. Through the course of entry operations, testing and monitoring of the permit space will continue to ensure maintenance of entry conditions.

ATTENDANT

While employees remain in a permit space, an attendant will remain immediately outside the space to monitor conditions in the space and respond to emergencies. The attendant must remain in communication with entrants and know how to shut down hot work equipment, and any other equipment that may present a hazard to entrants.

There must also be in place an established means by which attendant responsibilities may be handed over to a relief attendant should an entry span more than one shift or the attendant otherwise requires relief from those responsibilities. This should be documented on the entry permit.

If an attendant is expected to monitor more than one confined space, there must be in place a written procedure to ensure that the attendant is able to monitor all of the spaces with the same diligence, and to ensure appropriate emergency and rescue response while continuing to attend all confined entry spaces.

ATMOSPHERIC MONITORING

If work in the permit space could cause changes in the atmospheric conditions of the space, air monitoring must continue throughout the entire entry to ensure the permit remains valid throughout the entry.

Entrants will have the opportunity to participate in and review the air monitoring data before entering and request additional monitoring at any time.

If entrants leave the permit space for an extended period, re-entry requires retesting the atmosphere.

See “Appendix: Atmospheric Testing.”

MEANS OF INGRESS AND EGRESS

Ladders and any other means of ingress and egress must remain secure and available to entrants during the entire entry.

PERMIT SPACE EVACUATION

Workers shall immediately evacuate the permit space under any of the following conditions:

- When the attendant orders evacuation
- When the entrant recognizes exposure to any hazard or detects a prohibited condition
- Upon an evacuation alarm

AFTER ENTRY

Cancel Permit - The entry supervisor will terminate entry and cancel the permit as soon as an emergency occurs in or near the confined space or upon completion of operations requiring permit-space entry.

Retain Permit - Entry permits will be retained for at least a year to help in the required regular evaluation of the confined space program. If entry presented any problems, the entrant, attendant or supervisor will note them on the permit to facilitate necessary revisions to the permit space program.

CONTRACTOR ENTRANT

If employees of another employer perform work that involves permit space entry, adhere to the following procedure:

- Inform the contractor that the workplace contains permit-required confined spaces
- Ensure that the contractor has reviewed the permit-required confined space program and has its own permit-required confined space program in place prior to entry
- Apprise the contractor of any precautions or procedures that have been implemented for the protection of employees in or near permit spaces
- Coordinate entry operations with the contractor when company employees and contractor(s) will be working in or near the permit space. (There should be no doubt by any permit space entrant, attendant or entry supervisor regarding whose policy and permit space practices are to be followed)

Debrief the contractor at the conclusion of the entry operation regarding the permit space program and regarding hazards confronted or created in permit space entry operations

NO ENTRANT

If no employee or contractor will enter a permit-required confined space, Effective measures must prevent anyone from entering the permit space. When a change in the use or configuration of a non-permit confined space might increase hazards to entrants, the space may be reevaluated and reclassified it as necessary.

RESCUE AND EMERGENCY PLANNING

The permit space must remain safe for entrants through the entire entry and a means must be established by which the permit space entry attendant can communicate with entrants to monitor the entry and evacuate the space if hazardous conditions arise.

Before any employee enters a permit space, there must be established specific procedures for summoning rescue and emergency services to respond to emergencies that may occur during entry.

Prior to beginning any work at a new job-site, Corporate EH&S Manager Mike Dahl, or the entry supervisor will verify the closest emergency medical and rescue service's ability to respond to a confined space emergency. The number for the verified emergency service will be prominently posted on the permit at the permit entry portal. In the event of an emergency requiring emergency service response, the assigned attendant will notify the entry supervisor, who is responsible for contacting emergency services.

- This service will be determined by Corporate EH&S Manager Mike Dahl to be qualified to provide emergency rescue and medical services in the event of a confined space emergency. The attendant will remain on station to assist in evacuating the space and prevent the entry of unauthorized rescue personnel

- Solomon Corporation will evaluate a prospective Rescue and Emergency Service's ability to respond to a rescue summons in a timely manner, considering the hazard(s) identified. What will be considered timely will vary according to the specific hazards involved in each entry. For example, §1910.134, Respiratory Protection, requires that standby person(s) be provided that are capable of immediate action to rescue employee(s) wearing respiratory protection while in work areas defined as IDLH atmospheres
- Corporate EH&S Manager Mike Dahl will evaluate a prospective rescue service's ability, in terms of proficiency with rescue-related tasks and equipment, to function appropriately while rescuing entrants from the particular permit space or types of permit spaces identified
- Corporate EH&S Manager Mike Dahl will select a rescue team or service from those evaluated that: has the capability to reach the victim(s) within a time frame appropriate for the permit space hazards identified; is equipped for and proficient in performing the needed rescue services
- Corporate EH&S Manager Mike Dahl will inform each rescue team or service of the hazards they may confront when called on to perform rescue at the site
- Corporate EH&S Manager Mike Dahl will provide the rescue team or service selected with access to all permit spaces from which rescue may be necessary so that the rescue service can develop appropriate rescue plans and practice rescue operations

Solomon Corporation employees who have been designated to provide permit space rescue and emergency services will be instructed in and adhere to the following measures:

- Corporate EH&S Manager Mike Dahl will provide affected employees with the personal protective equipment (PPE) needed to conduct permit space rescues safely and train affected employees so they are proficient in the use of that PPE, at no cost to those employees
- Corporate EH&S Manager Mike Dahl will train affected employees to perform assigned rescue duties and ensure that such employees successfully complete the training required to establish proficiency as an authorized entrant
- Corporate EH&S Manager Mike Dahl will train affected employees in basic first-aid and cardiopulmonary resuscitation (CPR) and will ensure that at least one member of the rescue team or service holding a current certification in first aid and CPR is available
- Corporate EH&S Manager Mike Dahl will ensure affected employees practice making permit space rescues at least once every 12 months, by means of simulated rescue operations in which they remove dummies, manikins, or actual persons from the actual permit spaces or from representative permit spaces. Representative permit spaces will, with respect to opening size, configuration, and accessibility, simulate the types of permit spaces from which rescue is to be performed

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

- Each authorized entrant will use a chest or full body harness, with a retrieval line attached at the center of the entrant's back, above the entrant's head, or at another point which presents a profile small enough for the successful removal of the entrant
- The other end of the retrieval line will be attached to a mechanical device or fixed point outside the permit space in such a manner that rescue can begin as soon as the rescuer becomes aware that rescue is necessary. A mechanical device will be available to retrieve personnel from vertical type permit spaces more than 5 feet deep
- If an injured entrant is exposed to a substance for which a Safety Data Sheet (SDS) or other similar written information is required to be kept at the worksite, that SDS or written information will be made available to the medical facility treating the exposed entrant
- In the event that an IDLH (Immediately Dangerous to Life and Health) entry is deemed necessary, Corporate EH&S Manager Mike Dahl will first contact the designated emergency response service, and ensure that emergency service is available on site before allowing entry into the confined space
- The assigned entry supervisor will be responsible for providing first aid where necessary after contacting emergency services

INFORMATION ON ENTRY PERMITS

The entry permit that documents compliance with this section and authorizes entry to a permit space will identify:

- The permit space to be entered
- The purpose of the entry
- The date and authorized duration of the permit
- The authorized entrants within the permit space
- The personnel, by name, currently serving as attendants
- The name of the entry supervisor, and signature or initials
- The hazards of the permit space to be entered
- The measures used to isolate the permit space and eliminate or control permit space hazards before entry
- The acceptable entry conditions
- The results of initial and periodic tests performed to ensure safe entry conditions, accompanied by the names or initials of the testers and by an indication of when the tests were performed
- The rescue and emergency services that can be summoned and the means of summoning those services

- The communication procedures used by authorized entrants and attendants to maintain contact during the entry
- Equipment to be provided for compliance with this section
- Any other information whose inclusion is necessary, given the circumstances of the particular confined space, in order to ensure employee safety
- Any additional permits, such as for hot work, that have been issued to authorize work in the permit space

RESCUE AND EMERGENCY SERVICES

No unauthorized personnel may attempt rescue.

RESCUE PERSONNEL

Emergency responders must be able to respond to emergencies in a timely manner and provide rescue service personnel with equipment necessary for a safe rescue from the permit space and training in how to use it. Rescue service personnel also must receive the authorized entrants' training in addition to training on assigned rescue duties. At a minimum, one rescue team member must be certified in first aid and CPR.

The site supervisor or other appropriate personnel will inform rescuers of hazards in the permit space as well as the means to control those hazards. Rescuers must practice rescue duties at least yearly, and rescue services will have access to permit spaces to practice rescue operations.

NON-ENTRY RESCUE AND RETRIEVAL EQUIPMENT

Authorized entrants who enter a permit space must wear a chest or full body harness with a retrieval line attached to the center of their backs near shoulder level or above their heads. Wristlets may be used if the employer can demonstrate that the use of a chest or full body harness is not feasible or creates a greater hazard.

The other end of the retrieval line must be attached to a mechanical device or a fixed point outside the permit space. A mechanical device must be available to retrieve someone from vertical type permit spaces deeper than five feet deep.

SAFETY DATA SHEETS

If an injured entrant is exposed to a substance for which a Safety Data Sheet (SDS) or similar written information is required to be kept at the worksite, that SDS or other written information must be made available to the medical facility personnel treating the exposed entrant.

PROGRAM REVIEW

If the permit space program may fail to provide sufficient protection for employees, supervisors will authorize no entries until program revision corrects the deficiencies.

Additionally, the confined space entry program must be reviewed within a year of each entry and revised as necessary to ensure protection from confined-space hazards for all entrants.

The permit space entry program review requires an investigation of cancelled permits to identify program deficiencies that may exist.

ATTACHMENTS

- Appendix: Atmospheric Testing
- Rescue & Emergency Services

APPENDIX: ATMOSPHERIC TESTING (AIR MONITORING)

Atmospheric testing is required for two distinct purposes: evaluation of the hazards of the permit space and verification that acceptable conditions exist for entry into that space.

EVALUATION TESTING

The atmosphere within a confined space must be tested using equipment that is designed to detect the chemicals that may be present at levels that are well below the defined exposure limits. The testing results and the decisions about what steps must be followed before entry must be evaluated by, or reviewed by, a technically qualified professional like an OSHA consultation service, a certified industrial hygienist, a registered safety engineer, or a certified safety professional. The technically qualified professional must consider all of the serious hazards in his/her evaluation or review.

VERIFICATION TESTING.

Before a permit space that may have a hazardous atmosphere can be entered, the atmosphere must be tested using the steps identified on the permit (developed during evaluation testing). Verification testing makes sure that the chemical hazards that may be present are below the levels necessary for safe entry, and that they meet the conditions identified on the permit. Test the atmosphere in the following order: (1) for oxygen, (2) for combustible gases, and then (3) for toxic gases and vapors. The actual test concentrations — must be recorded on the permit near the levels identified for safe entry.

DURATION OF TESTING

For each test required on the permit, you must allow enough time for the air from the space to be drawn into the equipment and for the sensor (or other detection device) to react to the chemical if it is present. This is considered the “minimum response time” and it will be noted by the manufacturer in the operator’s manual. Add time to this "minimum response time" if you have attached hosing or a probe extension to the inlet.

TESTING STRATIFIED ATMOSPHERES

For permit spaces that are deep or have areas leading away from the entry point, the atmosphere may be layered or may be different in remote areas. For these spaces, testing must be done in the area surrounding the worker, which is considered four feet in the direction of travel and to each side. If a sample probe is used to do the testing then the worker must move slowly enough so that testing is completed, keeping the equipment “response time” in mind, before he/she moves into the new area.

Rescue & Emergency Services									
Name	Rescue Duties	Rescue Equipment & PPE Authorized For Use	Training First Aid / CPR		Certified (Y/N)	Rescue Practice Date	Rescue Practice Session Description	Name of Trainer	Date of Training

POLICY

This policy has been developed by Solomon Corporation to apply to rigging and slings in conjunction with other material handling equipment for the movement of material by hoisting.

REFERENCES

- §3203 – Injury & Illness Prevention
- §5002 – Overhead Loads
- §5042 – Slings Safe Operating Practices
- §5043 – Inspections
- §5049 – Defective Hoist or Sling Hooks and Rings

RESPONSIBILITIES

EMPLOYER RESPONSIBILITIES

- Identifying hazardous materials used by employees
- Gathering identification of hazardous materials by contractors
- Ensure hazardous material container inspections of the facility occur on regular basis
- Training personnel in hazard communication
- Responding quickly to eliminate workplace hazards
- Ensuring all equipment is kept in good repair
- Ensuring employees follow safe job procedures
- Reviewing job hazard analysis whenever there is a significant change to any element of the job or there has been an injury or illness

SOLOMON CORPORATION RESPONSIBILITIES

Corporate EH&S Manager Mike Dahl is designated by Solomon Corporation as the Competent Person in authority over all rigging and hoisting operations. Corporate EH&S Manager Mike Dahl will ensure that all safety measures and systems are in place, all safety procedures are adhered to, and ensure regular inspections of the operational site and rigging equipment are made.

SUPERVISOR RESPONSIBILITIES

- Establishing and maintaining safe and healthful working conditions
- Be familiar with rigging safety and health hazards to which their employees are exposed, how to recognize them, the potential effects these hazards have on the employees, and rules, procedures and work practices for controlling exposure to those hazards
- Setting good examples, instructing their employees, making sure they fully understand and follow safe procedures

EMPLOYEE RESPONSIBILITIES

- No employee is expected to undertake a job until he/she has received instructions on how to do it properly and safely, and is authorized to perform the job
- No employees should undertake a job that appears to be unsafe
- Mechanical safeguards must always be in place and kept in place
- Employees are to report to a superior or designated individual all unsafe conditions encountered during work
- Personal protective equipment must be used when and where required, and properly maintained

TRAINING

Corporate EH&S Manager Mike Dahl will ensure every affected employee is provided training on sling inspection, care, and use. This training will be provided at no cost to the employee during working hours.

Solomon Corporation will use training material that is appropriate in content and vocabulary to the educational level, literacy, and language of employees.

PROCEDURES

INSPECTIONS

Each day before use, the sling and all fastenings and attachments must be inspected for damage or defects by a qualified person. Additional inspections will be performed during sling use, where service conditions warrant. Damaged or defective slings shall be immediately removed from service.

DEFECTIVE HOIST OR SLING HOOKS AND RINGS

- Deformed or defective hooks or rings must not be used
- Deformed hooks or rings must be replaced or repaired and reshaped under proper metallurgical control and proof tested
- Annealing or normalizing will be done only in accordance with the chain manufacturer's specifications
- Hooks and shackles will be used in accordance with manufacturer's recommendations
- All hooks that have no applicable manufacturer's recommendations available must be tested to twice the intended safe working load before they are initially put into use. The company will maintain and keep readily available a certification record which includes the date of the test, the signature of the person who performed the test, and an identifier of the hook which was tested
- Special custom design grabs, hooks, clamps, or other lifting accessories for such units as modular panels, prefabricated structures and similar materials, shall be marked to indicate the safe working loads and shall be proof-tested to 125 percent of the rated load prior to use

- Shackles. Employers must ensure that shackles:
  - Have permanently affixed and legible identification markings as prescribed by the manufacturer that indicate the recommended safe working load
  - Not be loaded in excess of its recommended safe working load as prescribed on the identification markings by the manufacturer
  - Not be used without affixed and legible identification markings

SAFE OPERATING PRACTICES

Whenever any sling is used, the following practices will be followed:

- Slings that are damaged or defective shall not be used
- Chain or wire rope slings shall not be shortened with knots or bolts or other makeshift devices. Slings shall not be kinked, or knotted
- Slings shall not be loaded in excess of their rated capacities as prescribed by the sling manufacturer on the identification markings permanently affixed to the sling
- Slings used in a basket hitch shall have the loads balanced to prevent slippage
- Slings shall be set to avoid slippage
- Slings shall be padded or protected from the sharp edges of their loads
- Suspended loads shall be kept clear of all obstructions
- All employees shall be kept clear of loads about to be lifted and of suspended loads. Operations shall be conducted and the job controlled in a manner that will avoid exposure of employees to the hazard of overhead loads. Wherever loads must be passed directly over workers, occupied work spaces or occupied passageways, safety type hooks or equivalent means of preventing the loads from becoming disengaged shall be used
- Hands or fingers shall not be placed between the sling and its load while the sling is being tightened around the load. Shock loading is prohibited
- Tables S-1 and S-2 will be used to determine the maximum safe working loads of various sizes of wrought iron and alloy steel chains and chain slings, except that higher safe working loads are permissible when recommended by the manufacturer for specific, identifiable products. Proof coil steel chain, also known as common or hardware chain, or other chain not recommended for slinging or hoisting by the manufacturer, shall not be used for hoisting purposes
- Wrought iron chains in constant use shall be annealed or normalized at intervals not exceeding 6 months when recommended by the manufacturer. The chain manufacturer shall be consulted for recommended procedures for annealing or normalizing. Alloy chains shall not be annealed
- Employers shall not use slings without affixed and legible identification markings

POLICY

Solomon Corporation has adopted this policy to ensure the safety of personnel who use trenching, shoring and excavations in the performance of work.

- References
- §1541 – General Requirements: Trenching, shoring and excavations
- §3203 – Injury & Illness Prevention Program
- California Labor Code 6500

RESPONSIBILITIES

EMPLOYER RESPONSIBILITIES

Solomon Corporation will apply for a permit from the Department of Occupational Safety and Health for planned construction of trenches or excavations that are five feet or deeper and into which a person is required to descend. The application form may be found at: https://www.dir.ca.gov/doshpol/forms/cosh41-1.pdf

SOLOMON CORPORATION RESPONSIBILITIES

- Ensuring that safety inspections of the scaffolds occur on regular basis
- Training personnel in how to perform a job hazard analysis
- Responding quickly to eliminate workplace hazards
- Ensuring all equipment is kept in good repair
- Ensuring employees follow safe job procedures
- Reviewing job hazard analysis whenever there is a significant change to any element of the job or there has been an injury or illness

Corporate EH&S Manager Mike Dahl is the Competent Person for Solomon Corporation in authority over all excavation operations. *Corporate EH&S Manager Mike Dahl* will ensure that all safety measures are in place and correctly installed, all safety procedures are adhered to, and make regular inspections of excavations, trenches, and the general work site.

SUPERVISOR RESPONSIBILITIES

- Establishing and maintaining safe and healthful working conditions
- Being familiar with excavation safety and health hazards to which their employees are exposed, how to recognize them, the potential effects these hazards have on the employees, and rules, procedures and work practices for controlling exposure to those hazards
- Setting good examples, instructing their employees, making sure they fully understand and follow safe procedures

EMPLOYEE RESPONSIBILITIES

- No employee is expected to undertake a job until he/she has received instructions on how to do it properly and safely, and is authorized to perform the job
- No employees should undertake a job that appears to be unsafe
- Mechanical safeguards must always be kept in place
- Report all unsafe conditions encountered during work
- Personal Protective Equipment (PPE) must be used when and where required, and properly maintained

TRAINING

Employees exposed to excavation hazards will be trained in the excavator notification and excavation practices.

Corporate EH&S Manager Mike Dahl will retrain each such employee so that the requisite proficiency is regained. Retraining is required in at least the following situations: where changes at the worksite present a hazard about which an employee has not been previously trained; where inadequacies in an affected employee's work involving excavations indicate that the employee has not retained the requisite proficiency.

The employer will document that each employee has received the training. This documentation will be made when the employee demonstrates proficiency in the work practices involved and will be maintained for the duration of the employee’s employment. The documentation will contain the content of the training, each employee’s name, and dates of training.

PROCEDURES

- In order to locate underground installations that may be reasonably be encountered like sewer, telephone, fuel, electric, and water lines, Solomon Corporation requires utility companies are contacted before excavation
- In trench excavations that are four feet or more deep, safe access and egress will not exceed 25 feet of lateral travel. Solomon Corporation requires a stairway, ladder ramp or other safe means of access or egress to be at least every 25 feet
- Employees exposed to public vehicle traffic will be provided with, and be required to wear, warning vests or other suitable garments marked with or made of reflectorized or high-visibility material.
- Employees of Solomon Corporation entering bell-bottom pier holes, or other similar deep and confined footing excavations, will wear a harness with a securely attached lifeline. The lifeline will be separate from any line used to handle materials, and individually attended the entire time the employee wearing it is in the excavation
- Solomon Corporation will provide walkways with standard guardrails where employees or equipment are required or permitted to cross over excavations over six feet deep and 30 inches wide

COMPETENT PERSON INSPECTIONS

Solomon Corporation requires a competent person to conduct daily inspections for evidence of a situation that could result in possible cave-ins, indications of failure of protective systems, hazardous atmospheres or other hazardous situations of:

- Excavations
- Adjacent areas
- Protective systems

A competent person needs to conduct inspections prior to start of work, as needed throughout the shift and after every rain storm or other hazard increasing occurrence when employee exposure can be reasonably anticipated.

Where the competent person finds evidence of a situation that could result in a possible cave-in, indications of failure of protective systems, hazardous atmospheres, or other hazardous conditions, exposed employees will be removed from the hazardous area until the necessary precautions have been taken to ensure their safety.

SURFACE HAZARDS

- Solomon Corporation will have all surface encumbrances such as trees, boulders, rock fragments, or other obstructions that could cause injury to an employee will be removed or supported
- Spoil piles and other material will be stored and/or retained using a retaining device sufficient to prevent materials or equipment from falling into excavation not less than 2 feet from the excavation edge
- No employee will be permitted underneath loads handled by lifting or digging equipment. Employees will be required to stand away from any vehicle being loaded or unloaded to avoid being struck by any spillage or falling materials
- When mobile equipment is operated adjacent to an excavation, or to approach the edge of an excavation, and the operator’s clear and direct view of the excavation edge is obstructed Solomon Corporation requires a following warning system: barricades, hand or mechanical signals, or stop logs
- Solomon Corporation will use support systems such as shoring, bracing or underpinning to ensure the stability of structures such as adjoining buildings, walls, or other structures endangered by the excavation

HAZARDOUS ATMOSPHERES

To prevent exposure to harmful levels of atmospheric contaminants and to assure acceptable breathing conditions, all of the following requirements will apply:

- Where an oxygen deficiency (an atmosphere that contains less than 19.5% oxygen) or a hazardous atmosphere exists, such as in excavations in areas where hazardous substances are stored nearby, the atmosphere in the excavation will be tested before employees enter excavations that are more than 4 feet deep
- Precautions will be taken to prevent employee exposure to atmospheres that contain less than 19.5% oxygen and any other hazardous atmosphere. These precautions include providing regulation respiratory protection or ventilation
- Precautions will be taken, such as providing ventilation, to prevent employee exposure to an atmosphere that contains a concentration of a flammable gas in excess of 20% of the lower flammable limit of the gas
- When using controls intending to reduce levels of atmospheric contaminants to acceptable Permissible Exposure Limit PEL, testing will be conducted as often as necessary to ensure that breathing air remains safe
- Emergency rescue equipment, such as breathing apparatus, safety harness and line, or a basket stretcher, will be readily available where hazardous atmospheric conditions exist or could develop during work in an excavation. This equipment will be attended when in use
- Employees entering bell-bottom pier holes, or other similar deep and confined footing excavations, will wear a harness with a lifeline securely attached to it. The lifeline will be separate from any line used to handle materials, and will be individually attended at all times while employee wearing it is in the excavation
- Solomon Corporation requires a ventilation system whenever internal combustion engine-driven equipment is operated inside an excavation or shaft

GENERAL CLASSIFICATION OF SOIL AND ROCK DEPOSITS

- Each soil and rock deposit will be classified by a competent person as Stable Rock, Type A, Type B, or Type C in accordance with OSHA definitions
- The classification of the deposits will be made based on the results of at least one visual and at least one manual analysis. Such analyses will be conducted by a competent person using approved methods of soil classification and testing
- The visual and manual analyses will be designed and conducted to provide sufficient quantitative and qualitative information as may be necessary to identify properly the properties, factors, and conditions affecting the classification of the deposits
- Layered systems will be classified according to its weakest layer. However, each layer may be classified individually where a more stable layer lies under a less stable layer
- If after classifying a deposit, the properties, factors, or conditions affecting its classification change in any way, the changes will be evaluated by a competent person. The deposit will be reclassified as necessary to reflect the changed circumstances

STABILITY OF ADJACENT STRUCTURES

Where the stability of adjoining buildings, walls, or other structures is endangered by excavation operations, support systems such as shoring, bracing, or underpinning will be provided to ensure the stability of such structures for the protection of employees.

Sidewalks, pavements, and appurtenant structure will not be undermined unless a support system or another method of protection is provided to protect employees from the possible collapse of such structures.

Excavation below the level of the base or footing of any foundation or retaining wall that could be reasonably expected to pose a hazard to employees will not be permitted except when:

- A support system, such as underpinning, is provided to ensure the safety of employees and the stability of the structure
- The excavation is in stable rock
- A registered professional engineer has approved the determination that such excavation work will not pose a hazard to employees

POLICY

Solomon Corporation has adopted this policy to inform employees of the written Compressed Gas Cylinder Procedures. This ensures the safety and health of the employees.

REFERENCES

- §1910.101 – Compressed Gas Hazards

RESPONSIBILITIES

Compressed gas safety is a responsibility shared between the Company and its employees.

EMPLOYER RESPONSIBILITIES

Solomon Corporation is responsible for:

- Ensuring compressed gas equipment and storage area safety inspections of the facility occur on regular basis
- Training personnel in how to safely handle cylinders and associated equipment
- Responding quickly to eliminate workplace hazards
- Ensuring all equipment is kept in good repair
- Ensuring employees follow safe job procedures
- Reviewing job hazard analysis whenever there is a significant change to any element of the job or there has been an injury or illness

SAFETY COMMITTEE RESPONSIBILITIES

It is the responsibility of the safety committee to:

- Assist in compressed gas equipment and storage inspections as necessary
- Assist in training employees to recognize and control compressed gas hazards
- Monitor the workplace for hazards
- Encourage employees to report hazards
- Implement appropriate controls
- Ensure corrective action is taken promptly

EMPLOYEE RESPONSIBILITIES

All employees are expected to:

- Inspect compressed gas cylinders and equipment before each use
- Follow safe job procedures
- Report hazards to a supervisor immediately

TRAINING

All employees that handle compressed-gas cylinders must have adequate training. This training must include: identification; proper use of cylinders; proper storage and storage areas; proper handling; hoses and connections; inspection; proper use of regulators and tools; transportation; empty cylinders; engineering controls.

DEFINITIONS

Compressed-gas cylinder: A cylinder designed to contain gases under pressure of greater than one atmosphere and having a mechanism to safely control the flow of gas.

Manifold: A gas distribution system which transfers the substance through outlets to compressed gas containers.

Regulator: A device used to prevent the pressure from rising above a maximum value and therefore preventing a potential rupture that could occur if the tank was subjected to heat.

Valve protection cap: A rigid, removable cover provided for container valve protection during handling, transportation and storage of compressed-gas cylinders.

PROCEDURES

IDENTIFICATION

Solomon Corporation requires all compressed gas cylinder contents be clearly identifiable.

- The contents of any compressed gas cylinder should be identified clearly so as to be easily, quickly, and completely determined by any worker
- Gas identification should be stencilled or stamped on the cylinder or a label
- No compressed gas cylinder should be accepted for use that does not identify its contents legibly by name
- Color-coding is not a reliable means of identification; cylinder colors vary from supplier to supplier, and labels on caps have no value because many caps are interchangeable
- Tags should be attached to the gas cylinders on which the names of the users and dates of use can be entered
- If the labeling on the gas cylinder becomes unclear or defaced so that the contents cannot be identified, the cylinder should be marked "contents”

TRANSPORTATION

- Valve-protection caps must be i secured when: transported, moved or stored
- When hoists are used to move cylinders, the cylinders must be secured on a cradle, slingboard or pallet. They must never be moved using magnets or choker slings
- Cylinders shall always be moved by tilting and rolling them on their bottom edges. They shall never be dropped, struck or allowed to hit other tanks. When moving cylinders with powered vehicles, they must be secured and in an upright position
- Do not lift or move cylinders by their valve-protection caps. Pry bars shall never be used to remove cylinders when they are frozen. Warm water shall be used for this purpose
- Regulators must be removed before a cylinder is moved to another location, unless a specially designed carrier is used

INSPECTION

- All compressed gas cylinders under Solomon Corporation control will be visually checked to determine they are in safe condition
- All compressed gas cylinders regularly inspected for corrosion, pitting, cuts, gouges, digs, bulges, neck defects and general distortion
- Ensure that there is no tampering with the safety relief device in the valve or cylinder or any attempt to repair or alter the cylinder, valve or safety relief device
- Ensure cylinder valves are closed at all times, except when the valve is in use
- Visual and other inspections shall be conducted according to the Hazardous Materials Regulations of the Department of Transportation (49 CFR Parts 171-179 and 14 CFR Part 103). Where those regulations are not applicable, inspections shall be conducted in accordance with Compressed Gas Association Pamphlets C-6-1968 and C-8-1962

PROPER USE OF CYLINDERS

- Cylinders shall not be used as rollers or supports
- Cylinders shall not be placed where they can come in contact with electrical circuits
- Cylinders must be protected from sparks, slag or flame from welding, burning or cutting
- Empty cylinders that are no longer need must be marked “MT” and returned to designated storage areas for empty cylinders with valves closed and caps replaced as soon as possible
- Regulators must be removed before a cylinder is moved to another location, unless a specially designed carrier is used
- Cylinders shall be restrained with chains or other similar devices to prevent tipping over
- Tanks shall be vertical when in use and they shall never be put in an area where they may be exposed to open flames, hot metal or other sources of artificial heat
- Acetylene and other types of fuel gas shall never be brought into confined spaces
- Gases may not be mixed for any reason
- If cylinders are damaged or defective they must not be used and the tanks must be returned to the supplier

CYLINDER VALVES

- Cylinder valves must be closed when work is finished, when the cylinder is empty, and when the cylinder is being transported from one location to another
- Cracking the cylinder. Before a regulator is connected to a valve, the valve must be opened slightly and closed immediately. This action clears the valve of any particles that may enter into the regulator. When opening a valve, the employee must stand to the side of the valve, never in front of it. Never crack a valve near an open flame or other potential sources of ignition
- Cylinder valves must always be opened slowly to eliminate damage to the regulator. A valve shall never be opened more than 1 ½ turns. When special wrenches are used to turn gas on, they must remain on the stem so that the gas may be turned off quickly
- It is never permitted to use fuel gas from cylinders through torches or other devices that have shut-off valves without reducing the pressure through an appropriate regulator which is attached to the cylinder valve or manifold
- Before removing a regulator from a cylinder valve, the valve must be closed and the gas released from the regulator
- For leaks around the valve stem, the valve must be closed and the gland nut tightened. If the leak continues, the cylinder must not be used. It shall be tagged as damaged and removed from the work area. If a leak is found in the cylinder valve and it is impossible to shut off the gas, the cylinder shall also be tagged and removed from the area. Cylinders do not have to be removed from the work area if leaks can be stopped
- When a leak is found at a fuse plug or other safety device, the cylinder must be promptly removed from the work area

PROPER USE OF REGULATORS AND TOOLS

- To ensure the proper use of regulators, all cylinders must have the correct regulators
- Regulators and cylinders valves will be inspected for grease, oil dirt and solvents
- Only tools provided by the supplier should be used to open and close cylinders valves

MANIFOLDS

- Manifolds used for fuel gas and oxygen must be labeled with the type of gas they are used for. The letters must be at least 1 inch high and must be painted on the manifold or on an attached sign
- Manifolds shall never be placed in an enclosed space. They must be located in a safe, well-ventilated and accessible area
- Manifold hose connections shall be constructed so that they may not be interchanged between the fuel gas and oxygen manifolds and supply header connections. Adapters are not permitted to be used to allow the interchange of hose. In addition, hose connections must be kept free of grease and oil
- Manifold and header hose connections must be capped when they are not in use
- Nothing shall be placed on top of the manifold during use, which may damage it or interfere with closing the valves

HOSES

- Hose which is used for oxygen must be clearly distinguished between hose used for fuel gas and hoses shall never be used interchangeably. A single hose with multiple passages may not be used
- If tape is used to secure oxygen and fuel gas hoses, not more than 4 inches out of one foot shall be covered by tape
- All hoses must be inspected before use and defective ones replaced before they are used
- If a flash back has occurred in a hose or a hose has had significant wear or damage, it must be replaced before the equipment can be used
- Hose connections shall not be designed so that they can be disconnected without a rotary motion
- When gas hose is stored, the boxes shall be ventilated
- Hoses, cables and other equipment shall be kept clear of passageways, ladders and stairs

PROPER STORAGE

To ensure the proper storage of cylinders:

- Protect cylinder valves with their cap when they are stored or transported
- Cylinders must be secured at all times in such a way as to avoid them being knocked over or damaged
- Cylinders must be stored in a vertical position, not stored in hallways
- Cylinders must be segregated based upon the contents
- 20 feet should be maintained between oxidizers and flammables or firewalls erected at least 5 feet high and have a fire rating of 30 minutes
- Cylinders must be protected from damage, corrosion, sunlight, and be kept away from heat sources
- Cylinders should be capped when they are not being used
- Solomon Corporation ensures cylinders will be stored in well ventilated areas
- Inside of buildings, cylinders shall be stored in a well-protected, well-ventilated, dry location
- Cylinders will not be kept in unventilated enclosures such as lockers and cupboards
- Full and empty cylinders are to be stored separately from each other in different and clearly labeled areas

STORAGE AREAS

- The storage areas for full and empty cylinders must be designated and labeled
- Cylinders should be stored in definitely assigned places, away from elevators, stairs, or gangways

VALVE PROTECTION CAPS

- Cylinder valves will be protected with the cover cap screwed on hand tight whenever the cylinder is not in use and stored or transported
- The cap is just to protect the valves from damage, and cylinders are not to be lifted or moved by the cap
- The cap can be removed after the cylinder is secured in place and ready to be used
- Cylinders and caps will be protected from exposure to damp conditions (e.g. humidity, steam, dew), and corrosive materials (e.g. salt) or fumes because they could make the caps stick
- Caps should be removed by hand. Only an adjustable strap wrench can be used to remove stuck caps. If the cap is still difficult to remove, a tag will be attached to it with the problem and directions to return the cylinder to the supplier
- Do not stick any kind of tool into the cylinder cap holes to pry the cap open

POLICY

This confined spaces policy is designed to ensure the safety and health of Solomon Corporation's employees by limiting exposure to the hazards present while working in construction, in and around confined spaces. There are new components in the Confined Spaces in Construction regulations that reflect different challenges present at a construction worksite to include: higher employee turnover, changing worksites, and multiple contractors (controlling and subcontractors).

Except where another policy states otherwise, this written confined space policy will be followed whenever and wherever the company's employees could enter or be exposed to confined space hazards for all construction work including modifications and upgrades. This program will be available to any employee and their representative at any time.

RESPONSIBILITIES

Confined space safety is a responsibility shared between the Company and its employees.

EMPLOYER RESPONSIBILITIES

- Involve affected employees on this policy, ensuring they are educated on the elements of confined space safety and trained in worksite specific procedures.
- Seek employee input during an annual review of this policy.
- Provide all necessary information to ensure employees work safely in and around confined spaces.
- Determine that employees can proficiently perform their assigned duties.
- Document training and keep training records for all current employees.
- Keep cancelled permits until an annual review can be conducted.
- Provide all documents to the Secretary of Labor upon request.
- Reevaluate confined spaces whenever an employee requests it.

EMPLOYEE RESPONSIBILITIES

- Follow all OSHA rules and regulations.
- Follow established safe work policy and procedures.
- Participate in all required training.
- Be aware of potential hazards and request a reevaluate when a new hazard is suspected.

STANDARDS AND REGULATIONS

- Subpart AA — Confined Spaces in Construction 29 CFR 1926.1201 - 1213
- Federal OSHA General Duty Clause, Section 5(a)(1)

DEFINITIONS

Attendant means an individual stationed outside one or more permit spaces who assesses the status of authorized entrants and who must perform the duties specified in § 1926.1209.

Authorized entrant means an employee who is authorized by the entry supervisor to enter a permit space.

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

Confined space means a space that: 1. Is large enough and so configured that an employee can bodily enter it; 2. Has limited or restricted means for entry and exit; and 3. Is not designed for continuous employee occupancy.

Controlling Contractor is the employer that has overall responsibility for construction at the worksite.

Entry means the action by which any part of a person passes through an opening into a permit-required confined space. Entry includes ensuing work activities in that space and is considered to have occurred as soon as any part of the entrant's body breaks the plane of an opening into the space, whether or not such action is intentional or any work activities are actually performed in the space.

Entry Employer means any employer who decides that an employee it directs will enter a permit space.

Entry supervisor means the qualified person (such as the employer, foreman, or crew chief) responsible for determining if acceptable entry conditions are present at a permit space where entry is planned, for authorizing entry and overseeing entry operations, and for terminating entry as required by this standard.

Host employer means the employer that owns or manages the property where the construction work is taking place.

Permit-required confined space (permit space) means a confined space that has one or more of the following characteristics: 1. Contains or has a potential to contain a hazardous atmosphere; 2. Contains a material that has the potential for engulfing an entrant; 3. Has an internal configuration such that an entrant could be trapped or asphyxiated by inwardly converging walls or by a floor which slopes downward and tapers to a smaller cross section; or 4. Contains any other recognized serious safety or health hazard.

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

Test or testing means the process by which the hazards that may confront entrants of a permit space are identified and evaluated. Testing includes specifying the tests that are to be performed in the permit space.

Ventilate or ventilation means controlling a hazardous atmosphere using continuous forced-air mechanical systems that meet the requirements of § 1926.57 (Ventilation).

IDENTIFYING CONFINED SPACES AND HAZARDS

A confined space is an area a worker can enter, but isn't designed for continuous occupancy and doesn't have an unrestricted entry or exit. A permit required confined space (PRCS) has a serious health or safety hazard, such as the possibility for a hazardous atmosphere, material that can engulf a person, or is in a shape that can trap or asphyxiate a person (e.g. converging or sloping walls or floor).

To help provide an understanding for determinations OSHA has provided a limited list of work sites that could have a confined space: bins, boilers, pits, elevators, escalators, pumps, manholes, and tanks (containers).

The company will ensure that a competent person will identify all confined spaces an employee might work in, before the work begins, and determine which requires permits. Employees and the controlling contractor will be informed directly of the location and danger in each permit space. Signs that effectively warn of the danger and prohibit entry will be placed at permit space entrances.

Each entry employer will have a competent person evaluate non-permit spaces initially and when there are changes to the use or configuration that might increase entrant hazards to decide whether to reclassify it.

Work will be scheduled as much as reasonably possible to avoid confined spaces by finishing tasks in areas before they become confined spaces.

COMMUNICATING BETWEEN EMPLOYERS

As the host employer, all details (e.g. entry employer's entry program, known hazards, new hazards, and hazard elimination/isolation procedures) about confined spaces at the worksite will be communicated with the controlling contractor before and after entry. Where the company has contracted with the property owner to manage it and transmit all confined space details, it will be considered the host employer.

As the controlling contractor, all details (e.g. employer's entry program, location of confined spaces and PRCS, known hazards, new hazards, and hazard elimination/isolation procedures) will be communicated with the host employer and all entry employers (i.e. subcontractors) before and after entry, ensuring that information is transferred to the different entry employers (e.g. posting signs) before and during entry so they don't create additional hazards for other entry employers' workers. Details will be communicated with other non-entry employers so that their workers do not create hazards or go into the confined space.

As the entry employer, all details (e.g. entry program, known hazards, new hazards, and hazard elimination/isolation procedures) about confined spaces at the worksite will be communicated with the controlling contractor before and after entry.

As a non-entry employer, essential details about confined spaces will be communicated with the controlling contractor to determine where the confined spaces are and the necessary steps to prevent employees from accessing them or creating hazards for other workers. Employees will be instructed to not enter the identified confined spaces.

CONFINED SPACES WITH ONLY ATMOSPHERIC HAZARDS

The following procedures and conditions are for entering a confined space with only atmospheric hazards that can be made safe to enter through forced air ventilation during entry.

To be more specific, all physical hazards have to be eliminated or isolated through engineering controls, and the forced air ventilation has to keep the space safe for entry, and entrants must be able to exit safely if ventilation stops working.

If the above can be proven and documented with monitoring and inspection where the data is available to each entrant, the space can be entered without a permit, attendant, or rescue and emergency equipment once the company certifies that:

- Entrance covers can be safely removed.
- Entrance openings are immediately guarded by a railing, temporary cover or barrier that prevents accidental falls into the opening and protects entrants from foreign objects falling into the space.
- The internal atmosphere is tested with a calibrated direct-reading instrument in the following order: oxygen content, flammable gases and vapors, and potential toxic air contaminants. The testing procedure is evaluated to ensure it is appropriate for the possible atmospheric hazards. This may mean identifying the possible toxic air contaminants and ensuring the gas detector can detect it, and testing at the top, middle, and bottom of the space to account for different gases' density.
- Testing and continuous monitoring ensures there is no hazardous atmosphere.
- Continuous forced air ventilation from a clean source directed — to the lowest spot or furthest corner — so that it eliminates any hazardous atmosphere from the space while anyone is in there.
- Continuously monitoring the atmosphere in the space with monitoring equipment, unless necessary monitoring equipment isn't commercially available, that will sound an alarm notifying all entrants if a hazard exceeds the atmospheric thresholds.
- Where the preferred continuous monitoring is not used because of equipment limitations, or that periodic monitoring is demonstrably sufficient, periodic monitoring will be often enough to detect a hazardous atmosphere is building up and that entrants have time to exit.
- Once a hazard is observed everyone will immediately leave the space. The hazard source is then found — and the company will take steps that protect employees before they enter that space again.
- There is a safe way to enter and exit the space, including a personnel hoist made for that purpose, or a job hoist approved ahead of time in writing by a registered professional engineer.

The written certificate must contain the date, location of the space and the signature of the person certifying the above conditions have been met. The certification must be made before anybody enters and be available to every employee entering the space. The employer will reevaluate the space if there is a change to the space that may increase hazards or there is indication the current evaluation is incorrect.

RECLASSIFYING PRCS FOR ENTRY

Permit required confined spaces without any potential atmospheric hazard can be reclassified as non-permit required once the entry employer certifies that:

- The hazards can be eliminated or isolated without entering the space.
- If the entry employer can show they have to enter the space to remove the hazard, then they can do that following the permit process.

The written certificate must contain how all the hazards have been eliminated or isolated, the date, location of the space, and the signature of the person certifying the above conditions have been met. The certification must be made before anybody enters and be available to every employee entering the space. If new hazards are identified everyone must leave the space, and the entry employer will reevaluate.

ENTRY EMPLOYER RESPONSIBILITIES

As an entry employer, the company will create and put into action the following measures to protect its and other employees both inside and outside confined spaces.

- Prevent unauthorized entry. Using covers, signs, or an attendant at the entrance etc.
- Ensure safe permit space entry operations.
- Provide the necessary equipment.
- Evaluate permit spaces during entry.
- Provide attendants outside permit spaces during entry.
- Describe how the attendant monitoring multiple spaces will respond to emergencies.
- Assign a role to every person in an entry, identify their duties and provide required training.
- Rescue and emergency services for PRCS.
- Entry permits.
- Coordinate entry operations.
- Review this policy annually and following any incidents or near misses.

SAFE PERMIT SPACE ENTRY OPERATIONS

A competent person will identify and evaluate permit space hazards before any employees enter it and establish all the elements to ensure safe work in the area, especially:

- Citing the acceptable entry conditions.
- Authorized entrants can observe space testing and monitoring.
- Isolating the space and its hazards.
- Controlling atmospheric hazards through purging, inerting, flushing, or ventilating.
- Reducing the atmosphere to below 10 percent of its Lower Flammable Limit (LFL) or inerting the atmosphere so that it is entirely non-combustible and addressing the other atmospheric hazards like oxygen deficiency through PPE.
- Ensuring monitoring procedures will detect atmospheric hazard level increases quickly enough for entrants to exit, in case ventilation stops working.
- Having necessary barriers to protect entrants from outside hazards, namely pedestrian and vehicle barriers.

- Conditions continue to allow safe entry the entire time.
- The necessary PPE effectively protects every employee, and that they have the PPE before entering a hazardous atmosphere.
- Conditions, like high pressure, that can make removing an entrance cover unsafe are eliminated.

EVALUATING PERMIT SPACE CONDITIONS

The entry employer will take the following steps to check out the PRCS when conducting entry.

Test the conditions in the PRCS before entering or making any additional ventilation if the atmosphere can be isolated. Oxygen will be tested first, followed by combustible gases and vapors, and finally toxic gases and vapors.

If it is part of a larger continuous system and can't be isolated, pre-entry testing will be done, and conditions will be continuously monitored unless necessary monitoring equipment isn't commercially available. Work in large or continuous systems also requires a sufficient early-warning system continuously monitoring for engulfment hazards.

Continuously monitoring the atmosphere in space with monitoring equipment, unless necessary monitoring equipment isn't commercially available, that will sound an alarm notifying all entrants if a hazard exceeds the atmospheric thresholds.

Authorized entrants will be allowed to observe the pre-entry and all other testing and monitoring, and the results will be posted with the permit at the entry to the confined space.

ENTRY PERMITS

Each entry employer will ensure conditions are safe for entry in permit spaces through establishing, suspending and cancelling entry permits. If there are multiple entry employers in a confined space during the same entry, then one permit will be completed by coordinating with the controlling contractor and all entry employers. The permit will be made available (e.g. posted at the entry) for all entry employers to document the completion of necessary safety measures.

Through completing an entry permit all measures needed to make the PRCS safe for entry will be documented. The entry supervisor on the permit will sign the entry permit authorizing that these necessary measures have been taken. The permit's duration will be the amount of time needed to complete the task as identified on the permit. Every entry permit will be kept for at least one year and addressed in the annual review. The entry supervisor will terminate the permit when the task identified is completed, suspended, or will cancel the permit when necessary.

A permit will be suspended when a temporary condition not allowed in the permit occurs in or near the PRCS and doesn't change its configuration or creates any new hazard. The entry supervisor needs to reevaluate the PRCS before lifting any suspension or cancelling the permit. A permit will be canceled when a condition not allowed in the permit occurs in or near the PRCS and isn't temporary or, changes its configuration or creates any new hazard.

ITEMS ON AN ENTRY PERMIT

In order to identify everything needed to make a permit safe for entry the following items will be addressed:

- The permit space's location.
- The reason for entry.
- Date and duration of the entry.
- Authorized entrants identified so the attendant can easily track who is inside the PRCS.
- How any hazardous atmospheric levels will be tracked should ventilation stop.
- The name of every attendant.
- The name of every entry supervisor and the signature of the one that authorized entry.
- Hazards in the PRCS.
- How the hazards will be isolated, eliminated or controlled before entry (e.g. lockout tagout, purging, inerting, ventilating, and flushing).
- Acceptable entry conditions.
- Results and times of appropriate testing and monitoring, including the names or initials of who did the test.
- Rescue and emergency services and how they will be called.
- How entrants and attendants will communicate during entry.
- The necessary equipment.
- Additional permits needed to complete the task in the confined space.

EQUIPMENT

As an entry employer, the company will provide suitable equipment needed to safely enter, exit from, and conduct rescues in confined spaces. The equipment will also be properly maintained and all employees will know how to and be expected to use it correctly. Any equipment must also meet the regulations specific to it. For example respiratory equipment must meet the respiratory regulations, 1926.103, and barriers are governed by the rules for guardrails, 1926.502(b). The following equipment is specifically mentioned by OSHA:

- Adequate testing and monitoring equipment.
- Ventilating equipment that makes entering possible.
- Communication equipment that allows attendant to talk to entrants, assess status, and tell them to evacuate.
- PPE that meets any other applicable regulations where engineering and administrative controls do not give enough protection.
- Lighting that meets construction's minimum illumination in foot-candles (1926.56), that won't ignite the specific gas, vapor, dust or fiber present, and that enables employees to work safely and exit during emergencies.
- Barriers and shields that effectively isolate the confined space.
- Ladders needed to enter and exit the confined space.
- Rescue and emergency equipment that is called for in the company's emergency rescue policy.

AUTHORIZED ENTRANTS

Authorized entrants will know and understand which potential hazards are in each confined space such as: how they could be exposed, signs, symptoms, and consequences.

Entrants are expected to properly use all equipment, communicate with attendant, and be ready to exit any permit space quickly.

Communication includes working with the attendant to instill awareness of personal health in light of the potential hazards. This awareness includes sharing information with the attendant about any symptoms, warning signs or prohibited conditions.

The entrant must exit permit spaces when: told to by the attendant or entry supervisor; there is an exposure warning sign or symptom; they detect a prohibited condition; or an evacuation alarm is activated.

ATTENDANT RESPONSIBILITIES

An attendant's primary responsibility is to evaluate and protect authorized entrants inside permit required confined spaces. These responsibilities include:

- Knowing the hazards of the confined space.
- Keeping track of authorized entrants.
- Remaining outside permit spaces during entry and communicating with entrants.
- Assessing the confined space conditions.
- Ordering necessary evacuations.
- Calling emergency services.
- Non-entry rescues.
- Keeping unauthorized entrants out.
- Focusing exclusively on primary responsibility.

Attendants will know and understand which potential hazards are in each confined space such as: how entrants could be exposed, signs, symptoms, and consequences. This includes knowing how the hazard could affect entrants' behavior.

Attendants will also continuously track authorized entrants in the permit space, and accurately document it on the permit.

An attendant must stay outside the permit space during an entry, even during emergencies regardless of whether entrants can escape, until relieved by another attendant. Once another attendant is on the scene, the attendant still can only try an entry rescue if they have the necessary equipment, are trained to do so, and the entry permit allows for it.

Communication includes working with the entrant to instill awareness of personal health in light of the potential hazards, the confined space conditions and when to evacuate.

The attendant is responsible for determining when a confined space is no longer safe and ordering entrants to evacuate whenever: there is a prohibited condition, the entrant is showing behavioral effects of exposure, something outside the confined space could be dangerous to entrants, or if the attendant can't focus on all required responsibilities.

As soon as the attendant assesses that entrants need help to evacuate the permit space, he/she will immediately call rescue and emergency services as described in the permit and start non-entry rescue established in the permit.

When an unauthorized person approaches a confined space, the attendant will tell he/she to exit immediately. The attendant will tell the entrants and supervisor there is an unauthorized person in the permit space.

Attendants will not be assigned or allowed to do any work that takes their attention away from their focus on the confined space and the safety of people inside and outside it. This means attendants can do tasks that add to their knowledge of permit space conditions, like monitoring atmospheric conditions or passing tools to entrants from outside the space. Although this knowledge can be part of the job description, tasks that do not require continued attention away from or leaving the permit-required confined space are not included. An attendant will not monitor more than one confined space at a time.

ENTRY SUPERVISOR RESPONSIBILITIES

For every permit-required confined space entry, the entry employer will assign an entry supervisor who has the ability to complete the following responsibilities:

- Knowing the hazards of the confined space.
- Verifying the permit is completed correctly.
- Ordering evacuation and cancelling or suspending the permit.
- Communicating with and verifying the availability of emergency and rescue services.
- Removing anyone unauthorized who tries to go into a permit space.
- Assessing the permit-confined space when taking over responsibility and periodically as needed.

Entry supervisors will know and understand which potential hazards are in each confined space such as: how entrants could be exposed, signs, symptoms, and consequences. The entry supervisor will be someone who knows at least as much as the authorized entrants and attendants, and should be someone who knows even more about the space and hazards.

Before signing it, the supervisor will check the completed permit to be sure everything identified in the permit is correct: tests completed, procedures followed, and equipment in place.

The entry supervisor is responsible for deciding when there are unsafe conditions for an ongoing permit entry, terminating the entry, and then cancelling or suspending a permit. A permit can be cancelled when the entry permit is completed or there is a new condition not addressed in the permit. The supervisor can also suspend a permit if a condition requires temporary evacuation, and the space soon returns to acceptable conditions in the permit. After reevaluating the permit space, the entry supervisor can remove the suspension but will record it on the permit.

The entry supervisor will check that needed emergency and rescue services are available, can be reached, and can themselves respond in a timely manner during the permit-required confined space entry.

The entry supervisor is responsible for preventing unauthorized entry into a permit space and immediately removing from the worksite any unauthorized person who has entered a permit space.

When taking over responsibility of a permit space entry, the new entry supervisor will check the confined space conditions to make sure they are within safe levels and consistent with the permit. The entry supervisor is also responsible for periodically assessing the hazards and work within a confined space as often determined necessary according to the nature of the possible hazards and expected change of conditions.

TRAINING

Each employee will be trained in a vocabulary and language they understand so that they are proficient in their expected responsibilities. This training will occur:

- Before they are assigned duties covered in this policy.
- Before a change in assigned duties.
- When a change in permit space operations (e.g. new equipment, techniques, promotions, reassignments) introduces a new hazard the employee hasn't trained for.
- When a departure from, or a lack of knowledge in the established procedures is noticed.

Assigned duties include: authorized entrant, attendant, entry supervisor, and emergency rescue. Employees not authorized to enter confined spaces will also be trained on the hazards of the confined spaces at the worksite, and what they need to know to avoid them.

The company will determine that training has effectively taught the employee to proficiently perform their assigned duties.

The training and determination of proficiency will be documented and kept for all current employees. This documentation will be available to all employees who ask for it, and the Secretary of Labor upon request.

RESCUE AND EMERGENCY SERVICES FOR PRCS

Rescue and emergency service procedures are a necessary component of the permit and include the preferred non-entry and entry rescues. The non-entry can be initiated immediately by the attendant and entry supervisor who remains outside the PRCS. Entry rescues need to be either from a designated outside source or a team of selected employees, and each has their own requirements. Unauthorized personnel shall not attempt a rescue.

Any injured entrant that is exposed to a hazardous substance at the worksite will bring the associated Safety Data Sheet (SDS) and provide it to the facility where the medical treatment takes place.

Any injured entrant that is exposed to a substance with a Safety Data Sheet (SDS) at the worksite will be given to the medical facility where he is treated.

NON-ENTRY RESCUE

The company will establish non-entry rescue procedures for all permit-required confined spaces, unless it can demonstrate that the necessary retrieval equipment (e.g. body harness, retrieval lines, block and tackle, winch system) increases the risk or does not help rescue.

Non-entry retrieval systems will include a chest or full body harness with the retrieval line at the center of the back where it creates a small profile to successfully remove the entrant. This can be at the shoulder level or above the entrant's head. When the chest or body harness won't work or creates a greater hazard, wristlets or anklets may be used.

The line will be attached outside the permit space so that it can be used to pull entrants out as soon as they need to be rescued. This can either be a mechanical device like a block and tackle or winch system, or a fixed point. Vertical entrances more than five feet deep call for a mechanical device to assist rescue.

Circumstances described by OSHA that increase risk of or hamper rescue include anything that can catch onto or entangle the retrieval line like: physical obstructions, airlines, electric cords, and additional retrieval lines from multiple entrants. The distance entrants have to go into the space and how much they will have to move around can also affect the decision that a retrieval system is too dangerous.

OUTSIDE RESCUE AND EMERGENCY SERVICES

Outside rescue and emergency services will be evaluated to ensure they can respond quickly, and have both the equipment and ability to provide rescue when considering each PRCS and the identified hazards.

The company will provide hazard information about its confined spaces and allow the service to go to the PRCS and develop rescue plans. The service selected must have the training, equipment, ability, and willingness to perform rescues. The service also has to agree to tell the company when it will be unable to perform rescues.

The time it takes the service to reach the permit space, enter and retrieve entrants will also be considered, along with the rescue requirements of other regulations. In particular, if the PRCS could have an atmosphere that is immediately dangerous to life or health (IDLH), the respiratory protection standard requires standby rescue personnel equipped with respiratory protection. A response time of 15 minutes may be determined adequate for mechanical hazards that could cause broken bones or abrasions.

EMPLOYEE RESCUE AND EMERGENCY SERVICES

When selecting a team of employees to provide rescue and emergency services, they will: have the necessary equipment and PPE; be trained to be proficient as entrants and rescuers, correct PPE use, basic first aid and cardiopulmonary resuscitation (CPR); and practice attempting the type of rescue needed at least once every 12 months. At least one member of the rescue team will have current basic first aid and CPR certifications.

If a rescue operation is correctly performed in the last 12 months, then practice is not necessary.

REVIEW

This policy will be reviewed annually and when measures may not protect employees, such as after any incidents or near misses. Any deficiencies will be corrected before entering any additional PRCS.

Some examples of situations that may require a review are:

- An unauthorized person enters a PRCS.
- A new hazard not covered by the permit is detected in a PRCS.
- A new condition prohibited by the permit is detected in a PRCS.
- An injury takes place during entry.
- A change in the PRCS configuration or use.
- An employee issues a complaint.

The annual review will ensure that all cancelled permits are included in the review within one year after entry. This review will evaluate the policy's effectiveness of providing protection to all affected employees.

FORMS AND ATTACHMENTS

Evaluate the documents on the following pages along with their source material from the General Industry Regulation's appendixes, and consider using them to implement and maintain your safety program.

- Confined-Space Entry Permit
- Confined Space Entry Training Record Sheet
- Initial Evaluation of Confined Space Rescue Plans
- Evaluation of Confined Space Rescue Program
- Planning Confined Space Rescue Drills

Confined Spaces Entry Permit (1 of 2)

GENERAL INFORMATION

Permit Space Location: _____
Purpose of Entry: _____
Date: _____ Date:_____
Entry Permit
Valid For Time: _____ to Time: _

PERMIT SPACE HAZARDS

		Y	N
ATMOSPHERIC	Oxygen Deficient	☐	☐
	Oxygen Enriched	☐	☐
	Explosive (Gas/Vapor)	☐	☐
	Explosive Dust	☐	☐
	Carbon Monoxide	☐	☐
	Hydrogen Sulfide	☐	☐
	Other Toxic Vapors	☐	☐
ENGULFMENT		☐	☐
CONFIGURATION (ENTRAPMENT)		☐	☐
MECHANICAL		☐	☐
ELECTRICAL		☐	☐
SUBSTANCE HAZARDOUS TO SKIN/ EYES		☐	☐
HEAT STRESS		☐	☐
OTHER POTENTIAL HAZARDS (radiation, noise, etc.; list)		☐	☐
		☐	☐
		☐	☐

PERSONNEL

Entrant(s):	Time In:	Time Out:

Attendant(s):

Entry Supervisor(s):

COMMUNICATION PROCEDURES

☐ Visual ☐ Voice ☐ Rope ☐ Radio

☐ Other_____

CONTROLS & EQUIPMENT

☐ ISOLATION
- ☐ Lockout/Tagout
- ☐ Blanking/Blinding
- ☐ Double Block & Bleed
- ☐ Line Breaking/Misalignment
- ☐ Other: _____

☐ INERTING
☐ PURGE/CLEAN
☐ METHOD FOR SAFE COVER REMOVAL & SECURING AREA

☐ ATMOSPHERIC TESTING
- ☐ Periodic (give interval) _____
- ☐ Continuous

☐ VENTILATION
- ☐ Natural
- ☐ Continuous Forced Air
- ☐ Local Exhaust

☐ ENTRY EQUIPMENT
- ☐ Ladders
- ☐ Other: _____

☐ PERSONAL PROTECTIVE EQUIPMENT
- ☐ Respiratory (SCBA, SAR, air purifying)
- ☐ Clothing
- ☐ Eye & Face Protection
- ☐ Hearing Protection

☐ RESCUE & RETRIEVAL EQUIPMENT
- ☐ Full Body Harness
- ☐ Lifeline
- ☐ Tripod w/Mechanical Wench
- ☐ Explosion-Proof Lighting

☐ NON-SPARKING TOOLS
☐ SAFE ELECTRICAL EQUIPMENT & GFCI

☐ COMMUNICATION EQUIPMENT
- ☐ Radio
- ☐ Phone
- ☐ Other:_____

☐ HOT WORK PERMIT
☐ FIRE EXTINGUISHERS

Confined Spaces Entry Permit (2 of 2)

RESCUE AND EMERGENCY SERVICES		RESCUE PROCEDURES
Name:	Phone:	
Name:	Phone:	
Summoning Procedure:		

ATMOSPHERIC TESTING RECORD

Condition	Acceptable Level	Record continuous monitoring results every 2 hours							
OXYGEN	19.5% - 23%								
EXPLOSIVE (GAS/VAPOR)	<10% LFL								
EXPLOSIVE DUST	<LFL (5ft. Visibility)								
CARBON MONOXIDE	50 ppm								
HYDROGEN SULFIDE	10 ppm								
OTHER HAZARDS (specify)									
NAME(S) OF TESTER(S)									

TESTING EQUIPMENT: Type:_____ Serial #:_____ Type:_____ Serial #:_____

ENTRY AUTHORIZATION

ENTRY AUTHORIZED BY:

Signature: _____ Time:_____ Date:_____

ENTRY SUSPENSION

ENTRY SUSPENDED BY:

Signature: _____ Time:_____ Date:_____

Resumed after reevaluation: _____ Time:_____ Date:_____

Description: _____

ENTRY CANCELLATION

ENTRY CANCELLED BY:

Name: _____ Time: _____

Signature:_____ Date:_____

REASON FOR CANCELLATION:

☐ Entry Operations Completed

☐ Prohibited Condition Arose

Problems encountered: _____

Rescue & Emergency Services									
Name	Rescue Duties	Rescue Equipment & PPE Authorized For Use	Training: First Aid	Training: CPR	Certified (Y/N)	Rescue Practice Date	Rescue Practice Session Description	Name of Trainer	Date of Training

Trainer (*include qualifications)***:**
Date:
Content of Training:

Attendees

Print Name	Signature

INITIAL EVALUATION OF CONFINED SPACE RESCUE PLANS

Use this worksheet to determine if a permit-required confined space rescue plan is sufficient. This plan could be a response team of employees trained by the employer or calling 911. Both must pass muster. Answering “no” to any question means an alternative must be considered to satisfy the requirements in this guide.

Tasks	Results
1. Determine the rescue response time needed for permit-required confined spaces. In other words, how long can a person remain trapped in the confined space? Consider any PEL, REL time limits (e.g. H2S has an NIOSH REL 10 ppm ceiling for 10 minutes) If there is a possible IDLH, a rescue team needs to be standing by. If the hazards are only physical (e.g. broken bones, abrasions) a longer response time can be tolerated.	Needed rescue response time _____ minutes
2. Calculate the time required for the rescue service by adding the needed time to: get the notification, arrive at the scene, set-up and be ready to enter. Consider the rescue team’s distance from each worksite, quality of roads and traffic, reliability and training of the drivers. Then subtract the needed response time. The answer must be a positive number to continue.	Receive notification _____ minutes + Arrive at the scene _____ minutes + Set up and be ready for entry _____ minutes - Needed rescue response time _____ minutes = _____ minutes Must result in a positive number
3. Determine the rescue response service availability: a) Is the rescue service available when workers will enter the permit-required confined space? b) Are key rescue members available at these times? c) Can the rescue service notify the attendant when they are unavailable so entries can be prevented or stopped?	 Yes ___ No ___ Yes ___ No ___ Yes ___ No ___
4. Has the rescue service passed the most recent performance requirement evaluations?	Yes ___ No ___
5. Is the planned 911 service willing to perform rescues: a) If you call 911, is a responder available? b) Is the 911 responder willing to perform rescue and first aid? c) Are the 911 responders able to perform rescues at the worksite?	 Yes ___ No ___ Yes ___ No ___ Yes ___ No ___
6. Can the attendant immediately request a rescue?	Yes ___ No ___

EVALUATION OF CONFINED SPACE RESCUE PLANS

Follow this checklist to determine if a permit-required confined space rescue plan meets all performance requirements. This critique should occur during any periodic drills or following a successful rescue. Answering “no” to any question, means an appropriate corrective action must be considered.

Tasks	Results
1. Has the entire team been trained as entrants, and know the potential hazards of at least the types of spaces they may have to perform a rescue?	Yes ___ No ___
2. Can the team recognize signs, symptoms, and consequences of hazardous atmospheres possible in the permit confined space?	Yes ___ No ___
3. Is every team member: a) Provided with and trained in PPE necessary to perform rescues? b) Trained to perform rescues and use rescue equipment (e.g. ropes, backboards)?	 Yes ___ No ___ Yes ___ No ___
4. Is every team member trained in first-aid and medical skills to treat victims injured or overcome by possible hazards?	Yes ___ No ___
5. Do team members perform duties safely and efficiently?	Yes ___ No ___
6. Do team members focus on their own safety before the victim’s?	Yes ___ No ___
7. If necessary, can the rescue service test the air identifying entry conditions?	Yes ___ No ___
8. Can team members find information that applies to rescues? a) Entry permits b) Hot work permits c) Safety Data Sheets	 Yes ___ No ___ Yes ___ No ___ Yes ___ No ___
9. Does the rescue service know of any hazards from outside the permit area (e.g. nearby construction)?	Yes ___ No ___
10. If necessary, can the rescue service safely rescue victims from: a) A limited size opening (less than 2 ft. in diameter)? b) Limited internal space? c) Internal obstacles or hazards?	 Yes ___ No ___ Yes ___ No ___ Yes ___ No ___
11. If necessary, can the rescue service safely perform an elevated rescue?	Yes ___ No ___
12. Does the rescue service have a plan for each type of rescue needed? a) A plan for each kind of permit space rescue operation at the worksite? b) Does the plan cover all types of possible necessary rescue operations?	 Yes ___ No ___ Yes ___ No ___

PLANNING CONFINED SPACE RESCUE DRILLS

Follow this worksheet to check off that the rescue team's periodic drills – at least once every 12 months when a successful rescue has not been completed – covers all possible scenarios and worksite characteristics. Practices may occur in representative spaces or in the "worst-case" environment with the most restrictive access, entrance size, and configurations.

Tasks	Results
1. Horizontal Access The entrance is located on the side of the permit space. Using retrieval lines may be difficult.	Is this a possibility at the worksite? Yes ___ No ___ Description attached. ___
2. Vertical Access The entrance is located: a) On the top of the permit space so rescuers must climb down, or b) On the bottom of the permit space so rescuers must climb up to enter.	Is this a possibility at the worksite? Yes ___ No ___ Description attached. ___
3. Restricted Entrance Size Smallest diameter entrance is 2 ft. or less. These are too small for rescuers to enter with a SCBA, or allow normal spinal immobilization of an injured employee.	Is this a possibility at the worksite? Yes ___ No ___ Description attached. ___
4. Unrestricted Entrance Size Smallest diameter entrance is 2 ft. or more, and allows relatively free movement into and out of the permit space.	Is this a possibility at the worksite? Yes ___ No ___ Description attached. ___
5. Open Internal Configuration The space has no barriers, obstacles, or obstruction (e.g. a water tank).	Is this a possibility at the worksite? Yes ___ No ___ Description attached. ___
6. Obstructed Internal Configuration The space has an obstacle that requires the rescuer to maneuver around it (e.g. baffle, mixing blades). Equipment brought into the space (e.g. ladder, scaffold) can be an obstruction if its position or size increases the rescue difficulty.	Is this a possibility at the worksite? Yes ___ No ___ Description attached. ___
7. Elevated Entrance Configuration The entrance is 4 ft. or more above grade, requiring high angle rescue procedures because of the difficulty transporting victims from the entrance to the ground.	Is this a possibility at the worksite? Yes ___ No ___ Description attached. ___
8. Non-elevated Entrance Configuration The entrance is less than 4 ft. above grade, and the rescue team can normally transport victims.	Is this a possibility at the worksite? Yes ___ No ___ Description attached. ___

POLICY

Solomon Corporation has adopted this program to ensure the Crane Operator is fully qualified and suitably prepared to assure the safety of employees from the following OSHA regulations: §1926.1400 – Cranes

This policy applies to “Crane Operators”, cranes, and other material handling equipment for the movement of material by hoisting.

REFERENCES

- §1926.1400 - Cranes

RESPONSIBILITIES

Corporate EH&S Manager Mike Dahl is designated as the Competent Person in authority over all crane and hoisting operations. Corporate EH&S Manager Mike Dahl will ensure that all safety measures and systems are in place, all safety procedures are adhered to, and ensure regular inspections of the crane, operational site, and rigging equipment are made.

Solomon Corporation has implemented and will enforce the following work practices and procedures to assure that no employee will be exposed to hazards during crane operations:

TRAINING

It is a requirement of Solomon Corporation that only certified employees are allowed to operate cranes. All employees that were certified prior to November 8th 2010 must be recertified within 4 years of this date through one of the following:

- An accredited crane operator testing organization
- An audited program provided by Solomon Corporation
- Have U.S. military licensing by a government authority

Operators not certified prior to November 8th 2010 must be certified through one of these programs prior to being allowed to operate cranes for our company.

Employees are required to attend refresher training every 4 years.

SAFE PRACTICES

CRANE OPERATOR REQUIREMENTS AND QUALIFICATIONS

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.

An employee selected to operate a crane will meet these specific requirements. No person will be permitted to operate a crane whose hearing or eye-sight is impaired, or who may be suffering from heart disease or similar ailments. The following physical qualifications will be minimum requirements for crane operators and trainees:

- Have corrected vision that meets the same requirements as vision for a valid driver's license. Possession of a driver's license or a doctor's certificate is evidence of meeting this requirement
- Be able to read and understand signs, labels, and instruction manuals
- They will be able to distinguish colors, regardless of position of colors, if color differential is required for operation
- Their hearing, with or without hearing aid, must be adequate for a specific operation
- Have vision of at least 20/30 Snellen in one eye and 20/50 in the other eye with or without glasses

Qualifications for crane operators will be maintained every four years and will include medical and vision evaluations.

ASSEMBLY AND DISASSEMBLY OF CRANES

It is the policy of Solomon Corporation that only a qualified competent person is allowed to direct the assembly and disassembly of cranes.

When assembling and disassembling a crane the manufacture's procedures and prohibitions must be followed and not deviated from in anyway.

GROUND CONDITIONS

It is a requirement of Solomon Corporation that ground conditions must be stable, drained, and graded by a qualified grade checker prior to any crane being assembled. The same rule applies for supporting materials for the crane. When using supporting materials for the crane the manufacture's specifications must be followed to ensure the adequate support and degree of level are met.

HAZARD IDENTIFICATION AND RISK ASSESSMENT

It is the determination of Solomon Corporation to ensure that prior to work being performed a hazard identification and risk assessment is conducted by a designated competent person. Boundaries of the work zone must be identified by marking with flags and range limiting devices. The work zone must be defined using a 360 degree radius around the crane or the max radius of the crane.

This assessment must ensure that no part of the crane, load line, load, or any part of the crane can get closer than 20 feet to an electrical power line.

In the instance that the assessment identifies that the crane , load line, load or any part of the crane could get closer than 20 feet to an electrical power line, the following measures must be followed:

- Any overhead wire will be considered an energized line until a representative of the owner or utility has checked and indicated otherwise
- Before any crane operation is started closer than 20 feet to a power line the owner or utility representative will be notified
- Except where electrical power lines and equipment have been de-energized and visibly grounded at the point of work or where an insulating barrier, not a part of the crane has been erected, or the employee is insulated or isolated from the crane, a crane will maintain clearances in accordance to the following:

Voltage (KV)	Minimum Clearance Distance (Feet)
Up to 50	10
50 to 200	15
200 to 350	20
350 to 500	25
500 to 750	35
750 to 1000	45
Over 1000	As established by the line owner

Where the assessment identifies that the crane has the potential to hit and injure or pin/crush a worker against an object, the hazardous areas of the crane swing radius will be marker with warning lines or railings.

INSPECTIONS

Solomon Corporation requires a visual crane inspection before each shift by a designated competent person to ensure that the crane works properly. The following will be checked:

- Control mechanisms for wear and malfunction, each daily use
- Deterioration or leakage of air or hydraulic systems, each daily use
- Hydraulic system for oil level, each daily use
- Hydraulic hoses and fittings for leaks and deterioration
- All running ropes, each daily use
- Replace a hook having a crack, a throat opening of more than 15% of normal or more than 10 degree twist from the plane of an unbent hook
- Rope reeving in conformance with the original installation
- Electrical apparatus for malfunction, wear, dirt, and moisture accumulations
- Tires for specified pressure
- The ground conditions

Monthly inspections will be made and documented by a designated competent person. The things to be inspected monthly include the following:

- Structural members and boom for cracks, deformation, and corrosion
- Bolts and rivets for tightness
- Sheaves, drums, pins, bearings, shafts, gears, rollers, locking and clamping devices for wear, distortion, and cracks
- Power sources for performance
- Brake & clutch system parts, linings, pawls, & ratchets for excessive wear
- Load, boom angle, and other indicators for inaccuracies over their full range
- Travel, steering, braking, and locking devices for malfunction
- Tires for wear or damage
- Radiators and oil coolers for leakage, blockage of air passages, and improper performance
- Rust on piston rods and control valves
- Oil strainers and filters for blockage

The documentation of monthly inspections must include: the parts of the crane checked; the results of the inspection; the name on signature of the inspector with the date of the inspection.

Records of the documentation must be kept for at least 3 months.

OPERATION

It is a requirement of Solomon Corporation that prior to operations beginning the proper safety devices must be installed on the crane and in proper working order. If any of the safety devices such as but not limited to; the crane level indicator, boom stops, jib stops, foot pedal brake locks or horns, are not in proper working order, the crane must be taken out of service and operation will not continue until deemed in proper working order.

- Solomon Corporation will comply with the manufacturer's procedures, specifications, and limitations applicable to the operation of any and all cranes and derricks. Where manufacturer's specifications are not available, the limitations assigned to the equipment will be based on the determinations of a qualified engineer competent in this field and such determinations will be appropriately documented and recorded. Attachments used with cranes will not exceed the capacity, rating, or scope recommended by the manufacturer
- Rated load capacities, recommended operating speeds, special hazard warnings, or instruction, and the operations manual for the crane will be kept in the cab of the crane at all times
- Hand signals to crane and derrick operators will be those prescribed by the applicable American National Standards Institute (ANSI) standard for the type of crane in use. An illustration of the signals will be posted at the job site
- Corporate EH&S Manager Mike Dahl is the designated Competent Person who will inspect all machinery and equipment prior to each use, and during use, to make sure it is in safe operating condition. Any deficiencies will be repaired, or defective parts replaced, before continued use
- Solomon Corporation will maintain a crane and its accessories in a safe condition
- A thorough, annual inspection of the hoisting machinery will be made by Corporate EH&S Manager Mike Dahl, a government or private agency recognized by the U.S. DOL. Solomon Corporation will keep all dates and results of inspections for each hoisting machine and piece of equipment
- Whenever internal combustion engine powered equipment exhausts in enclosed spaces, tests will be made and recorded to see that employees are not exposed to unsafe concentrations of toxic gases or oxygen deficient atmospheres
- A portable dry powder fire extinguisher with not less than 5 BC rating, or higher, will be available in the cab, in the operating enclosure, or on the unit. The operator and maintenance employees will be trained in its use
- Modifications or additions which affect the safe operation of the equipment may only be made with the manufacturer's written approval. The original safety factor of the equipment will not be reduced if modifications or changes are made to the equipment. Modifications or changes will be certified by a qualified registered engineer. The capacity, operation, and maintenance instruction plates, tags, or decals will be changed accordingly to reflect any modifications or changes

The operator has the authority to stop or refuse to handle loads if he or she feels that the operation jeopardizes safety concerns. The operations must not proceed until a qualified person deems that the safety is assured.

Signal Person

If the point of operation is not in full view to the operator, a signal person must be provided for the operation to continue. The same rule applies if: the view is obstructed where the crane is traveling; the operator deems it necessary due to the site specific safety concerns.

General Crane Operations

An equipment operator will be familiar with the equipment and its proper care. If adjustments or repairs are necessary or if any defects are known, the operator will report the needed adjustments or repairs or the defects to the responsible supervisor and, upon changing shifts, notify the next operator of the defects.

All controls will be tested by an operator before beginning a new shift. Any controls that do not operate properly will be adjusted or repaired before operations are begun.

No minor under eighteen years of age will be employed in occupations involving the operation of any power-driven hoisting apparatus or assisting in such operations by work such as hooking on, loading slings, rigging gear, etc.

An equipment operator will not engage in any practice that will divert the operator's attention while actually operating equipment. The operator will not eat, smoke, or read while actually engaged in the operation of the crane, or operate the crane when physically unfit.

Each equipment operator will be responsible for those operations that are under the operator's direct control. When there is any doubt as to safety, an operator will stop operations and consult with the supervisor before continuing work.

An equipment operator will not leave equipment unattended unless the operator is notified by the responsible supervisor that it is safe to do so. Before leaving, the operator will do all of the following:

- Land any attached load
- Disengage clutches
- Put the controls in the off or neutral position
- Open the main switch or stop the engine
- Engage manual locking devices, in the absence of automatic holding equipment, and the crane is secured against accidental travel

When there is a warning sign or lockout on the switch or engine starting controls, an equipment operator will not close the switch or start operations until the sign has been removed by the person who placed it there.

Before closing the switch or starting the equipment, an operator will put all controls in the off or neutral position and will make sure that all personnel are in the clear.

If power fails during operation, an equipment operator will do all of the following:

- Set all brakes and locking devices
- Move all clutch or other power controls to the off or neutral position
- Communicate with the responsible supervisor in charge of equipment operations
- If practical, and applicable, land the load under brake control

An operator will respond to signals only from the designated signalman using appropriate signals, except where voice communications equipment is used. An operator will obey a stop signal from anyone. Operating signals will follow an established standard. Whistle signals may be used where one crane only is in operation

A crane will be equipped with an audible signaling device that will be actuated before traveling without a signalperson and intermittently during travel. When moving a crane, the following signals will be used:

- Stop, 1 audible signal
- Go ahead, 2 audible signals
- Back up, 3 audible signals
- The operator, or someone especially designated, will properly lubricate all working parts of the crane
- Cranes will be kept clean
- Whenever the operator finds the main or emergency switch open, it will not be closed, even when starting on regular duty, until it is determined that no one is on or about the crane. The crane will not be oiled or repaired unless the main switch is open
- If the power goes off, the operator will immediately throw all controllers to the “OFF” position until the power is again available
- Before closing the main switch, the operator will make sure that all controllers are in the “OFF” position until the power is again available
- When lowering a load, the operator will proceed carefully and make sure the load is under safe control
- When leaving the cage the operator will throw all controllers to the “OFF” position and open the main switch
- Necessary clothing and personal belongings will be stored in such a manner as not to interfere with access or operation
- Tools, oil cans, waste, extra fuses, and other necessary articles will be stored in the tool box, and will not be permitted to lie loose in or about the cab

- Corporate EH&S Manager Mike Dahl will insure that operators are familiar with the operation and care of the fire extinguishers provided
- A legible rating chart will be provided at the operator station showing not less than the following information for cranes:
  - Load capacity relating to corresponding boom angles and operating radii for all boom lengths, jib lengths, and angles. Where optional equipment, such as outriggers or extra counterweights are provided by the manufacturer, alternate ratings will be provided in addition
  - Where structural competence limits the ratings, such information will be shown on the chart.
  - The required parts of line for hoist reeving, including the size and construction of rope will be on the rating chart or in the operating manual
- A crane will not be operated with more than the designed amount of ballast or counterweight. The amount of ballast or counterweight will not be changed without authorization of the manufacturer in writing and making corresponding changes in the rating chart
- When assembling or disassembling a boom on the ground, it will be blocked to prevent dropping the boom and boom sections
- When a boom section is manually telescoped it will be positioned so that through and through pinning of the cylinder eye may be accomplished and will be checked in a horizontal position
- When 2 or more cranes are used to lift a single load, 1 designated employee will direct the rigging, lift, and movement
- A locomotive crane will not be rotated into a position where other rail cars on an adjacent track might strike it, except where it has been ascertained that cars are not moving on the adjacent track and flag protection has been provided
- Specified tire pressures will be maintained

ATTACHING AND HOLDING A LOAD

A load will be attached to the hook by means of a sling or other lifting device. The hoist rope will not be wrapped around a load except when setting or removing a pole.

Before starting to hoist, the operator will make sure:

- The hoist rope is not kinked
- The multiple part lines are not twisted around each other
- The hook is not swinging when brought over the load

An employee will not be permitted to pass or stand under a suspended load.

An operator will not load a crane beyond the rated load. A load which is limited by structural competence rather than by stability will be checked by the operator to determine that the weight does not exceed the rated load.

MOVING A LOAD

- In moving a load, an operator will avoid sudden acceleration and deceleration of a movement of the boom which would cause a swinging action by the load
- An operator will not move a load or hook if an employee is on it
- A load will be secured and balanced before it is lifted more than 6 inches
- An operator will test the hoisting brakes before moving a near rated load by raising the load a few inches and applying the hoisting brakes. This requirement applies to both single or multiple line reeving
- A load or boom will not be lowered below a point where less than 2 full wraps of rope remain on the drum
- A load will not be moved in a manner to contact obstructions
- The rotational speed of a crane will be such that the center of the load does not swing out beyond the radius of the point sheave in use
- A tag line will be used when rotation of the load would be hazardous
- A crane will not be used for dragging a load sideways
- A load will not be lifted over the front area of a truck crane, unless it is within the capacity of the rating chart for the front area of the truck crane

Floats or pads secured to outriggers will be used when the load to be handled at a particular radius exceeds the rated load without outriggers. A wood block used to support an outrigger will be:

- Of such size as to prevent shifting and toppling of the load
- Of such strength to resist crushing
- Free of defects such as knots and cracks which could affect its ability to support the load

Before moving with a load, a designated employee will determine: position to carry the load; boom location; ground conditions; travel route; speed of movement; location of overhead wires.

A crane, while moving, from one location to another, will have:

- The boom carried in line with the direction of movement
- The superstructure secured against rotation, except when negotiating a turn with an operator in the cab or the boom on a dolly
- An empty hook restrained against movement
- A crane with or without a load will not travel with the boom at a height that it may bounce back over the cab.

A crane operating at a fixed radius will have the boom-hoist pawl or other positive locking device engaged.

REFUELING

A crane fuel tank will not be refueled while the engine is running.

When refueling is done with portable containers, the containers will be safety cans having automatic closing caps and be labeled as approved by underwriters' laboratories, Inc., factory mutual laboratory, or other nationally recognized laboratory.

Smoking or other sources of sparks and flame will be not less than 25 feet from a refueling operation.

WIRE ROPE & SLING INSPECTION

Running ropes in continuous service will have an inspection not less than once a month. The inspection will include: measurement of diameter of rope; count of broken wires in 1 lay when concentrated; end connections for broken wires; corrosion, kinking, crushing, cutting, or other conditions affecting the capability of the rope; cracked, bent, worn, corroded, or improperly applied end connectors.

For rope in contact with equalizer sheaves or with saddles, or on sheaves where rope travel is limited, the inspection will include moving the rope from its normal position on the sheave and examining the rope at the rope contact point.

Inspection of a non-rotating type rope will include the determination that the wires are not broken or worn within the rope.

A rope which has been idle more than 1 month will be given a complete inspection before being placed in service.

OCCASIONAL AND OUT-OF SERVICE INSPECTIONS

- A crane which has been idle more than 1 month, but less than 6 months will receive an inspection before being placed in service
- A crane, which has been idle more than 6 months, will receive an inspection before being placed in service
- A standby crane will be inspected at not less than 6 month intervals

TESTS FOR CRANES

A crane, prior to initial use and after modification, will be given an operational test to insure compliance, including the following:

- Load hoisting and lowering mechanisms
- Boom hoisting and lowering mechanisms
- Travel mechanism
- Safety devices
- Boom extension mechanisms for a mobile hydraulic crane

A test load will not exceed 110% of the rated load at any working radius.

Results of operational tests and load tests will be maintained at the job site.

Where rerating is necessary, it will be as prescribed in Section 5-2.2 of Chapter 5-2 of USAS B30.5-1968, Crawler, Locomotive and Truck Crane standard, Rerating will not be in excess of the original load rating unless a letter of approval is obtained from the manufacturer and maintained at the job site.

GENERAL MAINTENANCE

Solomon Corporation will establish and maintain a preventative maintenance program under the supervision of an authorized and trained employee or outside service.

Before adjustments and repairs to a crane are started, the following steps will be taken:

- The crane will be placed where it does not interfere with other operations
- A “warning” or “out of order” sign will be placed at the controls, and the controls will be in the “off” position. The sign need not be used if the energy source is locked out
- The power plant will be disconnected, locked out, or made safe by other means
- The boom will be lowered to the ground or otherwise secured against dropping
- All hydraulic cylinders used for boom hoist and boom telescope on a mobile hydraulic crane will be retracted
- Hydraulic oil pressure from all hydraulic circuits will be relieved before loosening or removing hydraulic components of a mobile hydraulic crane
- The load block will be lowered to the ground or otherwise secured against dropping, except when operation is necessary for the adjustment

After adjustments and repairs have been completed, the crane will not be returned to operations until all guards have been installed, safety devices activated, trapped air removed from the hydraulic system of a mobile hydraulic crane, and maintenance equipment and warning signs or out of order signs removed.

Hazardous conditions disclosed by the inspection requirements will be corrected before operation of the crane is resumed.

Adjustments will be maintained to assure correct functioning of such components as operating mechanisms, safety devices, control systems, power plants, brakes, and clutches.

The original safety factor will be maintained when repairs and replacements are made. Hooks showing defects will be replaced. Pitted or burned electrical contacts affecting their operations will be replaced in sets.

A crane or its wire rope will not be used as a ground or to carry current. The ground will be attached to the part being welded while welding.

WIRE ROPE & SLING MAINTENANCE

Running wire ropes will be replaced when they show 6 random broken wires in 1 rope lay or 3 broken wires in 1 strand of a rope lay; wear of 1/3 of the original diameter of outside individual wires; kinking, crushing, or bird caging; heat damage; reduction in nominal diameter of 3/64 inch for ropes to 3/4 inch, 1/16 inch for ropes 7/8 inch to 11/8 inch, 3/32 inch for ropes 11/4 inch to 11/2.

A standing wire rope will be replaced if it has more than 2 broken wires in 1 lay section beyond an end connection or 1 broken wire at an end connection.

A wire rope having more than 1 broken wire at a socketed fitting will be re-socketed.

Wire rope will be stored in a manner to prevent damage or deterioration and handled in a manner to prevent kinking or twisting.

Before cutting preformed rope, seizing will be placed on each side of the cut to prevent unlaying of the strands. On non-preformed rope 7/8 inch in diameter or smaller, 2 seizings will be placed on each side of the cut, and for non-preformed rope more than 7/8 inch in diameter, 3 seizings on each side will be used.

During installation, wire rope will not be dragged in dirt or around sharp objects.

POLICY

Solomon Corporation has implemented this policy to inform workers of the written Driving Safety Program in the workplace. This ensures the safety and health of the employees on the job site.

RESPONSIBILITIES

Driving safety is a responsibility shared between the Company and its employees.

Employer Responsibilities

- Ensuring all employees are physically fit and capable to perform the job duties assigned
- Ensuring personnel possess valid driver's licenses for the class of vehicle being driven
- Responding quickly to eliminate workplace hazards
- Ensuring all vehicles and equipment are kept in good safe working order
- Ensuring employees follow safe job procedures
- Reviewing job hazard analysis whenever there is a significant change to any element of the job or there has been an injury or illness
- Ensuring the vehicles are large enough and designed for how they are used

Supervisor Responsibilities

- Establishing and maintaining safe and healthful working conditions
- Monitoring employee work behaviors using behavior based safety tools
- Ensuring employees are not impaired by illness or medication use
- Setting good examples, instructing their employees, making sure they fully understand and follow safe procedures

Employee Responsibilities;

- Notifying their supervisors if they are fatigued to the point of not being able to perform their duties safely
- Ensuring they are physically and mentally fit to perform their job functions safely; they must take responsibility for their own safety as well
- Notifying their supervisor if they are taking prescription or over-the-counter medications
- Each employee must possess a valid driver's license
- No employee should undertake a job that appears to be unsafe
- Employees are to report to a superior or designated individual all unsafe conditions encountered during work
- Seatbelts must be used by the driver and all passengers and properly maintained

SAFE PRACTICES

Driver Requirements

Solomon Corporation will only allow authorized employees to drive a motor vehicle in the course and scope of the work to be performed, or operate a company owned vehicle.

Each driver will be appropriately assessed, licensed, and trained to operate the company vehicle. The driver's license of each driver will be valid and kept current.

Authorized drivers will be prohibited from operating a motor vehicle while under the influence of any of the following that might impair their driving skills:

- Alcohol
- Illegal drugs
- Prescription or over the counter medications - without prior approval

Authorized drivers will report to the appropriate personnel any of the following:

- Collision
- Traffic violation
- Near miss incident

Seat belts will be worn by all occupants at all times whenever the vehicle is in motion.

Vehicle Requirements

The company vehicle will be fit for the purposes intended, and will be maintained in a safe working order.

When transporting loads, the load will be secured, and will not exceed the manufacturers load specifications, or the legal limits for the vehicle.

Safe Driving Practices

All authorized drivers will follow safe driving practices and safe driving behaviors to include but not limited to:

- Cell phone use is prohibited while driving
- Do not manipulate radios or other equipment which may cause a distraction
- Do not exceed the posted speed limit
- Maintaining a safe distance between other vehicles
- Do not exceed the occupant capacity of the vehicle

POLICY

The compliance of all employees with Solomon Corporation Safety and Health Program is mandatory and shall be considered a condition of employment. All safety rules, procedures, and plans in effect are to be followed as specified in the safety program. Employees found to be in violation of Company safety policy may be subject to penalty.

RESPONSIBILITIES

Corporate EH&S Manager Mike Dahl is the supervisor for disciplinary actions and any employee in a position of management or supervisory capacity may initiate disciplinary action against any employee found to be in violation of Company policy. Not following verbal or written safety procedures, guidelines, rules, horse play, failure to wear selected Personal Protective Equipment (PPE), abuse of selected PPE, and etc. constitutes a safety violation.

TRAINING

The importance of safe work practices and the consequences of failing to abide by safety rules will be covered in the New Employee Safety Orientation and at Tailgate/Toolbox Safety Training. This will help ensure that all employees understand and abide by The Company's safety policies.

Employees that are observed performing unsafe acts or not following proper procedures or rules will be retrained by their foreman or supervisor. A Safety Contact Report may be completed by the supervisor to document the training. If multiple employees are involved, additional safety meetings will be held.

PROCEDURES

The following outlines the disciplinary measures which will be taken against employees found to be in violation:

Periodic safety inspections of the workplace and equipment will be undertaken to ensure that all personnel, including supervisory positions, are demonstrating the required commitment to safety. A general neglect of safe work procedures, practices, and requirements in the workplace, or neglect of equipment safety, will be viewed as a lack of supervisory enforcement of safety policy and the appropriate supervisor/management personnel will be subject to the same disciplinary procedures described below.

These programs will be used for employee compliance with the safety program and all safety rules: training programs; retraining; optional safety incentive programs; disciplinary action.

SAFETY INCENTIVE PROGRAMS

Although strict adherence to safety policies and procedures is required of all employees, The Company may choose to periodically provide recognition of safety-conscious employees and jobsites without accidents through a safety incentive program.

DISCIPLINARY ACTION

The failure of an employee to adhere to safety policies and procedures established by Solomon CorporationSolomon Corporation can have a serious impact on everyone concerned. An unsafe act can threaten not only the health and well-being of the employee committing the unsafe act but can also affect the safety of his/her coworkers and/or customers. Accordingly, any employee who violates any of The Company's safety policies will be subject to disciplinary action.

When a “Safety Violation Notice” is issued, appropriate supervisory personnel will meet with employee(s) to discuss the infraction and inform individual(s) of the rule or procedure that was violated and the corrective action to be taken.

Note: Failure to promptly report any on-the-job accident or injury, on the same day as occurrence, is considered a serious violation of The Company’s Code of Safe Practices. Any employee who fails to immediately report a work-related accident or injury, no matter how minor shall be subject to disciplinary action.

Employees will be disciplined for infractions of safety rules and unsafe work practices that are observed, not just those that result in an injury. Often, when an injury occurs, the accident investigation will reveal that the injury was caused because the employee violated an established safety rule and/or safe work practice(s).

In any disciplinary action, the foreman should be cautious that discipline is given to the employee for safety violations, and not simply because the employee was injured on the job or filed a Workers’ Compensation claim.

Violations of safety rules and the Code of Safe Practices are to be considered equal to violations of other Company policy. Discipline for safety violations will be administered in a manner that is consistent with The Company’s system of progressive discipline. If, after training, violations occur, disciplinary action will be taken as follows:

1. Oral warning. Documented, including date and facts on the “Safety Warning Report” form. Add any pertinent witness statements. Restate the policy and correct practice(s)
2. Written warning. Retrain as to correct procedure/practice
3. Written warning with suspension
4. Termination

As in all disciplinary actions, each situation is to be carefully evaluated and investigated. The particular step taken in the disciplinary process will depend on the severity of the violation, employee history, and regard to safety. Foremen and superintendents should consult with the office if there is any question about whether or not disciplinary action is justified. Employees may be terminated immediately for willful or extremely serious violations. Union employees are entitled to the grievance process specified by their contract.

Note: Consistency in the enforcement of safety rules shall be exercised at all times.

POLICY

Solomon Corporation has implemented this policy to ensure no employee is exposed to electrical hazards in the workplace. Corporate EH&S Manager Mike Dahl is the supervisor responsible for ensuring the following policy for controls, training, personal protective equipment, and safe work practices are enforced:

RESPONSIBILITIES

Electrical safety is a responsibility shared between the Company and its employees.

EMPLOYER RESPONSIBILITIES

Solomon Corporation is responsible for:

- Ensuring that only Qualified persons perform electrical work on de-energized equipment that has been locked-tagged out
- Training personnel in how to perform a job hazard analysis
- Responding quickly to eliminate workplace hazards
- Ensuring all equipment is kept in good repair
- Ensuring employees follow safe job procedures
- Reviewing job hazard analysis whenever there is a significant change to any element of the job or there has been an injury or illness

SAFETY COMMITTEE RESPONSIBILITIES

It is the responsibility of the safety committee to:

- Assist in ensuring lockout-tagout is followed when necessary
- Assist in training employees to recognize and control workplace hazards
- Monitor the workplace for hazards
- Encourage employees to report hazards
- Implement appropriate controls
- Ensure corrective action is taken promptly

EMPLOYEE RESPONSIBILITIES

All employees are expected to:

- Perform electrical work on de-energized equipment that has been locked-tagged out only if qualified
- Qualified Persons are responsible for maintaining qualifications
- Follow safe job procedures
- Report hazards to a supervisor immediately

TRAINING

Corporate EH&S Manager Mike Dahl will ensure all employees exposed to work involving electrical systems or energized parts will be trained in and familiar with the safety-related work practices required by OSHA regulation and the National Fire Protection Association NFPA 70E that pertain to their respective job assignments.

Corporate EH&S Manager Mike Dahl will ensure that all employees exposed to work involving electrical systems will be trained in, and familiar with, the following:

- The requirements of NFPA 70E Standards for Electrical Safety in the Workplace
- The skills and techniques necessary to distinguish exposed live parts from other parts of electric equipment
- The skills and techniques necessary to determine the nominal voltage of exposed live parts
- The clearance distances specified in §1910.333(c) and the corresponding voltages to which the qualified person will be exposed

The training required will be of the classroom or on-the-job type. The degree of training provided will be determined by the risk to the employee based upon the NFPA 70E - Standards for Electrical Safety in the Workplace.

- The training requirements apply to employees who face a risk of electric shock that is not reduced to a safe level by the electrical installation requirements
- Other employees who also may reasonably be expected to face comparable risk of injury due to electric shock or other electrical hazards will also be trained
- Employees will be trained in and familiar with the safety-related work practices required that pertain to their respective job assignments
- Employees who are not qualified persons will also be trained in and familiar with any electrically related safety practices not specifically addressed by regulations but which are necessary for their safety

Qualified persons (i.e. those permitted to work on or near exposed energized parts) will, at a minimum, be trained in and familiar with the following:

- The skills and techniques necessary to distinguish exposed live parts from other parts of electric equipment
- The skills and techniques necessary to determine the nominal voltage of exposed live parts
- The specified clearance distances and the corresponding voltages to which the qualified person will be exposed
- Qualified persons whose work on energized equipment involves either direct contact or contact by means of tools or materials will also have the required training

SAFE PRACTICES

- Only qualified personnel are authorized to perform work, service, or maintenance on energized electrical parts or systems at *Solomon Corporation*
- Non-qualified personnel are prohibited by Company Policy from working on or near exposed energized electrical circuits or systems. If a work task requires unqualified personnel, any exposed electrical systems will be de-energized and lockout/tagout procedures adhered to, per Company Policy, before unqualified personnel are allowed access to the work areas. Non-qualified personnel will be trained in the recognition and avoidance of electrical hazards in the work area
- Safe work practices will be employed to prevent electric shock or other injuries resulting from either direct or indirect electrical contacts, when work is performed near or on equipment or circuits that are or may be energized. The specific safe work practices will be consistent with the nature and extent of the associated electrical hazards
- Live parts to which an employee may be exposed will be de-energized before the employee works on or near them, unless Corporate EH&S Manager Mike Dahl can demonstrate that de-energizing introduces additional or increased hazards or is infeasible due to equipment design or operational limitations. Live parts that operate at less than 50 volts to ground need not be de-energized if there will be no increased exposure to electrical burns or to explosion due to electric arcs
- If the exposed live parts are not de-energized for reasons of increased or additional hazards or infeasibility, other safe work practices will be used to protect employees who may be exposed to the electrical hazards involved. Such work practices will protect employees against contact with energized circuit parts directly with any part of their body or indirectly through some other conductive object. The work practices that are used will be suitable for the conditions under which the work is to be performed and for the voltage level of the exposed electric conductors or circuit parts
- NFPA 70E and OSHA require employers to prove that working in a de-energized state creates more or worse hazards, or is not practical because of equipment design or operational limitations. Examples include: working on life-support systems; emergency alarm systems; ventilation equipment for hazardous locations; work on circuits that are part of a continuous process that cannot be completely shut down

DE-ENERGIZED ELECTRICAL EQUIPMENT

- All de-energized exposed parts will be treated as live throughout the work process
- Conductors and parts of electric equipment that have been de-energized but have not been locked out or tagged will be treated as energized parts
- While any employee is exposed to contact with parts of fixed electric equipment or circuits which have been de-energized, the circuits energizing the parts will be locked out or tagged or both

LOCKOUT-TAGOUT PROCEDURES

Corporate EH&S Manager Mike Dahl will maintain a written copy of these procedures and will make them available for inspection by employees and OSHA

De-energizing equipment

- Safe procedures for de-energizing circuits and equipment will be determined before circuits or equipment are de-energized
- The circuits and equipment to be worked on will be disconnected from all electric energy sources. Control circuit devices, such as push buttons, selector switches, and interlocks, may not be used as the sole means for de-energizing circuits or equipment. Interlocks for electric equipment may not be used as a substitute for lockout and tagging procedures
- Stored electric energy which might endanger personnel will be released. Capacitors will be discharged and high capacitance elements will be short-circuited and grounded, if the stored electric energy might endanger personnel
- Stored non-electrical energy in devices that could reenergize electric circuit parts will be blocked or relieved to the extent that the circuit parts could not be accidentally energized by the device

Application of locks and tags includes

- A lock and a tag will be placed on each disconnecting means used to de-energize circuits and equipment on which work is to be performed. The lock will be attached so as to prevent persons from operating the disconnecting means unless they resort to undue force or the use of tools
- Each tag will contain a statement prohibiting unauthorized operation of the disconnecting means and removal of the tag
- If a lock cannot be applied, or if Corporate EH&S Manager Mike Dahl can demonstrate that tagging procedures will provide a level of safety equivalent to that obtained by the use of a lock, a tag may be used without a lock
- A tag used without a lock will be supplemented by at least one additional safety measure that provides a level of safety equivalent to that obtained by use of a lock. Examples of additional safety measures include the removal of an isolating circuit element, blocking of a controlling switch, or opening of an extra disconnecting device
- A lock may be placed without a tag only under the following conditions: only one circuit or piece of equipment is de-energized; the lockout period does not extend beyond the work shift; employees exposed to the hazards associated with reenergizing the circuit or equipment are familiar with this procedure
- Verification of de-energized condition requirements will be met before any circuits or equipment can be considered and worked as de-energized
- A qualified person will operate the equipment operating controls or otherwise verify that the equipment cannot be restarted

- A qualified person will use test equipment to test the circuit elements and electrical parts of equipment that employees will be exposed to, and will verify that the circuit elements and equipment parts are de-energized. The test will also determine if any energized condition exists as a result of inadvertently induced voltage or unrelated voltage backfeed even though specific parts of the circuit have been de-energized and presumed to be safe. If the circuit to be tested is over 600 volts, nominal, the test equipment will be checked for proper operation immediately after this test
- Reenergizing equipment requirements will be met before circuits or equipment are reenergized, even temporarily
- A qualified person will conduct tests and visual inspections to verify that all tools, electrical jumpers, shorts, grounds, or other devices have been removed, so that the circuits and equipment can be safely energized
- Employees exposed to the hazards associated with reenergizing the circuit or equipment will be warned to stay clear of circuits and equipment
- Each lock and tag will be removed by the employee who applied it or under his or her direct supervision. However, if this employee is absent from the workplace, then the lock or tag may be removed by a qualified person designated to perform this task provided that: Corporate EH&S Manager Mike Dahl ensures that the employee who applied the lock or tag is not available at the workplace. Corporate EH&S Manager Mike Dahl ensures that the employee is aware that the lock or tag has been removed before he or she resumes work at that workplace
- There will be a visual determination that all employees are clear of the circuits and equipment

ENERGIZED ELECTRICAL EQUIPMENT

Only qualified personnel may work on electric circuit parts or equipment that has not been de-energized under the previously stated procedures. Such personnel will be capable of working safely on energized circuits and will be familiar with the proper use of special precautionary techniques, personal protective equipment, insulating and shielding materials, and insulated tools.

- If work is to be performed under or near overhead lines, the lines will be de-energized and grounded, or other protective measures will be provided before work is started. If the lines are to be de-energized, arrangements will be made with the person or organization that operates or controls the electric circuits involved to de-energize and ground them. If protective measures, such as guarding, isolating, or insulating, are provided, these precautions will prevent employees from contacting such lines directly with any part of their body or indirectly through conductive materials, tools, or equipment
- When an unqualified person is working in an elevated position near overhead lines, the location will be such that the person and the longest conductive object he or she may contact cannot come closer to any unguarded, energized overhead line than the following distances:
  - For voltages to ground 50kV or below – 10 feet
  - For voltages to ground over 50kV – 10 feet plus 4 inches for every 10kV over 50kV

- When an unqualified person is working on the ground in the vicinity of overhead lines, the person may not bring any conductive object closer to unguarded, energized overhead lines than the distances given above. For voltages normally encountered with overhead power line, objects which do not have an insulating rating for the voltage involved are considered to be conductive
- When a qualified person is working in the vicinity of overhead lines, whether in an elevated position or on the ground, the person may not approach or take any conductive object without an approved insulating handle closer to exposed energized parts than shown in Table S-5 unless:
  - The person is insulated from the energized part (gloves, with sleeves if necessary, rated for the voltage involved are considered to be insulation of the person from the energized part on which work is performed)
  - The energized part is insulated both from all other conductive objects at a different potential and from the person
  - The person is insulated from all conductive objects at a potential different from that of the energized part

Table S-5 - Approach Distances for Qualified Employees - Alternating Currents

Voltage range (phase to phase)	Minimum approach distance
300V and less	Avoid Contact
Over 300V, not over 750V	1 ft. 0 in.
Over 750V, not over 2kV	1 ft. 6 in.
Over 2kV, not over 15kV	2 ft. 0 in.
Over 15kV, not over 37kV	3 ft. 0 in.
Over 37kV, not over 87.5kV	3 ft. 6 in.
Over 87.5kV, not over 121kV	4 ft. 0 in.
Over 121kV, not over 140kV	4 ft. 6 in.

- Any vehicle or mechanical equipment capable of having parts of its structure elevated near energized overhead lines will be operated so that a clearance of 10 ft. is maintained. If the voltage is higher than 50kV, the clearance will be increased 4 in. for every 10kV over that voltage. However, under any of the following conditions, the clearance may be reduced
- If the vehicle is in transit with its structure lowered, the clearance may be reduced to 4 ft. If the voltage is higher than 50kV, the clearance will be increased 4 in. for every 10 kV over that voltage
- If insulating barriers are installed to prevent contact with the lines, and if the barriers are rated for the voltage of the line being guarded and are not a part of or an attachment to the vehicle or its raised structure, the clearance may be reduced to a distance within the designed working dimensions of the insulating barrier
- 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 given in Table S-5

- Employees standing on the ground will not contact the vehicle or mechanical equipment or any of its attachments, unless:
  - The employee is using protective equipment rated for the voltage
  - The equipment is located so that no uninsulated part of its structure (that portion of the structure that provides a conductive path to employees on the ground) can come closer to the line than permitted below
- If any vehicle or mechanical equipment capable of having parts of its structure elevated near energized overhead lines is intentionally grounded, employees working on the ground near the point of grounding may not stand at the grounding location whenever there is a possibility of overhead line contact
- Additional precautions, such as the use of barricades or insulation, will be taken to protect employees from hazardous ground potentials, depending on earth resistivity and fault currents, which can develop within the first few feet or more outward from the grounding point

ILLUMINATION

- Employees may not enter spaces containing exposed energized parts, unless illumination is provided that enables the employees to perform the work safely
- Where lack of illumination or an obstruction precludes observation of the work to be performed, employees may not perform tasks near exposed energized parts
- Employees may not reach blindly into areas which may contain energized parts

CONFINED SPACES

- When an employee works in a confined or enclosed space (such as a manhole or vault) that contains exposed energized parts, Solomon Corporation will provide, and the employee will use, protective shields, protective barriers, or insulating materials as necessary to avoid inadvertent contact with these parts
- Doors, hinged panels, and the like will be secured to prevent their swinging into an employee and causing the employee to contact exposed energized parts

CONDUCTIVE MATERIALS AND EQUIPMENT

Conductive materials and equipment that are in contact with any part of an employee's body will be handled in a manner that will prevent them from contacting exposed energized conductors or circuit parts.

- If an employee will handle long dimensional conductive objects (such as ducts and pipes) in areas with exposed live parts, Corporate EH&S Manager Mike Dahl will institute work practices (such as the use of insulation, guarding, and material handling techniques) which will minimize the hazard

PORTABLE LADDERS

Portable ladders will have nonconductive siderails if they are used where the employee or the ladder could contact exposed energized parts.

CONDUCTIVE APPAREL

Conductive articles of jewelry and clothing (such a watch bands, bracelets, rings, key chains, necklaces, metalized aprons, cloth with conductive thread, or metal headgear) may not be worn if they might contact exposed energized parts. However, such articles may be worn if they are rendered nonconductive by covering, wrapping, or other insulating means.

HOUSEKEEPING

- Where live parts present an electrical contact hazard, employees may not perform housekeeping duties at such close distances to the parts that there is a possibility of contact, unless adequate safeguards (such as insulating equipment or barriers) are provided
- Electrically conductive cleaning materials (including conductive solids such as steel wool, metalized cloth, and silicon carbide, as well as conductive liquid solutions) may not be used in proximity to energized parts unless procedures are followed which will prevent electrical contact

INTERLOCKS

Only a qualified person following the requirements of this section may defeat an electrical safety interlock, and then only temporarily while he or she is working on the equipment. The interlock system will be returned to its operable condition when this work is completed.

POLICY

Solomon Corporation has designated Corporate EH&S Manager Mike Dahl as the administrator/supervisor for Emergency Action Plans. Solomon Corporation will have an Emergency Action Plan whenever an OSHA standard requires one. Emergency Action Plans will be in writing, posted in the workplace, and available to employees for review. The names and job titles of every person in the chain of command will be posted.

RESPONSIBILITIES

Solomon Corporation will have and maintain an employee alarm system. The employee alarm system will use a distinctive signal for each purpose.

Corporate EH&S Manager Mike Dahl will ensure that all employees are informed and trained in the following minimum elements for Emergency Action Plans:

- Procedures for avoiding a fire or other emergency
- Procedures for emergency evacuation for all areas of work, including type of evacuation and exit route assignments
- Safe assembly areas designated for all work areas in the event of evacuation
- Procedures for employees who operate critical plant operations before they evacuate
- Procedures to account for all employees after evacuation
- Procedures to be followed by employees performing rescue or medical duties
- The members in the chain of command who may be contacted by employees who need more information about the Plan or for an explanation of their duties under the Plan

TRAINING

Solomon Corporation will designate and train employees to assist in a safe and orderly evacuation of other employees.

Corporate EH&S Manager Mike Dahl will review the Emergency Action Plan with each employee covered by the plan:

- When each Plan is developed or an employee is initially assigned to a job
- When the employee's responsibilities under the Plan change
- When any element of the Plan is changed

Fire Protection/Prevention training will be required on initial hiring and annually thereafter. All employees will be trained in the hazards involved in incipient stage firefighting and for escape purposes. Employees are instructed to ensure the local Emergency Medical Service EMS (Fire Department) is notified before attempting to extinguish any fire, and that if a fire is not immediately extinguished using one fire extinguisher, or the fire recurs to evacuate immediately.

PROCEDURES

All fire extinguishers will be inspected by Corporate EH&S Manager Mike Dahl on a monthly basis; this inspection will be recorded and documented with the required annual maintenance check. Records of inspection will be kept on file in the office. Corporate EH&S Manager Mike Dahl will ensure that all employees are trained in the proper operation of all types of fire extinguishers provided by the company.

EMERGENCY ACTION PLANS

Workplace emergencies can happen at any time and prudence dictates that response procedures must be planned and prepared for in advance. Because it is hard to think clearly during an emergency, it is essential to plan our response.

Emergency planning is the first step, and it can be challenging even if the workplace only has a few employees. Determinations must be made as to what emergencies could affect our workplace, who will lead and make decisions during an emergency, and what procedures will ensure that employees respond appropriately. These elements are the foundation of our workplace Emergency Plan.

Emergency planning may not prevent emergencies, but it can protect lives, equipment, and property over the long term. The following information in this Section describes how Solomon Corporation plans for workplace emergencies so that you and your coworkers respond appropriately when an unlikely event happens.

OSHA requires most employers to have Emergency Plans. Those that have more than 10 employees must have written plans. Those that have 10 or fewer employees do not have to put their plans in writing; however, they must ensure that their employees know what procedures to follow to protect themselves in an emergency.

MANAGING WORKPLACE EMERGENCIES

Much can be learned about planning for workplace emergencies from professional emergency responders. When someone calls 911 to report an emergency, he or she connects with a local network of fire, police, and other emergency service professionals who will respond as efficiently as possible. This network is part of a larger incident-management system that can respond to an emergency and accomplish the following:

- Identify, locate, and determine the extent of the emergency
- Determine the resources necessary to manage and control the emergency
- Coordinate command-and-control responsibilities between police and fire departments, hospitals and other medical service providers, government agencies, and on-site responders
- Establish and maintain communication between on-scene emergency responders and other emergency service providers
- Provide for the safety of victims

AN INCIDENT-MANAGEMENT SYSTEM FOR OUR WORKPLACE

With thoughtful planning, a small-scale version of the incident management system used by professional responders can be created. Our workplace will be ready to respond to any emergency – from a heart attack to an earthquake – and manage it in the most effective, efficient way possible. The essential parts of this system are our employees, our Emergency Action Plan, communication and emergency-response equipment, and our workplace.

The goal is for our Emergency Plan to ensure the well-being of everyone at our workplace. This is accomplished by involving employees in the ongoing planning processes, identifying emergencies that could affect our workplace, maintaining an emergency chain of command, and developing emergency response policy and procedures.

INVOLVING EMPLOYEES IN THE PLANNING PROCESS

Perhaps the most important element of emergency planning is getting employees involved in the planning process; when employees participate, they will take the Plan seriously and be more likely to respond appropriately during an emergency. From the start, they should be aware that the purpose of the plan is to ensure their safety.

- Employees will review the Plan to ensure that they know the procedures to follow to respond safely in an emergency. Each employee will have a copy of the plan or know where to obtain one
- Employees are encouraged to report workplace hazards and unsafe work practices that could contribute to an emergency

IDENTIFY EMERGENCIES THAT COULD AFFECT THE WORKPLACE

Identify any external incident (outside our workplace) that could threaten employees or the public and any incident within our workplace that could cause an emergency.

Examples include the following:

- Earthquake: external
- Explosion: external or internal
- Fire: external or internal
- Hazardous-substance release: external or internal
- Medical: internal
- Weather-related event (hurricane, tornado, blizzard, etc.): external
- Threat of violence: external or internal

Electrical, heating and cooling, and telecommunication-system failures can disrupt workplace activities and contribute to emergencies. Human error also contributes too many workplace emergencies; employees will be trained to do their jobs safely.

THE CHAIN OF COMMAND

The chain of command links one person with overall responsibility for managing an emergency to others responsible for carrying out specific emergency response tasks. A chain of command establishes who is in charge and ensures that everyone in the chain responds to emergencies in an organized way.

At the top of the chain is the incident commander, a trained employee who has overall responsibility for managing emergencies.

Just below the incident commander are the volunteer on-scene coordinators.

In an organization that has multiple buildings or workplaces, the chain of command might also include a facility manager, an emergency director, and other management units.

At many small- to medium-sized workplaces, the chain of command consists of an incident commander and one or two volunteer on-scene coordinators.

THE RESPONSIBILITIES OF THE INCIDENT COMMANDER

The incident commander has overall command of a workplace emergency, including the following responsibilities:

- Assessing incidents to determine if it is necessary to order emergency response
- Supervising on-scene coordinators' activities during an emergency
- Directing shutdown of critical workplace equipment or operations
- Coordinating the activities of professional responders such as ambulance, police, and fire departments
- Determining if an evacuation is necessary and managing an evacuation

The incident commander will be an employee who has experience managing others, assessing complex events, and making effective decisions under difficult circumstances

THE ROLE OF THE ON-SCENE COORDINATORS

On-scene coordinators are responsible for coordinating other employees' activities during an emergency (guiding them to appropriate exits and safe areas during an evacuation, for example) and for other emergency-response tasks for which they have volunteered and been properly trained.

Generally, each coordinator will be responsible for no more than 20 employees within a designated work area. On-scene coordinators must know how to respond to all emergencies identified in our Emergency Plan, the evacuation procedures for the particular workplace, and how to use emergency communication equipment. They will also know cardiopulmonary resuscitation (CPR), first aid, and how to respond to threats of violence.

Their primary responsibilities include the following:

- Checking rooms and other enclosed spaces for employees who may be trapped or unable to evacuate during an emergency
- Knowing who may need assistance during an evacuation and how to assist them
- Coordinating the emergency activities of employees
- Ensuring that employees understand how to respond to workplace emergencies
- Knowing the workplace layout, appropriate escape routes, and areas that employees must not enter during an evacuation
- Verifying that employees are in designated safe areas after an evacuation

The established chain of command minimizes confusion during an emergency. An effective chain of command helps ensure that responders manage an emergency in the most efficient way possible

RESPONDING TO EMERGENCIES

It is the policy of Solomon Corporation to protect employees from physical harm, harassment, and intimidation. To provide a safe working environment for all employees, Solomon Corporation is committed to establishing an effective Emergency Plan. The Plan is based on an “Incident Management System” (IMS) that consists of volunteer employees trained to respond to any workplace emergency. The system is modeled on the IMS system used by fire, police, and emergency medical-service responders. It provides for overall command and control of any emergency incident. It improves communication between IMS personnel and the fire, police, and medical personnel who respond to a call for help. It also provides appropriate emergency assistance during the first few minutes it takes for emergency responders to arrive.

EMERGENCY RESPONSE PROCEDURES

Emergency procedures are important because they tell employees exactly what to do to ensure their safety during an emergency to accomplish each of the following tasks:

- Report emergencies to local fire and police departments
- Inform the emergency chain of command of an emergency
- Warn employees about an emergency
- Conduct an orderly, efficient workplace evacuation
- Assist employees with disabilities or injuries during an evacuation
- Shut down critical equipment, operate fire extinguishers, and perform other essential services during an evacuation
- Account for employees at a designated safe area after an evacuation
- Perform rescue and first aid that may be necessary during an emergency

OTHER CRITICAL INFORMATION

The following are included in our Company procedures:

- The names of the incident commander, the on-scene coordinators, and others responsible for carrying out the plan, and how to contact them during an emergency
- The name of the person who has the authority to order a workplace evacuation (typically, the incident commander)
- The names and phone numbers of those who understand the Emergency Plan and will inform others about it (typically the incident commander and the on-scene coordinators)

PLANNING CONSIDERATIONS – ACCOUNTING FOR EMPLOYEES AFTER AN EVACUATION

A designated meeting area a safe distance away from the emergency site will be identified in advance to ensure that employees know they must meet there after they evacuate the workplace. An on-scene coordinator should take a “Roll-Call” to identify employees not present. A determination will need to be made as to what information or assistance employees may need if they cannot return to the workplace after an evacuation.

ALERTING EMPLOYEES TO AN EMERGENCY

The Company may use a public address system, portable radios, an alarm, an air-horn, or any other means that will reach and warn all employees. Alarms will be distinctive, be recognizable by all employees, and have a back-up power supply in case the primary power fails. We may need alarms that employees can hear and see.

CONDUCTING EMPLOYEE RESCUES

It takes more than good intentions to save lives. Would-be rescuers can endanger themselves and those they are trying to rescue. During most emergencies, leave rescue work to professional responders who are appropriately trained and equipped. The exceptions would be during a catastrophe, such as a severe earthquake, that could delay professional emergency responders for hours or days. Also, jobs such as handling hazardous substances or working in confined spaces could result in emergencies for which fire or police departments are not trained. We will need to find out what kind of emergencies local responders are trained and equipped to respond to. If they are unable to respond to emergencies unique to our workplace, our employees must be trained and able to respond promptly.

COORDINATING WITH MULTI-EMPLOYER WORKPLACES

If we happen to share a facility, building, or worksite with other employers, we will consider working with them to develop, if feasible, a facility-wide Emergency Plan. If a facility-wide plan is not feasible, we will ensure that our plan does not conflict with the plans of the other employers in the facility.

QUICK-RESPONSE TEAMS

A quick-response team consists of volunteer employees trained to handle workplace incidents that require immediate action, such as medical emergencies, threatening or violent people, and hazardous-substance releases. The following considerations are relevant to quick response teams:

- Types of incidents that require immediate action
- Roles and responsibilities of team members
- Communication and response procedures for the team

TRAINING EMPLOYEES ABOUT EMERGENCIES AND EVACUATIONS

To protect themselves during an emergency, all employees must understand the following elements of the Emergency Plan:

- The roles of the incident commander and on-scene coordinators
- How to respond to threats and intimidation
- The method(s) for warning employees of emergencies
- The method for contacting employees' next of kin after an emergency
- The procedure for summoning emergency responders
- The location of safe meeting areas
- How to respond to an emergency and to an order to evacuate

New employees will be trained about the Emergency Plan when they are first hired and all employees will be informed about any changes to the plan.

On-scene coordinators will be trained in first aid and CPR, bloodborne-pathogen protection, and how to use rescue equipment.

Regular training drills will be scheduled so that employees can practice. Outside fire and police departments will be included in the drills when possible. The effectiveness of each drill will be evaluated and activities that need strengthening will be identified. The results will be shared with all employees.

When a workplace emergency requires an evacuation, all employees must know to leave, what emergency exits to take, and where to meet. Employees may also need to know how to shut down critical equipment during an evacuation.

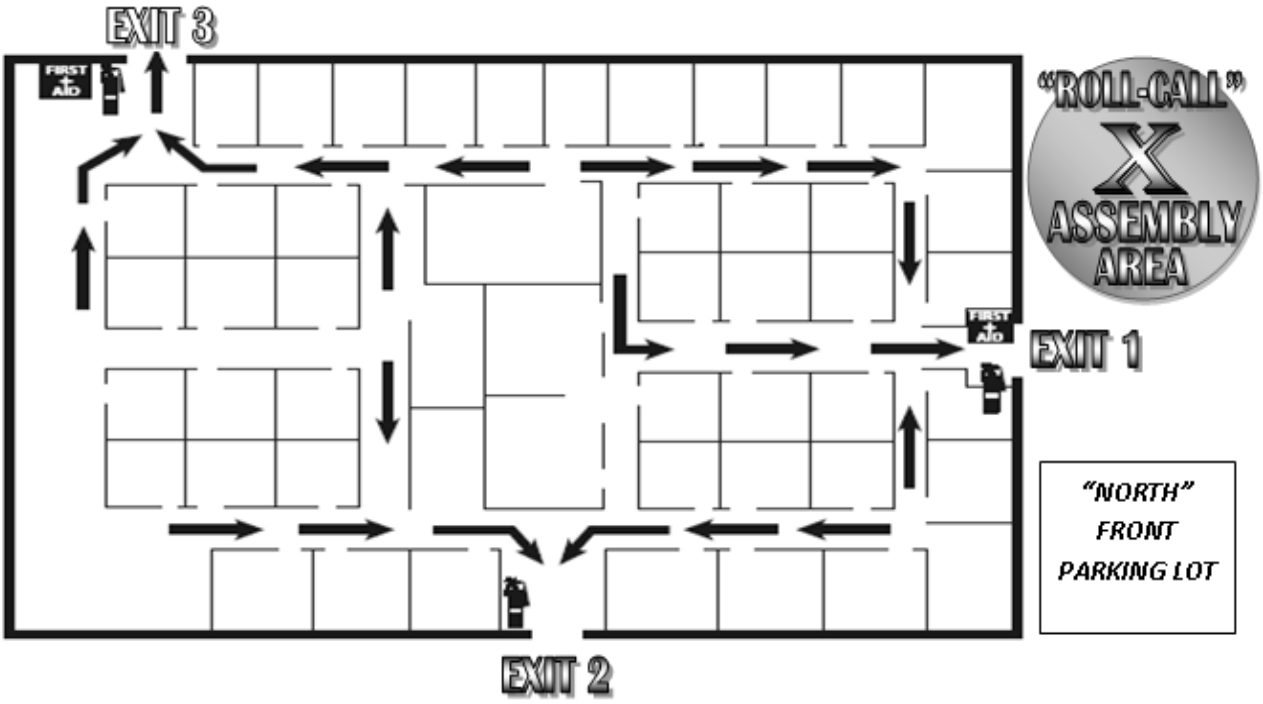
EVACUATION EXITS

Our workplaces will have a primary evacuation exit and an alternate exit. Diagrams will be posted that show the evacuation routes and the exits where all employees will see them. The exits and exit routes will be identified. Characteristics of exits include:

- They are clearly marked, well lit, and visible under emergency conditions
- They are wide enough to accommodate employees during an evacuation
- They are unobstructed and clear of debris at all times
- They are unlikely to expose employees to other hazards

An essential part of our Emergency Plan is an evacuation diagram – a floor plan of the facility or workplace that shows evacuation exits and describes the emergency evacuation procedure. Mark the exit routes and the “Roll-Call” assembly area on the diagram so that they are easy to see, for example:

Solomon Corporation Main Office & Shop



EXIT ROUTES

How would you escape from your workplace in an emergency? Do you know where all the exits are in case your first choice is too crowded? Are you sure the doors will be unlocked and that the exit access behind them will not be blocked during a fire, explosion, or other crisis? Knowing the answers to these questions could keep you safe during an emergency.

WORKPLACE EXIT ROUTES

Usually, a workplace must have at least two exit routes for prompt evacuation. But more than two exits are required if the number of employees, size of the building, or arrangement of the workplace will not allow a safe evacuation. Exit routes must be located as far away as practical from each other in case one is blocked by fire or smoke.

GENERAL REQUIREMENTS FOR EXITS

- Exits must be separated from the workplace by fire-resistant materials – that is, a one-hour fire-resistance rating if the exit connects three or fewer stories, and a two-hour fire-resistance rating if the exit connects more than three floors
- Exits can have only those openings necessary to allow access to the exit from occupied areas of the workplace or to the exit discharge. Openings must be protected by a self-closing, approved fire door that remains closed or automatically closes in an emergency
- Always keep the line-of-sight to exit signs clearly visible
- Install “EXIT” signs using plainly legible letters

SAFETY FEATURES FOR EXIT ROUTES

- Keep exit routes free of explosives or highly flammable materials, equipment, or other obstructions
- Exit routes will be arranged so that employees will not have to travel toward a high-hazard area unless the path of travel is effectively shielded from the high-hazard area
- Ensure that exit routes are free and unobstructed by materials, equipment, locked doors, or dead-end corridors
- Provide lighting for exit routes adequate for employees with normal vision
- Keep exit route doors free of decorations or signs that obscure their visibility of exit route doors
- Post signs along the exit access indicating the direction of travel to the nearest exit and exit discharge if that direction is not immediately apparent
- Mark doors or passages along an exit access that could be mistaken for an exit “Not an Exit” or with a sign identifying its use (such as “Closet”)
- Maintain exit routes during construction, repairs, or alterations

DESIGN AND CONSTRUCTION REQUIREMENTS

- Exit routes must be permanent parts of the workplace
- Exit discharges must lead directly outside or to a street, walkway, refuge area, public way, or open space with access to the outside
- Exit discharge areas must be large enough to accommodate people likely to use the exit route
- Exit route doors must unlock from the inside. They must be free of devices or alarms that could restrict use of the exit route if the device or alarm fails
- Exit routes can be connected to rooms only by side-hinged doors that swing out in the direction of travel if the room may be occupied by more than 50 people
- Exit routes must support the maximum permitted occupant load for each floor served, and the capacity of an exit route may not decrease in the direction of exit route travel to the exit discharge
- Exit routes must have ceilings at least 7 ft., 6 in. high. An exit access must be at least 28 inches wide at all points

PROVIDING MEDICAL ASSISTANCE AND FIRST AID

If there is not an emergency clinic or hospital nearby that will admit victims of emergencies from our workplace then on-scene coordinators will ensure that some members of on-site personnel have appropriate first-aid training and supplies.

RECORDING CRITICAL EMPLOYEE INFORMATION

After a medical emergency, an employee may be unable to contact next of kin or other relatives. Supervisors will have access to employees' home telephone numbers, the names and telephone numbers of family members they want you to contact, physician names and phone numbers, and information employees have given about their medical conditions or medications. This information will be kept with employees' permanent employment records and updated annually.

REPORTING FIRE AND OTHER EMERGENCIES

Our Emergency Plan has a procedure for reporting fires and other emergencies to professional responders. Report all fires by calling 911. Fires are generally not reported to fire departments by fire alarms; most fire alarms warn only building occupants. The incident commander will stay in a safe location to oversee and relay relevant information to professional emergency responders.

SELECTING AND USING PERSONAL PROTECTIVE EQUIPMENT

Personal protective equipment includes clothing and equipment that protects emergency responders against specific hazards. Examples include work gloves, goggles, hard hats, and respirators.

Properly used, personal protective equipment offers protection against a hazard but does not eliminate the hazard. If it fails or is not appropriate for a particular task, the user risks exposure.

Appropriate, effective protection depends on selecting, wearing, and using the equipment properly. The following steps outline the procedures for selecting personal protective equipment:

1. Identify emergency-related hazards for which personal protective equipment may be necessary; for example, those responding to medical emergencies need protection from bloodborne pathogens
2. Determine which personal protective equipment will protect users from the hazards; for example, latex gloves and face shields may be necessary to protect responders from bloodborne pathogens
3. Determine who will use the equipment; it is critical that the equipment fit the user and not cause allergic reactions or other health problems
4. Determine the conditions under which responders will use the equipment; the equipment must not fail under those conditions
5. Ensure that emergency responders know how to use the equipment. Whether they are wearing hard hats or atmosphere-supplying respirators, responders will know how the equipment will protect them and when it will not protect them. Responders will know how to wear, use, and maintain the equipment, and how to discard contaminated equipment

TYPES OF EMERGENCIES

Following are types of emergencies that could affect workplaces and summarizes what to do when responding to them. Consider factors such as workplace size and location, number of employees on-site, and the nature of their work in determining how to respond.

EARTHQUAKE

During an earthquake, people in most workplaces are at greatest risk from collapsing ceilings, windows, light fixtures, and other falling objects. If you are indoors, the safest response is to take cover under sturdy furniture or to brace yourself against an inside wall. Stay away from windows, skylights, bookcases, and other heavy objects. Protect your head and neck.

What to do:

- If indoors, stay there. Take cover under sturdy furniture or against inside walls
- Do not use elevators
- Stay away from windows, skylights, and other objects that could fall
- Use stairways to leave the workplace if the order is given to evacuate

Be ready to rescue victims; professional responders may not be able to respond; remove victims to a triage area if possible

EXPLOSION

Any workplace that handles, stores, or processes flammable gases, liquids, and solids is vulnerable. Explosions offer no warnings, causing disorganization and panic.

What to do:

- Try to establish communication with on-scene coordinators
- Assess damage to the workplace and estimate human casualties
- Administer first aid if it is safe to do so
- Do not use elevators
- Evacuate following established procedures

FIRE

If needed, invite a local fire department representative to our workplace to help identify fire hazards and to discuss how our workplace should respond to a fire. It is the byproducts of fire – smoke and fire gasses – that kill. A quick, orderly evacuation is the most effective response to an out-of-control fire.

What to do:

- Pull the fire alarm (or set off the predetermined signal)
- Call 911; tell the dispatcher the location and the nature of the emergency
- Inform an on-scene coordinator
- Do not use elevators
- Use ONE fire extinguisher for incipient stage fires or fires that can be extinguished with ONE extinguisher, fire extinguishers may be used for escape purposes

If on-scene coordinators or other employees are permitted to use fire extinguishers, they will be properly trained in their use for incipient stage fires and escape.

HAZARDOUS-SUBSTANCE RELEASE

Hazardous substances include solvents, pesticides, paints, petroleum products, and heavy metals – any substance hazardous to health. Even if our workplace does not use hazardous substances, could it be affected by a nearby release or an accident on a local freeway? If so, our Emergency Plan describes how the scene commander and coordinators will respond and notify fire and police departments.

What to do:

- Inform the incident commander
- Evacuate the area surrounding the release
- Call 911; tell the dispatcher the location and the nature of the emergency

If our workplace uses hazardous chemicals, our Company Hazard Communication (HAZCOM) Program requires that we inventory them, keep the manufacturer-supplied material safety data sheets, label the chemical containers, and train employees to protect themselves from the chemicals' hazards.

If employees must wear personal protective equipment during an emergency – chemical suits, gloves, hoods, boots, or respirators, for example – make sure that equipment will be available when they need it, that it fits them, and that they know how to use it.

MEDICAL

The most likely workplace emergency is a medical emergency. A serious medical emergency such as cardiac arrest requires immediate attention – response time is critical. It is essential that medical first responders know how to perform first aid/CPR.

What to do:

- Call 911. Tell the dispatcher the location and the nature of the emergency
- Do not move the victim
- Notify an on-scene coordinator for CPR or other first-aid tasks
- Inform the incident commander
- Assist professional medical responders when they arrive
- Inform the victim's supervisor

WEATHER-RELATED EVENT

Hurricanes, tornadoes, blizzards, and floods are likely to be the cause of weather-related workplace emergencies. Many communities experience floods following warm spring rain. Winter storms often bring strong winds, freezing rain, and snow that can cause structural damage and power outages.

What to do:

- Wait for instructions from the incident commander; a power failure will slow communication
- Tune a battery-powered radio to a station that broadcasts local news
- Do not evacuate the workplace unless ordered to do so

THREATS OF VIOLENCE

Threats of violence may be delivered in any form: face-to-face, by fax, e-mail, phone, or in writing. Threats can be directed toward the workplace or toward a specific person. Police departments, mental health professionals, and employee-assistance program counselors offer prevention information, security inspections, and employee training that help reduce the risk of workplace violence.

What to do:

- Inform an on-scene coordinator
- Activate a silent alarm if your workplace has one
- Isolate the threatening person if it is possible to do so safely
- Inform the incident commander

BOMB THREATS

Take all bomb threats seriously. Do not use fire alarms or phones in the building – they generate radio waves that could trigger a bomb. If someone finds a package that may contain or that may be a bomb, he or she should note its size, shape, and whether it emits a sound, and then notify the incident commander. Call 911 from outside the building to report the emergency and determine if an evacuation is necessary. Use a communication method that does not generate radio waves to order the evacuation.

Consider offering Threat-management training is available to on-scene coordinators and if appropriate, members of quick-response teams.

TERRORISM

Although terrorist acts pose minimal risks to most workplaces, the devastating effects of recent acts have changed the perception of a “secure workplace” and added a new dimension to emergency planning. What distinguishes terrorist acts is the use of threats and violence to intimidate or coerce. Factors to consider in emergency planning include the following:

HOW DO OTHERS PERCEIVE THE MISSION OF OUR COMPANY IN THESE CONTEXTS?

- Political activities
- Business activities
- Economic activities
- Social responsibilities

HOW VULNERABLE ARE OUR CRITICAL RESOURCES FROM TERRORIST ATTACK?

- Production machinery and equipment
- Mail and HVAC systems
- Electronic communication, power, data, and systems hardware
- Real estate and other physical property
- Finance and administrative transactions
- Employees at the workplace or at other locations

EMERGENCY ACTION PLAN

To be posted at all Company facilities and workplaces

Company Name:	Job Location:	
Street Address:		
City:	State:	ZIP:
Prepared By: (Print Name of Preparer)		
Title:	Phone Number:	
Signature:	Date:	
Emergency-Scene Commander	Emergency-Scene Coordinator	

PURPOSE
This Plan identifies necessary management and employee actions during fires and other emergencies. Education and training are provided so that all employees know and understand the Emergency Action Plan.
LOCATION OF PLAN
The Emergency Action Plan can be found at the station or office of each: (Foreman, Supervisor, etc.) A copy is also maintained in THE COMPANY general offices.
Upon request, an OSHA representative may obtain a copy of the plan from: (Name and Title)
EXIT ROUTES
Draw a diagram of jobsite or facility exit routes in space below: Locate meeting place or “Roll-Call” area on above diagram:

ACCOUNTING FOR EMPLOYEES
After exiting, all employees are to assemble for “Roll-Call” at this location: Note location on above diagram
The following persons are responsible for ensuring that employees comply with this requirement:
Name and Title:
Name and Title:

CRITICAL OPERATIONS	
To minimize damage from the emergency, the following personnel are responsible for shutting down the listed critical operations:	
Personnel Names	Critical Operations
As soon as shutdowns are completed, the employees who performed critical operations Will take the nearest exit route in accordance with general emergency procedures.	

RESCUE AND MEDICAL DUTIES	
The following personnel are certified and trained in both CPR and general first aid. These persons are to be contacted as specified in the “General Emergency Training”:	
Name and Title	Phone Number

REPORTING EMERGENCIES	
The following personnel have the duty of contacting public responders to come to the emergency scene. The personnel are listed in descending order of availability:	
Name and Title	Phone Number

ALARM SYSTEMS AND NOTIFICATION OF EMERGENCIES
In the event of a workplace or facility emergency, employees will be notified as follows:
Identify method(s) of notification:
TYPES OF EVACUATION
OSHA requires to have an established system of types of evacuation to follow for different emergency circumstances. The following listing represents company policy for various emergency situations:
PARTIAL EVACUATION: Code Yellow – 3 rings or horn blasts: RESPONDERS (trained extinguisher personnel and trained rescue and medical personnel)
FULL EVACUATION: Code Red – 4 rings or horn blasts: RESPONDERS (n/a)
NOTE: If there is more than one evacuation type, the alarm signal for each will be distinctive.
OTHER: (describe)
OTHER: (describe)
PUBLIC EMERGENCY RESPONSE INFORMATION
Ensure that 911 emergency services cover the area this Emergency Action Plan covers.
Local Police Department:
Local Fire Department:
Local Ambulance/EMS:
Local Hospital:
FURTHER INFORMATION
For further information or explanation about any duties under this Plan, contact:
Name and Title:
Name and Title:
This Emergency Action Plan is authorized and approved by: Name Signature Title Date

POLICY

Solomon Corporation has implemented this policy to ensure proper safe work practices and procedures are followed to protect employees from the fall hazards.

REFERENCES

- 1926 Subpart M, Fall protection
- § 1926.500, Scope, application, and definitions applicable to this subpart
- § 1926.501, Duty to have fall protection
- § 1926.502, Fall protection systems criteria and practices
- § 1926.503, Training requirements
- Appendix A, Determining roof widths - Non-mandatory guidelines for complying with 1926.501(b)(10)
- Appendix B, Guardrail systems - Non-mandatory guidelines for complying with 1926.502(b)
- Appendix C, Personal fall arrest systems - Non-mandatory guidelines for complying with 1926.502(d)
- Appendix D, Positioning device systems - Non-mandatory guidelines for complying with 1926.502(e)
- Appendix E, Sample fall protection plan - Non-mandatory guidelines for complying with 1926.502(k)

RESPONSIBILITIES

Employer Responsibilities

Solomon Corporation will provide at no cost to employees fall protection such as guard rails, safety nets, or personal fall arrest systems whenever employees are potentially exposed to falls to lower levels from heights of six feet or greater. This includes work near and around bins, tanks and excavations. Exception: When the standard methods of protection are not feasible or a greater hazard would be created. The exposure determination will be made without regards to the use of PPE.

Solomon Corporation is responsible for:

- Ensuring that safety inspections of the facility occur on regular basis
- Training personnel in fall protection equipment selection and use
- Responding quickly to eliminate workplace hazards
- Ensuring all equipment is kept in good repair
- Ensuring employees follow safe job procedures
- Reviewing job hazard analysis whenever there is a significant change to any element of the job or there has been an injury or illness

Corporate EH&S Manager Mike Dahl Responsibilities

Corporate EH&S Manager Mike Dahl is the Program Administrator – designated qualified person - responsible for managing the Fall Protection Program. *Corporate EH&S Manager Mike Dahl* will specify a fall protection system for each work-site, supervise its implementation, and inspect the system prior to use.

Safety Committee Responsibilities

- Assist in fall protection as necessary
- Assist in training employees to recognize and control workplace hazards
- Monitor the workplace for hazards
- Encourage employees to report hazards
- Implement appropriate controls
- Ensure corrective action is taken promptly

Employee Responsibilities

Employees will comply with the fall protection program at all times when working at heights of 6 feet or above will wear appropriate PPE (The fall protection system used will be appropriate for the specific work location or situation using best practices).

All employees are expected to: assist in job hazard analyses; follow safe job procedures; and report hazards to a supervisor immediately

TRAINING

Corporate EH&S Manager Mike Dahl will ensure that all employees who participate in work where fall hazards are present are trained in recognition of fall hazards, fall protection procedures, equipment, and work practices. Written certification records will be maintained showing who was trained, types of training, dates of training, signature of person providing training, and the date training was determined to be adequate. Employees will be certified upon completion of training in the following areas:

- The nature of fall hazards in the work area
- The correct procedures for erecting, maintaining, disassembling, and inspecting the fall protection systems to be used
- The use and operation of guardrail systems, personal fall arrest systems, safety net systems, warning line systems, safety monitoring systems, personal fall restraint systems, slide guard systems, positioning devices, and other protection to be used
- The role of each employee in the safety monitoring system when this system is used
- The limitations on mechanical equipment use of during roofing
- The correct procedures for the handling and storage of equipment and materials and the erection of overhead protection
- The role of employees in the fall protection work plan

Employee re-training in fall protection will be provided when: previous training is deemed deficient; changes in work environment occur which would necessitate additional training; changes in fall protection equipment or systems occur; employee is observed applying unsafe work practices.

PROCEDURES

Prior to the start of work, Corporate EH&S Manager Mike Dahl will make an initial survey of the types of fall hazards which are expected to be encountered and develop a plan relative to providing the kind and number of safeguards that will protect against these fall hazards. Each employee on a walking/working surface (horizontal and vertical surface) with an unprotected side or edge which is 6 feet or more above a lower level will be protected from falling by the use of guardrail systems, safety nets, or personal fall arrest systems.

- All accidents and serious incidents involving Solomon Corporation employees will be reported immediately to the supervisor for the work location. All accidents/incidents will be investigated under the guidelines of the company Accident Investigation Program. Changes will be implemented to the Fall Protection Plan as necessary
- Solomon Corporation will provide for prompt rescue of employees in the event of a fall or will assure the employees are able to rescue themselves
- All materials and equipment purchased and used at Solomon Corporation for fall protection will comply to ANSI and ASTM standards required for that material or equipment

Fall Protection Locations

Fall protection is required wherever the potential to fall 6 feet or more exists. Fall protection is not needed if an employee or employees are on a low sloped roof for inspection/observation, provided that they do not approach within 8 feet of the roof's edge.

Fall Protection Work Plans

Corporate EH&S Manager Mike Dahl will develop and implement a written fall-protection work plan including each area of the work place where employees are assigned and where fall hazards of 6 feet or more exist. It is recommended that the written plan be upgraded as conditions change. The fall-protection work plan will:

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

Fall-Restraint & Fall-Arrest Systems

Corporate EH&S Manager Mike Dahl will ensure that fall-restraint or fall-arrest systems are provided, installed, and implemented according to the following requirements. Fall-restraint and arrest protection will consist of:

Standard Guardrails

- Top rail 39 to 45 inches above the working surface, and must be smooth and of a shape to permit grasping easily
- Midrail (center between riser and top rail), screen or mesh (continuous) or intermediate vertical members (not more than 19 inches apart) will be provided between the top rail and working surface
- Guardrail systems will be capable of supporting 250 pounds in the downward or outward direction at any point along the top edge
- Midrail will support a 150-pound load in the downward or outward direction
- Top rails and midrails will be at least 1/4-inch nominal thickness. Plastic or steel banding will not be used
- Chain gates will be used to cover hoisting areas, and the guardrails will extend 4 feet minimum on either side of the opening
- Rails will be so constructed so as not to deflect under test loads. If cable or rope is used it will have tension-adjusting capability and remain taut at all times
- Wood Railings: Wood components will be minimum 1500 lb.-ft. / in.^{2} fiber (stress grade) construction grade lumber. Posts will be at least 2-inch by 4-inch (5 cm x 10 cm) lumber spaced not more than 8 feet (2.4 m) apart on centers. The top rail will be at least 2-inch by 4-inch (5 cm x 10 cm) lumber; the intermediate rail will be at least 1-inch by 6-inch (2.5 cm x 15 cm) lumber
- Pipe Railings: Post, top rails, and intermediate railings will be at least one and one-half inches nominal diameter (schedule 40 pipe) with posts spaced not more than 8 feet (2.4 m) apart on centers
- Structural Steel Railings: Posts, top rails, and intermediate rails will be at least 2-inch by 2-inch (5 cm x 10 cm) by 3/8-inch (1.1 cm) angles, with posts spaced not more than 8 feet (2.4 m) apart on centers

PORTABLE GUARDRAILS

- Portable guardrails may be used in locations where permanent guardrails are not feasible
- Top rail 39 to 45 inches above the working surface, and must be smooth and of a shape to permit grasping easily
- Midrail (center between riser and top rail), screen or mesh (continuous) or intermediate vertical members (not more than 19 inches apart) will be provided between the top rail and working surface
- Guardrail systems will be capable of supporting 250 pounds in the downward or outward direction at any point along the top edge
- Midrail will support a 150-pound load in the downward or outward direction

HARNESS, LANYARDS, LIFELINES & ANCHOR POINTS

- An approved Class III full-body harness will be used
- All full-body harness and lanyard hardware assemblies will be capable of withstanding a tensile loading of 4,000 pounds without cracking, breaking, or taking a permanent deformation
- Anchorage points used for fall restraint will supporting four times the intended load
- Restraint protection and positioning devices will be rigged to allow the movement of employees only as far as the sides and edges of the walking / working surface
- Full-body harnesses will be attached to securely rigged restraint lines
- Rope-grab devices are prohibited for fall-restraint applications unless they are part of a fall-restraint system designed specifically for the purpose by the manufacturer and used in strict accordance with the manufacturer's recommendations and instructions
- Corporate EH&S Manager Mike Dahl will ensure component compatibility
- Body-harness systems or components subject to impact loading will be immediately removed from service and will not be used again for employee protection unless inspected and determined by a competent person to be undamaged and suitable for reuse
- All safety lines and lanyards will be protected against being cut or abraded
- Body-harness systems will be rigged to minimize free-fall distance with a maximum free-fall distance allowed of 6 feet, and ensure that employees will not contact any lower level
- Hardware will have a corrosion-resistant finish and all surfaces and edges will be smooth to prevent damage to the attached body harness or lanyard
- When vertical lifelines (droplines) are used, not more than one employee will be attached to any one lifeline
- Full-body harness systems will be secured to anchorages capable of supporting 5,000 pounds per employee, except when self-retracting lifelines or other deceleration devices are used which limit free fall to two feet; in this case, anchorages will be capable of supporting 3,000 pounds
- Independent lifelines (droplines) will have a minimum tensile strength of 5,200 pounds, except that self-retracting lifelines and lanyards, which automatically limit free-fall distance to two feet or less, will have a minimum tensile strength of 3,000 pounds
- Horizontal lifelines will have a tensile strength capable of supporting a fall-impact load of at least 5,200 pounds per employee using the lifeline, applied anywhere along the lifeline
- Lanyards will have a minimum tensile strength of 5,200 pounds
- All components of body-harness systems whose strength is not otherwise specified in this section will be capable of supporting a minimum fall-impact load of 5,000 pounds applied at the lanyard point of connection
- Snap-hooks will not be connected to loops made in webbing-type lanyards
- Snap-hooks will not be connected to each other
- Not more than one snap-hook will be connected to any one D-ring

- Independent lifelines used on rock-scaling operations, or in areas where the lifeline may be subjected to cutting or abrasion, will be a minimum of 7/8-inch wire core manila rope. For all other lifeline applications, a minimum of 3/4-inch manila rope or its equivalent, with a minimum breaking strength of 5,000 pounds, will be used
- Safety harnesses, lanyards, and lifelines, independently attached or attended, will be used while performing the following types of work when other equivalent protection is not provided:
  - Work in hoppers, bins, silos, tanks, or other confined spaces
  - Work on hazardous slopes, or dismantling safety nets
  - Working on poles or from boatswains chairs at elevations
- Fall protection will be used when working at heights greater than six feet, on swinging scaffolds or other unguarded locations, and work on skips and platforms used in shafts by crews when the skip or cage does not include the opening to within one foot of the sides of the shaft, unless cages are provided
- Full-body harness systems will be inspected prior to each use for mildew, wear, damage, and other deterioration, and defective components will be removed from service if their function or strength has been adversely affected

SAFETY NETS

- Safety nets will be installed as close as practicable under the walking/working surface on which employees are working, but in no case more than 30 feet (9.1 m) below such level. When nets are used on bridges, the potential fall area from the walking/working surface to the net will be unobstructed
- Safety nets will extend outward from the outermost projection of the work surface as follows:

Vertical distance from working level to horizontal plane of net	Minimum required horizontal distance of outer edge of net from the edge of the working surface
Up to 5 feet	8 feet
More than 5 feet up to 10 feet	10 feet
More than 10 feet	13 feet

- Safety nets will be installed with sufficient clearance under them to prevent contact with the surface or structures below when subjected to an impact force equal to the drop test specified in the full-body harness section
- Safety nets and their installations will be capable of absorbing an impact force equal to that produced by the drop test specified in the full-body harness section
- Safety nets and safety-net installations will be drop-tested at the job site before being used as a fall-protection system. The drop-test will consist of a 400-pound bag of sand 30+2 inches in diameter dropped into the net from the highest walking / working surface on which employees are to be protected. Exception: when the employer can demonstrate that a drop-test is not feasible or practicable, the net and net installation will be certified by a qualified person to be in compliance with the provisions of this section

- Safety nets will be inspected weekly for mildew, wear, damage, and other deterioration, and defective components will be removed from service
- Materials, scrap pieces, and tools which have fallen into the safety net will be removed as soon as possible from the net, and at least before the next work shift
- The maximum size of each safety net mesh opening will not exceed 36 square inches nor be longer than six inches on any side measured center-to-center of mesh ropes or webbing. All mesh crossings will be secured to prevent the enlargement of any mesh opening
- Each safety net (or section of it) will have a border rope for webbing with a minimum breaking strength of 5,000 pounds
- Connections between the safety-net panels will be as strong as integral net components and will be spaced not more than six inches apart

CATCH PLATFORMS

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

Guarding Of Low-Pitched Roof Perimeters

During the performance of work on low-pitched roofs with a ground-to-eaves height greater than 6 feet, Corporate EH&S Manager Mike Dahl will ensure that employees engaged in such work be protected from falling from all unprotected sides and edges of the roof as follows:

- By the use of a fall-restraint or fall-arrest system, as defined in applicable OSHA or state regulations
- Mechanical equipment will be used or stored only in areas where employees are protected by a warning line system, or fall-restraint, or fall-arrest systems as described in applicable OSHA or state regulations. Mechanical equipment may not be used or stored where the only protection is provided by the use of a safety monitor
- The general provisions section of this section do not apply at points of access such as stairways, ladders and ramps, or when employees are on the roof only to inspect, investigate, or estimate roof-level conditions. Roof-edge materials handling areas and materials storage areas will be guarded as provided in the roof-edge materials handling section of this section
- Workers engaged in built-up roofing on low-pitched roofs less than 50 feet wide may use a safety system without warning lines where the use of hot tar poses additional hazards

Warning-Line Systems & Access Paths

- When mechanical equipment is not being used, the warning line will be erected not less than 6 feet (1.8 m) from the roof edge
- When mechanical equipment is being used, the warning line will be erected not less than 6 feet (1.8 m) from the roof edge which is parallel to the direction of mechanical equipment operation, and not less than 10 feet (3.1 m) from the roof edge which is perpendicular to the direction of mechanical equipment operation
- Points of access, materials handling areas, storage areas, and hoisting areas will be connected to the work area by an access path formed by two warning lines
- When the path to a point of access is not in use, a rope, wire, chain, or other barricade, equivalent in strength and height to the warning line, will be placed across the path at the point where the path intersects the warning line erected around the work area, or the path will be offset such that a person cannot walk directly into the work area
- Warning lines will be erected around all sides of the work area for work 6 to 10 feet from the roof edge.
- A warning-line system as prescribed in 29 CFR 1926.500 and supplemented by the use of a safety-monitor system as prescribed in 29 CFR 1926.500 to protect any employee engaged in duties between the forward edge of the warning line and the unprotected sides and edges, including the leading edge, of a low-pitched roof or walking/working surface
- Warning line and safety monitor systems as described in 29 CFR 1926.500 are prohibited on surfaces exceeding a 4/12 pitch, and on any surface whose dimensions are less than 45 inches in all directions
- The warning line will consist of a rope, wire, or chain and supporting stanchions
- The rope, wire, or chain will be flagged at not more than six feet intervals with high-visibility material
- The rope, wire, or chain will be rigged and supported in such a way that its lowest point (including sag) is no less than 39 inches from the roof surface and its highest point is no more than 45 inches from the roof surface
- After being erected, with the rope, wire or chain attached, stanchions will be capable of resisting, without tipping over, a force of at least 16 pounds applied horizontally against the stanchion, 30 inches above the roof surface, perpendicular to the warning line, and in the direction of the roof edge
- The rope, wire, or chain will have a minimum tensile strength of 500 pounds, and after being attached to the stanchions, will be capable of supporting, without breaking, the loads applied to the stanchions
- The line will be attached at each stanchion in such a way that pulling of one section of line between stanchions will not result in slack being taken up in adjacent sections before the stanchion tips over.
- Access paths: points of access, materials-handling areas, and storage areas will be connected to the work area by a clear access path formed by two warning lines.
- When the path to a point of access is not in use, a rope, wire or chain, equal in strength and height to the warning line, will be placed at the point where the path intersects the warning line erected around the work area.

Roof-edge Materials-Handling Areas & Materials Storage

Employees working in a roof-edge materials-handling or materials storage area location on a low-pitched roof with a ground-to-work-area height greater than six feet will be protected from falling along all unprotected roof sides and edges of the area.

- When guardrails are used at hoisting areas, a minimum of four feet of guardrail will be erected on each side of the access point through which materials are hoisted
- A chain or gate will be placed across the opening between the guardrail sections when hoisting operations are not taking place
- When guardrails are used at bitumen pipe outlets, a minimum of four feet of guardrail will be erected on each side of the pipe
- When safety-harness systems are used, they will not be attached to the hoist
- When fall-restraint systems are used, they will be rigged to allow the movement of employees only as far as the roof edge
- Materials will not be stored within six feet of the roof edge unless guardrails are erected at the roof edge

Leading-Edge Control Zone

When performing leading-edge work, *Corporate EH&S Manager Mike Dahl* will ensure that a control zone is established according to the following requirements:

- The control zone will begin a minimum of six feet back from the leading edge to prevent exposure by employees who are not protected by fall-restraint or fall-arrest systems
- The control zone will be separated from other areas of the low-pitched roof or walking/working surface by the erection of a warning-line system
- The warning-line system will consist of wire, rope, or chain supported on stanchions, or a method which provides equivalent protection
- The spacing of the stanchions and support of the line will be such that the lowest point of the line (including sag) is not less than 39 inches from the walking / working surface, and its highest point is not more than 45 inches from the working / walking surface
- Each line will have a minimum tensile strength of 500 pounds
- Each line will be flagged or clearly marked with high-visibility materials at intervals not to exceed six feet

Safety-Monitor System

The employer will designate a competent person to monitor the safety of other employees and the employer will ensure that the safety monitor complies with the following requirements:

- The safety monitoring system will not be used as a fall protection system for any work other than roofing work on roof slopes of 2 in 12 (vertical to horizontal) or less
- Use of a safety monitoring system alone (i.e., without the warning line system) is not permitted on roofs more than 50 feet (15.25 m) in width
- When selected, the employer will ensure that the safety-monitor system will be addressed in the fall-protection work plan, include the name of the safety monitor(s) and the extent of their training in both the safety-monitor and warning-line systems, and will ensure that the following requirements are met:
  - The safety-monitor system will not be used when adverse weather conditions create additional hazards.
  - A person acting in the capacity of a safety monitor will be trained in the function of both the safety-monitor and warning-lines systems
  - The safety monitor will:
    - Be a competent person as defined in 29 CFR 1926.32(f)
    - Have control authority over the work as it relates to fall protection
    - Be instantly distinguishable from members of the work crew
    - Engage in no other duties while acting as safety monitor
    - Be positioned in relation to the workers under their protection, so as to have a clear, unobstructed view and be able to maintain normal voice communication
    - Not supervise more than eight exposed employees at one time
- Control zone workers will be distinguished from other members of the crew by wearing a high-visibility vest only while in the control zone

TRAINING RECORD

Trainer:
Signature:
Date:
Content of Training:

Attendees	
Print Name:	**Signature:**

POLICY

Solomon Corporation has adopted this policy to inform employees of the Fatigue Management Plan. This ensures the safety and health of the employees.

RESPONSIBILITIES

Fatigue Management is a shared responsibility between the Company and its employees.

EMPLOYER RESPONSIBILITIES

- Ensuring all employees are physically fit and capable to perform the job duties assigned
- Training personnel to recognize and manage fatigue
- Responding quickly to eliminate workplace hazards
- Providing adequate rest breaks
- Ensuring employees follow safe job procedures
- Reviewing job hazard analysis whenever there is a significant change to any element of the job or there has been an injury or illness

SUPERVISOR RESPONSIBILITIES

- Establishing and maintaining safe and healthful working conditions
- Monitoring employee fatigue
- Ensuring employees are not impaired by illness or medication use
- Setting good examples, instructing their employees, making sure they fully understand and follow safe procedures

EMPLOYEE RESPONSIBILITIES

- Notifying their supervisors if they are fatigued to the point of not being able to perform their duties safely
- Ensuring they are physically and mentally fit to perform their job functions safely; they must take responsibility for their own safety as well
- Notifying their supervisor if they are taking prescription or over-the-counter medications
- No employee is expected to undertake a job until he/she has received instructions on how to do it properly and safely, and is authorized to perform the job
- No employee should undertake a job that appears to be unsafe
- Employees are to report to a superior or designated individual all unsafe conditions encountered during work
- Personal protective equipment must be used when and where required, and properly maintained

TRAINING

It is the determination of Solomon Corporation to provide initial and annual training on how to,

- Recognize fatigue
- Control fatigue through appropriate work and personal habits
- Reporting of fatigue to supervision

PROCEDURES

CONTROL OF WORKER FATIGUE

To control worker fatigue, allow for sufficient sleep, and increase mental fitness, Solomon Corporation will set work hour limitations and will control job rotation schedules.

It is the policy of Solomon Corporation to provide equipment such as:

- Anti-fatigue mats for standing
- Lift assist devices for repetitive lifting and other ergonomic devices as deemed appropriate
- Chairs to sit in periodically

Solomon Corporation will provide periodic rest breaks for personnel and will also periodically evaluate and improve work tasks to control fatigue.

Reporting Fatigue and Tiredness

It is the policy of Solomon Corporation that all employees feeling fatigue, tiredness or lack of mental acuity must report to their supervisor immediately.

Supervision must take appropriate actions to prevent loss.

OVER-THE-COUNTER AND PRESCRIPTION DRUGS

It is the determination of Solomon Corporation that employees must not use over-the-counter or prescription drugs to increase mental alertness.

All employees of Solomon Corporation are discouraged from taking any substance known to increase fatigue, including fatigue that sets in after the effects if the drug wears off.

POLICY

Solomon Corporation has implemented this policy to ensure proper safe work practices and procedures are followed for the protection of our employees against fire/explosion hazards. The following work practices, procedures, and engineering controls will be enforced as an integral part of our Company safety policy

RESPONSIBILITIES

Corporate EH&S Manager Mike Dahl is designated as the supervisor to manage the Fire Prevention Program. Solomon Corporation will have and maintain an employee alarm system. The employee alarm system will use a distinctive signal for each purpose. Corporate EH&S Manager Mike Dahl will ensure that all employees are informed and trained in the following minimum elements for Emergency Action Plans:

- Corporate EH&S Manager Mike Dahl will ensure all employees are trained in the proper operation of all types of fire extinguishers provided by the company
- Procedures for reporting a fire or other emergency
- Procedures for emergency evacuation for all areas of work, including type of evacuation and exit route assignments
- Safe assembly areas designated for all work areas in the event of evacuation
- Procedures to be followed by employees who remain to operate critical plant operations before they evacuate
- Procedures to account for all employees after evacuation
- Procedures to be followed by employees performing rescue or medical duties
- The members in the chain of command who may be contacted by employees who need more information about the Plan or for an explanation of their duties under the Plan

TRAINING

Solomon Corporation will designate and train employees to assist in a safe and orderly evacuation of other employees.

Corporate EH&S Manager Mike Dahl will review the Fire Prevention Plan with each employee covered by the plan: when each Plan is developed or an employee is initially assigned to a job; when the employee's responsibilities under the Plan change; when any element of the Plan is changed.

Fire Protection/Prevention training will be required on initial hiring and annually thereafter.

All employees will be trained in the hazards involved in using fire extinguishers for incipient stage firefighting and escape purposes. Employees are instructed to ensure the local Emergency Medical Service EMS (Fire Department) is notified before attempting to extinguish any fire, and that if a fire is not immediately extinguished using one fire extinguisher, or the fire recurs to evacuate immediately.

SAFE PRACTICES

All fire extinguishers will be inspected by Corporate EH&S Manager Mike Dahl on a monthly basis; this inspection will be recorded and documented with the required annual maintenance check. Records of inspection will be kept on file in the office.

Procedures are instructions for accomplishing specific tasks. Emergency procedures are important because they tell employees exactly what to do to ensure their safety during an emergency to accomplish each of the following tasks:

- Report emergencies to local fire and police departments
- Inform the emergency chain of command of an emergency
- Warn employees about an emergency
- Conduct an orderly, efficient workplace evacuation
- Assist employees with disabilities or injuries during an evacuation
- Shut down critical equipment, operate fire extinguishers, and perform other essential services during an evacuation. Account for employees at a designated safe area after an evacuation
- Perform rescue and first aid that may be necessary during an emergency

POLICY

It is the policy of Solomon Corporation that training in first aid response is not a requirement for employment, but that local Emergency Medical Services are utilized for emergency medical care. Corporate EH&S Manager Mike Dahl is designated as the administrator of the Medical Services Program.

- Medical services for employee evaluations, employment requirements, and special conditions of work are provided to employees at no cost as specified in OSHA requirements
- A person(s) who has a valid certificate in first aid training, the American Red Cross, or equivalent will be available at work sites to render emergency first aid
- Provisions will be made prior to commencement of a project for prompt medical attention in case of serious injury
- First aid supplies will be easily accessible when required
- Proper equipment for prompt transportation of the injured person to a physician or hospital or a communication system for contacting necessary ambulance service will be provided
- Corporate EH&S Manager Mike Dahl is the designated first aid provider and certified in cardiopulmonary resuscitation CPR and is responsible for rendering first aid in the event of an injury requiring immediate response when emergency medical services are not available, and will also be responsible for first aid training of any employee required
- Injured employees are to be transported to medical facilities by emergency medical services. If emergency medical service is not available in a timely manner, the injured employee will be transported to the nearest medical service in a company vehicle by the job foreman
- In areas where 911 service is not available employees will be notified of phone numbers to contact local emergency response medical services. Corporate EH&S Manager Mike Dahl will be responsible for posting of emergency phone numbers at all jobsites. The phone numbers will be conspicuously posted in all work locations
- Corporate EH&S Manager Mike Dahl is responsible for the accessibility of First Aid Kits and for checking the contents of all First Aid Kits before being sent out to each job and at least weekly on each job to ensure that the expended items are replaced

- First aid kits are readily available in all company vehicles and in the company office. First aid kits will consist of appropriate items and stored in a weather proof container with individual sealed packages of each type of item and will stock a minimum of the following items:

- PPE for First Aid:
- 3-Pair latex gloves
- Surgical masks
- Clear eye protection or Face Shield
- Dust Masks or other needed Face Protection
- Mouth-to-mouth barrier
- Large, sterile gauze pads (6 each: 2X2's, 3X3's, and 4X4's)
- Compress Dressings (4X8), 3 each
- Rolled gauze bandages: 2" and 3" wide, 3 each
- Large box assorted "Band-Aids"
- Two elastic wrap bandages (ace)
- Cotton balls and Q-tips
- Surgical or athletic tape; 1" & 2" wide, 2 rolls each
- Antiseptics & ointments:
  - Alcohol
  - Burn gel or cream
  - Alcohol swabs
  - Peroxide
  - Antiseptic spray and ointment
- Pain relief tabs
- 6 burn treatment single-use packages, 0.5 g. Application
- Good quality eye-wash solution, with eye cup
- 1 eye covering bandages (for two eyes)
- Self-activating cold packs, 4x5 inches
- Liquid antiseptic hand soap
- Blunt-nose surgical scissors
- Forceps, tweezers & safety pins

* General First-aid Guidebook, textbook, or manual will be readily available, but not necessarily inside of the first-aid kit.

- Where the eyes or body of any person may be exposed to injurious corrosive materials, suitable facilities will be provided within the work area for quick drenching or flushing of eyes or body
- Eye wash bottles are available wherever eye wash stations are not available, for any employee required to work in an environment where exposure to eye hazards may exist. Wash facilities or drench barrels are available at each jobsite for employees
- *Procedure for flushing eyes* — Eye membranes absorb chemicals quickly. This can lead to eye damage within minutes. Flood the eye with lukewarm (never hot) water poured from a large glass two to three inches from the eye. Continue for 15 minutes. Blink the eye as much as possible during the flooding. Do not force the eyelid open and do not allow the eyes to be rubbed. If lukewarm water is not available, rinse the eye quickly using a gentle stream from a hose for at least 15 minutes
- *Procedure for drenching skin* — If poisons come in contact with the skin, they must be removed as quickly as possible. Remove contaminated clothing and flood the skin area with water for 10 minutes. Then gently wash the skin area with soap and water and rinse. Later, destroy contaminated clothing. For a chemical skin burn, rinse the area with lots of water, remove the clothes and cover with a soft, clean cloth. Do not apply grease or ointments
- It is the policy of Solomon Corporation that all of the requirements of OSHA §1926.50 will be met

POLICY

Solomon Corporation has adopted this policy to inform employees of the Fit for Duty Policy. This ensures the safety and health of the employees.

RESPONSIBILITIES

EMPLOYER RESPONSIBILITIES

- Ensuring all employees are physically fit and capable to perform the job duties assigned
- Training personnel to perform assigned tasks safely
- Responding quickly to eliminate workplace hazards
- Ensuring all equipment is kept in good repair
- Ensuring employees follow safe job procedures
- Reviewing job hazard analysis whenever there is a significant change to any element of the job or there has been an injury or illness

SUPERVISOR RESPONSIBILITIES

- Establishing and maintaining safe and healthful working conditions
- Monitoring employee work behaviors using behavior based safety tools to determine if they should be removed from the worksite
- Ensuring employees are not impaired by illness or medication use
- Setting good examples, instructing their employees, making sure they fully understand and follow safe procedures

EMPLOYEE RESPONSIBILITIES

- Notifying their supervisors if they are fatigued to the point of not being able to perform their duties safely
- Ensuring they are physically and mentally fit to perform their job functions safely; they must take responsibility for their own safety as well
- Notifying their supervisor if they are taking prescription or over-the-counter medications
- No employee is expected to undertake a job until he/she has received instructions on how to do it properly and safely, and is authorized to perform the job
- No employee should undertake a job that appears to be unsafe
- Employees are to report to a superior or designated individual all unsafe conditions encountered during work
- Personal protective equipment must be used when and where required, and properly maintained

TRAINING

It is the determination of Solomon Corporation to ensure all employees will be properly trained for their assigned task. Before any employee starts a new assigned task the employee must receive specific training. Examples might include:

- Forklift operation
- Instrumentation
- Heavy equipment operation
- Scaffold building, etc.

PROCEDURES

DRUG AND ALCOHOL TESTING

It is the policy of Solomon Corporation that drug and alcohol testing for pre-employment, post-accident, or random will be conducted by only a laboratory certified by the U.S. Department of Health and Humans Services (HHS) under the National Laboratory Certification Program (NLCP).

TESTING PROCEDURES – PRE-EMPLOYMENT

Any offer of employment is deemed conditional upon the potential employee having a negative test result for drugs.

Pre-employment Drug testing shall be scheduled by the hiring supervisor directly with the third-party service provider immediately upon acceptance by the candidate of a conditional offer of employment. Testing should be done in a location most likely to ensure timely receipt of the results. Pre-employment test results will be reported by the Medical Review Officer.

TESTING PROCEDURES - EMPLOYEES

Any person who requires an employee to be tested for Alcohol or Drugs must tell the employee beforehand why the test is being requested. Any employee who refuses a request to be tested is in breach of this policy and may be subject to disciplinary action that may include termination of employment.

When testing for either Alcohol or Drugs is to occur, Solomon Corporation will direct the employee to a sample collection site designated by a third-party service provider and provide transportation to the site. At Solomon Corporation discretion, a qualified technician may be brought to the worksite to conduct the testing.

SAFE WORK PRACTICES

It is the determination of Solomon Corporation that all employees will be informed of the safe work practices and procedures in the work place. Examples might include:

- Lockout/Tagout
- Process Safety Management
- Asbestos Awareness
- Electrical safety, etc.

PRESCRIPTION AND OVER-THE-COUNTER MEDICATIONS

It is the policy of Solomon Corporation that all employees must notify their supervisor when taking any prescription or over-the-counter medication that could impair their ability to work safely.

Over-the Counter medications such as allergy or cold and flu medications could also impair one's ability to perform safely and must be reported to their supervisor.

EMPLOYEE MONITORING

To determine if an employee should be removed from the work site, Solomon Corporation will monitor employee behaviors and activities based on the Behavior Based Safety Policy.

POLICY

This program is designed for the prevention of employee accidents and injuries while operating industrial trucks (forklifts). Only trained and certified operators, including supervisors, are allowed to operate Powered Industrial Trucks (Forklifts).

REFERENCES

- §1910.178 – Powered Industrial Trucks

RESPONSIBILITIES

Safe forklift operation is a responsibility shared between the Company and its employees.

EMPLOYER RESPONSIBILITIES

Solomon Corporation is responsible for:

- Ensuring each powered industrial truck operator is competent to operate a powered industrial truck safely, as demonstrated by the successful completion of our training and evaluation
- Responding quickly to eliminate workplace hazards
- Ensuring all equipment is kept in good repair
- Ensuring employees follow safe job procedures
- Reviewing jobsite conditions whenever there is a significant change to any element of the job or there has been an injury or illness

SAFETY COMMITTEE RESPONSIBILITIES

- Assist in jobsite review for hazards to forklifts as necessary
- Assist in training employees to recognize and control workplace hazards
- Ensure operators of forklifts are certified operators
- Encourage employees to report hazards
- Implement appropriate controls
- Ensure corrective action is taken promptly

EMPLOYEE RESPONSIBILITIES

- Operate forklifts only when certified to do so
- Follow safe job procedures
- Report hazards to a supervisor immediately

Powered Industrial Truck Operators: Operators are responsible for the following: Operating all powered industrial trucks in a safe manner consistent with safe rules of operation. Inspecting powered industrial trucks at the beginning of each work shift and completing the appropriate inspection forms. Reporting all equipment malfunctions and/or maintenance needs to their supervisors immediately. Park lift in safe place, remove key, tag or note problem.

TRAINING

Training will include: formal classroom education, practical training, and an instructor's evaluation of the operator's performance. The instructor providing the training will be knowledgeable about the formal education and worksite requirements and qualified to provide operating instructions and evaluate each student's performance in the following:

- Load capacity
- Operating instructions, warnings, and precautions for the types of truck the operator will be authorized to operate
- Differences between the truck and the automobile
- Truck controls and instrumentation: location, what they do, and how they work
- Engine or motor operation
- Steering and maneuvering
- Visibility (including restrictions due to loading)
- Fork and attachment adaptation, operation, and use limitations
- Vehicle capacity and stability
- Any vehicle inspection and maintenance that the operator will be required to perform
- Refueling and/or charging and recharging of batteries
- Operating limitations
- Any other operating instructions, warnings, or precautions listed in the operator's manual for the types of vehicle that the employee is being trained to operate

WORKPLACE-RELATED TOPICS INCLUDE:

- Surface conditions where the vehicle will be operated
- Composition of loads to be carried and load stability
- Load manipulation, stacking, and unstacking
- Pedestrian traffic in areas where the vehicle will be operated
- Narrow aisles and other restricted places where the vehicle will be operated
- Hazardous (classified) locations where the vehicle will be operated
- Ramps and other sloped surfaces that could affect the vehicle's stability
- Closed environments and other areas where insufficient ventilation or poor vehicle maintenance could cause a buildup of carbon monoxide or diesel exhaust
- Other potentially hazardous environmental conditions in the workplace
- Any other operating instructions, warnings, or precautions listed in the operator's manual for the types of vehicle that the employee is being trained to operate

REFRESHER TRAINING REQUIREMENTS

Refresher training, including an evaluation of the effectiveness of that training, will be conducted to ensure that the operator has the knowledge and skills needed to operate the powered industrial truck safely.

Refresher training will be conducted when:

- The operator has been observed to operate the vehicle in an unsafe manner
- The operator has been involved in an accident or near-miss incident
- The operator has received an evaluation that reveals that the operator is not operating the truck safely
- The operator is assigned to drive a different type of truck
- A condition in the workplace changes in a manner that could affect safe operation of the truck

An evaluation of each powered industrial truck operator's performance will be conducted at least once every three years. Employee training records will be maintained for 5 years.

SAFE PRACTICES

OPERATOR REQUIREMENTS

- Operators must be certified to use the equipment he/she is operating
- Operators are prohibited from operating powered industrial trucks while under the influence of any of the following that might impair their driving skills:
  - Alcohol
  - Illegal drugs
  - Prescription or over the counter medications

EQUIPMENT INSPECTION AND MAINTENANCE

- The operator will inspect their powered industrial truck before each shift
- A file will be maintained that lists the shift inspections of equipment. This file will be kept at the Solomon Corporation Administration Offices
- A maintenance log will be kept that identifies repair needs and corrective actions taken for each powered industrial truck. This log will be kept at the Maintenance Administration Offices
- If repairs are needed on a powered industrial truck such that it cannot be safely operated, it will; be taken out of service until the repairs have been made
- After repairs have been completed, the powered industrial truck will be given a performance test to ensure that the equipment is safe to operate
- Forklifts will be kept in clean condition, free of dirt, excess oil and grease

CHANGING AND CHARGING BATTERIES

- Equipment will be provided to safely flush and neutralize spilled battery acid and electrolyte
- Smoking will be prohibited in all battery-charging areas
- Eyewash equipment will be maintained in all charging areas
- Precautions to prevent open flames, sparks and electric arcs in charging areas
- Employees who change and service batteries and handle corrosive liquids will wear the proper Personal Protective Equipment (PPE)

GENERAL SAFETY

- Only authorized, trained personnel will operate lift trucks
- Before start of shift, a visual inspection must be conducted. Employees will not operate an unsafe forklift at any time
- Fill fuel tanks out of doors while engine is off
- Operators will drive with both hands on the steering wheel. Horseplay is prohibited. Do not drive with wet or greasy hands
- No person will ride as a passenger on a forklift or on the load being carried
- A forklift will not be used to elevate a platform or pallet with persons on it, except work platforms especially designed for this purpose. Work platforms must have standard guard rails, and must be securely fastened to the forks
- No person will stand or walk under elevated forks
- Operators should avoid making jerky starts, quick turns, or sudden stops. The operator will not use reverse as a brake
- Slow down on wet & slippery surfaces, cross aisles or locations with obstructed visions
- Operators entering a building or nearing a blind corner will make their approach at reduced speed. Sound horn and proceed carefully
- Operators will give pedestrians the right-of-way at all times
- Operators will not drive toward any person who is in front of a fixed object or wall
- Operators will not overtake and pass another forklift traveling in the same direction, at intersections, blind spots, or hazardous locations
- Operators should not put their fingers, arms, or legs between the uprights of the mast, or beyond the contour of the forklift
- Forks should always be placed under the load as far as possible. Do not lift a load with one fork
- No load should be moved unless it is absolutely safe and secure
- Use extra care when handling long lengths of bar stock, pipe, or other materials
- Avoid sharp or fast end-swing
- Compressed gas cylinders shall be moved only in special pallets designed for this purpose
- When unloading trucks or trailers, the brakes on the vehicle will be set (locked) and the wheels chocked

- Forklifts must be safely parked when not in use. The controls will be neutralized, power shut off, brakes set, key removed, and the forks left in a down position flat on the surface, and not obstructing walkways or aisles
- A forklift will not be left on an incline unless it is safely parked and the wheels blocked
- Only stable and safely arranged loads will be handled
- Only loads within the rated capacity of the powered industrial truck will be handled

TRAVELING

- Solomon Corporation speed limits will be observed, and under all travel conditions, a powered industrial truck will be operated at speeds that will permit it to be brought to a stop in as safe manner
- Three truck lengths (or two seconds) will be maintained between powered industrial trucks in operation
- The powered industrial truck will be kept under control at all times
- When vision is obscured, the operator will slow down and sound the horn
- If the load blocks the operator's view, the powered industrial truck will be driven in the direction that provides the best visibility
- The powered industrial truck will cross railroad tracks at a diagonal
- The powered industrial truck will be parked 8 feet or further from the center line of the railroad tracks
- The operator will keep a clear view of the path of travel
- The loaded powered industrial truck will be driven with the load upgrade when driving on ascending or descending grades greater than 10%
- Dock boards and bridge plates will be properly secured before they are driven over
- When the forklift is not carrying a load, the operator shall travel with the forks as low as possible (maximum of 3 inches on paved surfaces). When carrying a load, it should be carried as low as possible (consistent with safe operation, 2 to 6 inches above the surface)
- The forks should not be operated while the forklift is traveling
- On a downgrade, the load will be to the rear, and the forks raised only enough to clear the surface
- On an upgrade, the load will be ahead, and the forks raised only enough to clear the surface

POLICY

Solomon Corporation has adopted this policy to inform employees of the written Gas Hazards Procedures. This ensures the safety and health of the employees.

RESPONSIBILITIES

Corporate EH&S Manager Mike Dahl is responsible for ensuring that the following policy for control, training, personal protective equipment and safe work practices is enforced.

TRAINING

Training for Gas Hazard Awareness will be documented and available for review. Employees will be trained in gas hazards before initial assignment. Employees will receive refresher training at least: annually, as work requires; changing job assignments; changing equipment; changing environment.

Gas Hazard Awareness training requirements will include, at a minimum, the following:

- Locations of alarm stations
- Gas Monitoring Equipment – Portable and Fixed Detection
- Gas Alarms
- Gas Hazards – Characteristics of gases, to include at a minimum:
- Oxygen deficiency
- Oxygen or nitrogen enriched atmospheres
- Carbon monoxide, hydrogen sulfide, and methane
- Health hazards, particularly of the anticipated possible gas exposure
- The correct use, maintenance, and limitations of Personal Protective Equipment (PPE)

Hazard training will include any plant or department specific gases of concern, and will also include:

- Signs and symptoms of overexposure
- Personnel Rescue Procedures
- Use and care of Self-Contained Breathing Apparatus (SCBA) - includes donning and emergency procedures (when applicable)
- Evacuation procedures
- Staging Areas – Primary and Secondary

GAS DETECTORS/MONITORS

Solomon Corporation will ensure each employee will use a portable gas detector as required in all high-hazard areas.

The gas monitor will be calibrated per the manufacturer's recommendations. Each monitor will contain a current calibration sticker on the monitor providing the date of calibration.

At the beginning of each day, a bump test is required to be completed on the monitor when in use per the requesting owner client and manufacturer's guidelines. This is to ensure the monitor and alarms are functioning correctly.

Bump Test: Briefly expose the portable detector to a known concentration of gas high enough to set off the alarm. Note the reading to ensure that it is correct. A bump test is not a calibration, but a quick way to ensure that the most important functions of the instrument are intact.

RESPIRATORY PROTECTION

Solomon Corporation will ensure the company's respiratory protection program is in accordance with *29CFR 1910.134.* Each employee will receive training in respiratory protection. The training will be documented and in writing.

EMERGENCY ACTION

Solomon Corporation will ensure all employees are aware of the Owners Emergency Action Plan, including evacuation routes and alarms. Employees will participate in company emergency evacuation drills and practice rescue procedures.

POLICY

Solomon Corporation is committed to the safety and health of our employees. Therefore, the following general safety and health provisions have been adopted.

RESPONSIBILITIES

Corporate EH&S Manager Mike Dahl is responsible for the implementation and enforcement of the following safety rules. Disciplinary procedures will be enforced.

TRAINING

OSHA requires that employees be trained in the safe methods of performing their job. Solomon Corporation is committed to:

- “Instructing all employees in the recognition and avoidance of unsafe conditions and the regulations applicable to his work environment to control or eliminate any hazards or other exposure to illness or injury”
- “Frequent and regular inspections of job sites, materials, and equipment will be made by the Company-designated competent person(s)”
- “Only employees qualified by training or experience will be permitted to operate equipment and machinery”
- Any machinery, tool, material, or equipment which is not in compliance with any applicable OSHA requirement is prohibited. Corporate EH&S Manager Mike Dahl will ensure that any such machine, tool, material, or equipment will either be identified as unsafe by tagging or locking the controls to render them inoperable, or will be physically removed from its place of operation

Awareness of potential hazards, as well as knowledge of how to control them, is critical to maintaining a safe and healthful work environment and preventing injuries. To achieve this goal, we will provide training to each employee on general safety issues and safety procedures specific to that employee's work assignment.

Every new employee will be given instruction by their foreman in the general safety requirements of their job. A copy of our Code of Safe Practices shall also be provided to each employee. Tailgate or toolbox safety training will be conducted at least every 10 working days. All training will be documented on the forms provided. Managers, superintendents, and foremen will be trained at least twice per year on various applicable accident prevention topics.

Training provides the following benefits: makes employees aware of job hazards; teaches employees to perform jobs safely; promotes two way communication; encourages safety suggestions; creates interest in the safety program; fulfills OSHA requirements.

Employee training will be provided at the following times:

- All new employees will receive a safety orientation their first day on the job
- All new employees will be given a copy of the Code of Safe Practices and required to read and sign for it
- All field employees will receive training at tailgate or toolbox safety meetings held at the job site
- All employees given a new job assignment for which training has not been previously provided will be trained before beginning the new assignment
- Whenever new substances, processes, procedures or equipment that represent a new hazard are introduced into the workplace
- Whenever Solomon Corporation is made aware of a new or previously unrecognized workplace hazard
- Whenever management believes that additional training is necessary
- After all serious accidents
- When employees are not following safe work rules or procedures

Training topics will include, but not be limited to:

- Employee's safety responsibilities
- General safety rules
- Code of Safe Practices
- Safe job procedures
- Use of hazardous materials
- Use of equipment
- Emergency procedures
- Safe lifting and material handling practices
- Use of boom and scissor lifts
- Use of fall-protection
- Contents of safety program

DOCUMENTATION OF TRAINING

All employee safety training will be documented on one of the following three forms: New Employee Safety Orientation; Specialized, formal employee training plans; Tailgate/Toolbox safety Training Report.

The following informal training methods will be used. Actual demonstrations of the proper way to perform a task will be used in most cases, for example:

- Instruct employee how to do the job safely
- Demonstrate to employee how to do the job safely
- Have employee explain to instructor how to do the job safely
- Have employee demonstrate to instructor how to do the job safely
- Follow up to ensure they are still performing the job safely

SAFE PRACTICES

SAFETY COMMUNICATION

Employee safety communication procedures are designed to develop and maintain employee involvement and interest in the Safety and Health Program. These activities will also ensure effective communication between management and employees on safety related issues that is of prime importance to The Company.

The following are some of the safety communication methods that may be used:

- Tailgate/Toolbox safety training with employees that encourage participation and open, two-way communication
- New employee safety orientation and provision of the Code of Safe Practices
- Provision and maintenance of employee bulletin boards discussing safety issues, accidents, and general safety suggestions
- Written communications from management or the Safety Coordinator, including memos, postings, payroll stuffers, and newsletters
- Anonymous safety suggestion program

Employees will be kept advised of highlights and changes relating to the safety program. Supervisors will relay changes and improvements regarding the safety program to employees, as appropriate. Employees will be involved in future developments and safety activities, by requesting their opinions and comments, as necessary.

All employee-initiated safety related suggestions shall be properly answered, either verbally or in writing, by the appropriate level of management. Unresolved issues shall be relayed to Corporate EH&S Manager Mike Dahl.

All employees are encouraged to bring any safety concerns they may have to the attention of management. Solomon Corporation will not discriminate against any employee for raising safety issues or concerns.

The Company also has a system of anonymous notification, whereby employees who wish to inform The Company of workplace hazards without identifying themselves may do so, by phoning or sending written notification to the following address:

CODE OF SAFE PRACTICES

Solomon Corporation will maintain a “Safety and Health Program” conforming to the best practices of organizations of this type. To be successful, such a program must embody the proper attitudes toward injury and illness prevention on the part of supervisors and employees. It also requires cooperation in all safety and health matters, not only between supervisor and employee, but also between each employee and his or her co-workers. Only through such a cooperative effort can a safety program in the best interest of all be established and preserved. Safety and health in our business must be a part of every operation.

THE COMPANY SAFETY & HEALTH PROGRAM INCLUDES:

- Providing mechanical and physical safeguards to the maximum extent possible
- Conducting a program of safety and health inspections to find and eliminate unsafe working conditions or practices, to control health hazards, and to comply fully with the safety and health standards for every job
- Training all employees in good safety and health practices
- Providing necessary personal protective equipment and instructions for its use and care
- Developing and enforcing safety and health rules and requiring that employees cooperate with these rules as a condition of employment
- Investigating, promptly and thoroughly, every accident to find out what caused it and to correct the problem so that it will not happen again
- Setting up a system of recognition and awards for outstanding safety service or performance

WE RECOGNIZE THAT THE RESPONSIBILITIES FOR SAFETY AND HEALTH ARE SHARED:

Solomon Corporation accepts the responsibility for leadership of the safety and health program, for its effectiveness and improvement, and for providing the safeguards required to ensure safe conditions.

Supervisors are responsible for developing the proper attitudes toward safety and health in themselves and in those they supervise, and for ensuring that all operations are performed with the utmost regard for the safety and health of all personnel involved, including themselves.

Employees are responsible for wholehearted, genuine operation with all aspects of the Safety and Health Program including compliance with all rules and regulations – and for continuously practicing safety while performing their duties.

GENERAL SAFETY RULES

- Solomon Corporation employees shall follow these safe practice rules, render every possible aid to safe operations, and report all unsafe conditions or practices to their supervisor
- Failure to abide by the Code of Safe Practices may result in disciplinary action up to and including termination
- Supervisors shall insist that employees observe and obey every rule, regulation, and order necessary to the safe conduct of the work, and shall take such action necessary to obtain compliance
- If you are unsure of the safe method to do your job, STOP and ask your supervisor. Ignorance is no excuse for a safety violation
- All employees shall be given frequent accident prevention instructions. Instructions, practice drills, or articles concerning workplace safety and health shall be given at least once every 5 working days

- No one shall knowingly be permitted to work while the employee's ability or alertness is impaired by fatigue, illness, and prescription or over the counter drugs. Employees who are suspected of being under the influence of illegal or intoxicating substances, impaired by fatigue or an illness, shall be prohibited from working
- Anyone known to be under the influence of alcohol and/or drugs shall not be allowed on the job while in that condition. Persons with symptoms of alcohol and/or drug abuse are encouraged to discuss personal or work-related problems with the supervisor/employer
- Employees should be alert to see that all guards and other protective devices are in proper places and adjusted, and shall report deficiencies. Approved protective equipment shall be worn in specified work areas
- Horseplay, scuffling, fighting, and other acts that tend to have an adverse influence on the safety or well-being of the employees are prohibited. Do not run on the job site or in the shop or office area
- Work shall be well-planned and supervised to prevent injuries when working with equipment and handling heavy materials. When lifting heavy objects, employees should bend their knees and use the large muscles of the legs instead of the smaller muscles of the back. Back injuries are the most frequent and often the most persistent and painful type of workplace injury
- Workers shall not handle or tamper with any electrical equipment, machinery, or air or water lines in a manner not within the scope of their duties, unless they have received instructions from their supervisor. Do not operate equipment that you are not familiar with. Do not attempt to use such equipment until you are fully trained and authorized
- Keep your work area clean, free of debris, electrical cords, and other hazards. Immediately clean up spilled liquids
- Always notify all other individuals in your area who might be endangered by the work you are doing
- A red tag system identifies equipment that is NOT to be operated, energized, or used. All lock-out/tag-out notices and procedures must be observed and obeyed
- Do not block exits, fire doors, aisles, fire extinguishers, first aid kits, emergency equipment, electrical panels, or traffic lanes
- Do not leave tools, materials, or other objects on the floor that might cause others to trip and fall
- Do not distract others while working. If conversation is necessary, make sure eye contact is made prior to communicating
- Employees shall not enter manholes, underground vaults, chambers, tanks, silos, or other similar places that receive little ventilation, unless it has been determined that it is safe to enter. Confined space protocols will be followed
- Materials, tools, or other objects shall not be thrown from buildings or structures until proper precautions are taken to protect others from the falling objects
- Compressed air will not be used for cleaning purposes except where reduced to less than 30 p.s.i. and then only with effective chip guarding and personal protective equipment
- Employees shall cleanse thoroughly after handling hazardous substances, and follow special instructions from authorized sources

- Gasoline or other flammable liquids shall not be used for cleaning purposes
- No burning, welding, or other source of ignition shall be applied to any enclosed tank or vessel, even if there are some openings, until it has first been determined that no possibility of explosion exists, and authority for the work is obtained from the foreman or superintendent
- Any damage to scaffolds, falsework, or other supporting structures shall be immediately reported to the foreman and repaired before use
- Possession of firearms, weapons, illegal drugs or alcoholic beverages on Company or customer property or the job site is strictly prohibited
- All injuries shall be reported promptly to your supervisor so that arrangements can be made for medical and/or first-aid treatment

SPECIFIC SAFETY RULES

ELECTRICAL SAFETY

- Only trained, qualified, and authorized employees are allowed to make electrical repairs or work on electrical equipment or installations
- All electrical equipment and systems shall be treated as energized until tested or otherwise proven to be de-energized
- All energized equipment and installations will be de-energized prior to the commencement of any work. If the equipment or installation must be energized for test or other purposes, special precautions will be taken to protect against the hazards of electric shock
- All equipment shall be locked out to protect against accidental or inadvertent operation when such operation could cause injury to personnel. Do not attempt to operate any switch, valve, or other energy-isolating device bearing a lock
- Always use safety grounds where there is a danger of shock
- Polyester clothing or other flammable types of clothing shall not be worn near electrical circuits. Cotton clothing is much less likely to ignite from arc blast. Employees working on live circuits shall be provided Nomex or equivalent fire resistant clothing
- Suitable eye protection must be worn at all times while working on electrical equipment
- Always exercise caution when energizing electrical equipment or installations, protecting against faults and arc blasts
- All power tools will be grounded or double insulated. Tools with defective cords or wiring shall not be used
- Metal jewelry should not be worn around energized circuits
- Extension and temporary power cords must be heavy duty and grounded. Frayed or defective cords shall not be used
- Suitable temporary barriers or barricades shall be installed when access to opened enclosures containing exposed energized equipment is not under the control of an authorized person
- Protect electrical installations from contact with enclosures or tight fitting covers
- Ground fault circuit interrupters (GFCI's) are required on all power outlets. Circuits shall not be overloaded with equipment or extension cords
- Metal measuring tapes, fish tapes, ropes or other metal devices are prohibited where they may contact energized parts of equipment or circuits

PERSONAL PROTECTIVE EQUIPMENT (PPE)

- Use the correct PPE for each job assignment. If you do not know, ask
- PPE shall be maintained in good condition and cleaned regularly
- PPE shall be stored properly when not in use to protect it from damage
- Damaged or broken PPE must be returned to your foreman for replacement
- Hard hats must be worn on job sites at all times
- American National Standards Institute (ANSI) approved safety glasses worn when working with power tools, compressed air or gasses, chemicals, or any other item that creates an eye injury hazard
- Face shields with safety glasses when grinding or working with hazardous chemicals
- Employees must wear industrial work shoes in the shop and on the job site. The shoes must have complete leather uppers and skid resistant soles and be in good condition
- Athletic style shoes, tennis shoes, open toe shoes, plastic or vinyl shoes or shoes with decorative accessories are not allowed
- Hearing protectors must be worn when working with loud equipment such as cut off saws, chain saws, air hammers or grinders
- Back support belts should be worn for heavy lifting tasks
- Protective clothing won’t hamper or restrict freedom of movement due to improper fit
- Long pants of heavy-duty material must be worn. No shorts or sweat pants are allowed
- Do not wear loose, torn or frayed clothing, dangling ties, finger rings, dangling earrings, jewelry items, or long hair unless contained in a hair net, while operating any machine that could cause entanglement
- If required, wear National Institute of Occupational Safety and Health (NIOSH) approved respirators when applying adhesives, paint, welding, grinding, or working with chemicals. Read the applicable Safety Data Sheets (SDS) to find out which types of respirators are required. Facial hair may not be permitted in certain circumstances

HAZARDOUS MATERIALS AND CHEMICALS

- Read all warning labels and SDS before using any chemicals
- Hazardous materials shall be handled in accordance with the SDS and label. If protective equipment is required, use it
- Eye protection must be worn when working with hazardous materials or chemicals
- Mixing of chemicals is prohibited at all times unless required by the label. Before you mix - review all SDS
- Wash your hands thoroughly after handling chemicals and before eating or smoking
- Never use solvents for hand cleaning. Use the non-toxic hand cleaners provided
- Store all hazardous materials properly in suitable containers that are properly labeled
- Use chemicals only in well-ventilated areas
- When using secondary containers, ensure that they are labeled as to their contents and hazards
- Do not disturb any asbestos. STOP work and tell your foreman

- Do not cut or weld stainless steel or galvanized metal without respiratory protection. These items create toxic fumes
- Work with lead, asbestos, cadmium and other toxic compounds require special precautions. Do not attempt to perform this work without special equipment and training

FIRE PREVENTION AND HOUSEKEEPING

- Always take precautions to prevent fires which may be started, particularly from oily waste, rags, gasoline, flammable liquids, acetylene torches, improperly installed electrical equipment and trash
- Fire fighting equipment is to be inspected on a regular basis. All discharged, damaged, or missing equipment is to be immediately reported to a supervisor. Tampering with fire equipment is prohibited
- Access to fire extinguishers must be kept clear at all times. Make note of the location of fire fighting equipment in your work area
- Never use gasoline or flammable solvents for cleaning purposes
- Smoking is prohibited within 20 feet of where flammable substances are present
- In case of fire, employees shall consider the safety of themselves and other individuals before saving property
- Keep your work areas free of debris. Remove useless material from the work area as fast as required to help reduce tripping hazards
- Maintain awareness of potential hazards when walking about the job site
- Keep tools, materials and equipment out of walkways and stairways at all times
- Sharp wires or protruding nails must be kept bent
- Place tools and equipment so they will not slide off the roof
- Tie material down at day's end so the wind will not blow it off the roof

FALL PROTECTION

- Fall protection shall be used at all times, when working at least 6 feet above the ground
- Floor and wall openings, unfinished balconies, elevator shafts and similar areas must be railed, covered or barricade to prevent falls
- Never remove fall protection rails, covers, or barricades without permission from your foreman and special precautions. Always replace these items when finished
- Safety harnesses shall be the full body type with a shock-absorbing lanyard attached to a substantial anchorage capable of supporting twice the maximum load. Lanyards shall be attached at the wearer’s upper back. Body belts are not to be worn as fall protection
- Read and obey all manufacturers’ instructions relating to your fall arrest system (safety harness and lanyard)
- Inspect the harness and lanyard prior to each use and after a fall. Defective equipment is not to be used. Lanyards must be destroyed after a fall and never reused
- Safety harnesses and lanyards should limit free fall distance to less than 4 feet and prevent contact with any level or objects below you
- Never use any part of a fall arrest system to hoist materials or for any other purpose
- Safety harnesses and shock absorbing lanyards need to be worn while in boom lifts

LADDER SAFETY

- Inspect the ladder before using it. If it is broken, throw it out. Never repair a broken ladder, get a new one. Keep portable stairways, ladders and step stools in good condition and use them only in a safe manner
- Use the proper ladder for the job. Do not use “A” frame ladders as straight ladders. Make sure the ladder is tall enough to reach the work area. Do not use metal ladders for electrical work
- Do not place ladders in passageways, doorways, or any location where they might be hit or jarred, unless protected by barricades or guards
- Ladder rungs and steps must be kept free of grease, oil, mud, or other slippery substances
- Ladders should only be placed on hard level surfaces. Make sure the ladder feet are not placed on sandy, slippery, or sloping surfaces. Clean or sweep the area where the ladder feet will be and make sure the rubber feet are in good shape
- Arrange your work so you are able to face the ladder and use both hands while climbing. Do not carry tools or equipment while climbing a ladder. Climb the ladder, and then hoist the tools or equipment with a line or a hoisting device
- Avoid temporary ladders. Always use a commercially made, construction grade ladder of the proper length for the work being performed
- Secure portable ladders in place and so the distance from the wall to the base of the ladder is at least 1 foot for every 4 feet of height
- Straight ladders shall be tied off the top of the ladder to prevent slipping
- Move or cover sharp objects below you in case you fall. Cap or bend all rebar
- Do not stand on or work from the 2nd rung from the top or above. Also do not reach too far from the ladder. Keep your belt buckle between the side rails
- Extension ladders shall extend at least 36" above the level being accessed
- On all ladders, do not step on cross bracing that is not intended to be used for climbing

SCAFFOLDS

- Scaffolds are to be erected, dismantled, altered, or repaired by the Company competent person or the scaffold contractor ONLY
- Inspect scaffolds prior to use and report any damage immediately to your foreman. Do not use damaged scaffolds
- You are not permitted to ride on rolling scaffolds being moved
- At least 2 people are required to move rolling towers. Secure or remove all tools and materials before moving
- Always use guard railings on all scaffolds regardless of height
- Use only high quality planking on scaffolds that are secured to prevent shifting
- Apply caster brakes and use outriggers when scaffolds are stationary
- Do not use planks or guard rails as a temporary means of obtaining greater height
- Move or cover sharp objects below you in case you fall. Cap or bend all rebar

LOCKOUT/TAGOUT

- All machinery and electrical equipment shall be locked out and tagged prior to repair, cleaning, or adjustment unless power is necessary to perform the work
- Use your own lock and key. No one else should have a key for your lock
- Maintain control of your key at all times to prevent unauthorized use
- Never remove another employee's lock or energize tagged equipment
- Each employee should install their own lock
- Notify all affected employees that lockout/tagout is required and reasoning
- If the equipment is operating, shut it down by the normal stopping procedure
- Disconnect or isolate the energy source from the equipment
- Stored energy must also be dissipated or restrained by methods such as grounding, repositioning, blocking, bleeding down, etc
- Lock-out all energy isolation devices with an individual lock
- After repair is complete and the equipment is ready for testing or normal operation, check the equipment to see that all cover plates and safety devices have been reinstalled
- When the equipment is clear, remove all locks and tags. The energy isolating devices may be operated to restore energy to the equipment
- After ensuring that no employees are exposed and as a check of having disconnected the energy sources, operate the push button or other normal operating controls to make certain the equipment will not operate. Caution: Return operating controls to neutral position after the test. The equipment is now locked-out. Install red lock-out tag on operating controls

BOOM AND SCISSOR LIFTS

- Only trained and authorized employees are allowed to use boom or scissor lifts. If you are not trained, stay off
- Read and obey all manufacturers' instructions and safety precautions
- Inspect all lifts prior to use. Defective equipment shall not be used
- A safety harness with shock absorbing lanyard or a safety belt positioning device must be worn while using boom lifts. Harnesses are not required for scissor lifts, provided guardrails are adequate and you do not leave the work platform
- Always stay inside the platform railing
- Always lower the lift before moving
- Never use scissor lifts on uneven ground. They are designed primarily for use on concrete floors

HAND AND POWER TOOLS

- Proper eye protection must be worn when using hand and power tools
- Know your hand and power tool applications and limitations. Always use the proper tool for the job
- Inspect cords and tools prior to use. Do not use tools that are faulty in any way. Exchange them for safe tools immediately
- Power tools must be grounded or double insulated. All power tools are to be plugged into a grounded GFCI outlet
- Do not use power tools in damp, wet or explosive atmospheres
- Do not lift, lower or carry portable electrical tools by the power cord
- Keep all safety guards in place and in proper working order
- Use clamps or vises to secure work pieces
- Do not force hand power tools
- Return all tools and other equipment to their proper place after use
- Unplug all power tools before changing bits and/or grinding disks
- Never leave chuck keys in the tool during operation
- Do not use a screwdriver as a chisel
- Before using sledges, axes or hammers, be sure the handles are securely fastened with a wedge made of sound material
- Do not use a handle extension or ‘cheater” on any wrench
- Files shall be equipped with handles and should not be used as a punch or pry

TRENCHING AND EXCAVATION

- All excavations and trenches at least 5’ must be shored, sloped, or benched. All trenching must be done in accordance with OSHA regulations
- Always locate underground utilities before digging. Also contact regional notification centers in advance
- Do not work under loads handled by lifting or digging equipment
- Ladders shall be provided for access to trenches and excavations 4’ deep or greater
- Keep all spoil piles a minimum of 2 feet from the edge of the trench
- Barricade trenches or use caution tape to warn others of their presence
- All trenches and excavations must be inspected by the Company competent person each day, before work, to look for signs of shifting earth

CRANES AND RIGGING

- Don’t ride on loads, hooks, or slings of any crane, hoist, or derrick
- Do not work or stand under any suspended load, or swing loads over people
- Inspect all slings, chains, ropes, and hooks before use and remove defective equipment

WELDING AND CUTTING

- Make sure welding equipment is installed properly, is properly, and in good condition
- Always wear protective clothing suitable for the welding or cutting to be done
- Always wear proper eye protection when welding, brazing, soldering, or flame cutting. Once you remove your welding helmet, put on safety glasses
- Keep your work area clean and free of hazards. Make sure that no flammable, volatile or explosive materials are in or near the work area
- Regarding compressed gas cylinders: Keep caps on when not in use. Secure all compressed gas cylinders to the equipment carriage, wall, or other structural supports. When are empty close the valve, install the cap and return to correct bottle storage area
- Store compressed gas cylinders in a safe place with good ventilation. Acetylene cylinders and oxygen cylinders should be kept at least 20 feet apart
- Do not weld or cut in confined spaces without authorization and special precautions
- Do not weld on containers that have held combustibles or flammable materials
- Use mechanical exhaust ventilation at the point of welding when welding lead, cadmium, chromium, manganese, brass, bronze, zinc, or galvanized metals. These metals are highly toxic and their fumes should not be breathed
- Make sure all electrical connections are tight and insulated. Do not use cables with frayed, cracked or bare spots in the insulation
- When the electrode holder or cutting torch is not in use, hang it on the brackets provided. Never let it touch a compressed gas cylinder
- Dispose of electrode and wire stubs in proper containers since stubs and rods on the floor are a safety hazard
- Use weld curtains to shield others from the light rays produced by your welding
- Make sure all compressed gas connections are tight and check for leaks. Do not use hoses with frayed or cracked spots
- Keep your leads orderly and out of walkways. Suspend them whenever possible
- DO NOT WELD if leads or machine are in or near water
- Make sure a portable fire extinguisher is nearby
- Keep your work area clean and free of hazards. Do not allow flame cut sparks to hit hoses, regulators or cylinders
- Use oxygen and acetylene or other fuel gases with the right torches and tips
- Never use acetylene at a pressure in excess of 15 pounds per square inch
- Never use oil, grease or any other material on any apparatus or thread fitting in the oxyacetylene or oxy-fuel gas system
- Always use the correct sequence and technique for assembling and lighting the torch. Always use the correct sequence and technique for shutting off a torch
- Use check valves on all compressed gas cylinders to prevent back flow of the gas

COMPANY VEHICLES

- Only authorized employees are permitted to operate Company vehicles
- Company vehicles are to be used for Company business only
- Drive defensively and obey all traffic and highway laws
- Always wear your seat belt, whether the driver or a passenger
- Report all accidents as soon as possible to your supervisor and obtain a police report
- Keys must be removed from all unattended vehicles and the vehicles must be locked, unless parking inside the facility
- Do not jump from the cab or bed of Company vehicles
- Inspect your vehicle and report any defects or operating problems to your supervisor so that repairs can be made
- No smoking while refueling
- If your driver's license is revoked or expired, immediately notify your supervisor and do not drive or operate Company vehicles or equipment

TRAFFIC SAFETY

- All employees exposed to traffic hazards are required to wear orange flagging garments (shirts, vests, jackets) at all times
- When possible, construction vehicles are to be placed between the employees and traffic to prevent vehicles from entering the work area and hitting members of the crew
- All traffic controls will be established in accordance with the Manual of Traffic Controls for Construction and Maintenance Work Zones
- Traffic controls are to be properly maintained throughout the workday. Signs and cones must be kept upright, visible and in their proper position at all times

Code of Safe Practices Receipt

Solomon Corporation

This is to certify that I have received a copy of The Company Code of Safe Practices.

I have read these instructions, understand them, and will comply with them while working for the Company.

I understand that failure to abide by these rules may result in disciplinary action and possible termination of my employment with Solomon Corporation

I also understand that I am to report any injury to my foreman or superintendent immediately and report all safety hazards.

I further understand that I have the following “Safety Rights”:

- I am not required to work in any area I feel is not safe
- I am entitled to information on any hazardous material or chemical I am exposed to while working
- I am entitled to see a copy of The Company Safety and Health Manual.
- I will not be discriminated against for reporting safety concerns

_____ _____

Employee Name Signature Date

_____ _____

Supervisor Name Signature Date

cc: Employee File

POLICY

Solomon Corporation has adopted this policy to inform employees of the General Waste Management Plan. This ensures the safety and health of the employees.

Corporate EH&S Manager Mike Dahl is responsible for ensuring that the following policy is enforced.

WASTE TYPES

- Listed Wastes: Wastes that EPA has determined are hazardous. The lists include the F-list (wastes from common manufacturing and industrial processes), K-list (wastes from specific industries), and P- and U-lists (wastes from commercial chemical products)
- Characteristic Wastes: Wastes that do not meet any of the listings above but that exhibit ignitability, corrosivity, reactivity, or toxicity
- Universal Wastes: Batteries, pesticides, mercury-containing equipment (e.g., thermostats) and lamps (e.g., fluorescent bulbs)
- Mixed Wastes: Waste that contains both radioactive and hazardous waste components
- Construction Wastes: Building materials such as bricks, concrete, woo, insulation, nails, electrical wiring, and rebar, as well as waste originating from site preparation such as dredging materials, tree stumps, and rubble. Construction waste may contain lead, asbestos, or other hazardous substances
- Medical and Infectious Wastes: Waste generated by health care activities includes a broad range of materials, from used needles and syringes to soiled dressings, body parts, diagnostic samples, blood, chemicals, pharmaceuticals, medical devices and radioactive materials

PROCEDURES

WASTE ESTIMATION

Prior to the commencement of work, it is the policy of Solomon Corporation, to ensure that an estimation of the wastes, trash & scrap materials that will be generated is conducted. This will be performed so the need for containers, and waste removal, if necessary, can be determined.

WASTE DISPOSAL

Solomon Corporation will coordinate with the project or site owner to ensure the proper disposal of wastes or scrap materials. Solomon Corporation will ensure that the owner is aware of whether wastes and scrap materials will be taken off site or will be disposed of on the owner’s site.

Safety Hazards

Solomon Corporation will ensure safe practices related to the immediate storage and handling of waste, scrap, or left over materials are carried out. Always be aware of what you are handling. The proper Personal Protective Equipment (PPE) will be used before handling.

Handling, Organization, & Storage

Solomon Corporation will ensure that waste materials will be properly stored and handled to minimize the potential for a spill or impact to the environment. During outdoor activities, receptacles must be covered to prevent dispersion of waste materials and to control the potential for run-off.

It is the policy of Solomon Corporation that all types of waste or scrape materials generated will be stored properly and in an organized fashion.

Solomon Corporation ensures project-related wastes will be stored and maintained in an organized fashion to encourage proper disposal and minimize risks to employees. Proper waste receptacles will be provided for trash and materials that may be reused or recycled during a project.

Proper Methods of Disposal

It is the policy of Solomon Corporation to ensure all employees are instructed in the proper method to dispose of wastes.

Employees of Solomon Corporation will be instructed the general disposal of non-hazardous wastes, trash, or scrap materials. If wastes generated are classified as hazardous, employees will be trained to ensure proper disposal.

Waste Segregation

Solomon Corporation is committed to encouraging employees to properly segregate waste or scrap materials to ensure the opportunity for reuse or recycle.

POLICY

Solomon Corporation has implemented this policy to ensure no employee is exposed hazards caused by improper or unsafe use of hand and portable powered tools. Solomon Corporation will provide instruction and training by a Competent Person for each employee using any such tool. The program will enable each employee to recognize hazards related to hand and portable powered tool use and will train each employee in the procedures to be followed to minimize these hazards.

REFERENCES

- §1910.241 – Hand and Portable Powered Tools and Other Hand-Held Equipment
- §1926.300 – Tools - Hand and Power

RESPONSIBILITIES

EMPLOYER RESPONSIBILITIES

Solomon Corporation is responsible for:

- Ensuring that hand tool and powered equipment inspections portable of the facility occur on regular basis
- Ensuring each employee has been trained or instructed by a competent person in the following areas, as applicable:
  - All hand and power tools and similar equipment, whether furnished by Solomon Corporation or the employee, will be maintained in a safe condition
  - Any tool not in compliance with any applicable OSHA requirements is prohibited. Such tools will either be identified as unsafe by tagging or locking the controls to render them inoperable, or the defective tool will be physically removed from its place of operation
  - When power operated tools are designed to accommodate guards, they will be equipped with such guards when in use
  - Guards shall be in place and operable at all times while the tool is in use. The guard may not be manipulated in such way that will comprise its integrity or compromise the protection in which intended. Guarding shall meet the requirements set forth in American National Standards Institute (ANSI) B15.1
  - Employees using hand and power tools and exposed to the hazard of falling, flying, abrasive, and splashing objects, or exposed to harmful dusts, fumes, mists, vapors, or gases will be provided with the appropriate Personal Protective Equipment (PPE) necessary to protect them from the hazard
  - Belts, gears, shafts, pulleys, sprockets, spindles, drums, fly wheels, chains, or other reciprocating, rotating, or moving parts of equipment will be guarded if such parts are exposed to contact by employees or otherwise create a hazard

- One or more methods of machine guarding will be provided to protect the operator and other employees in the machine area from hazards such as those created by point of operation, ingoing nip points, rotating parts, flying chips, and sparks. The point of operation of machines whose operation 999exposes an employee to injury, will be guarded
- All fuel powered tools will be stopped while being refueled, serviced, or maintained. When fuel powered tools are used in enclosed spaces, the applicable PPE requirements for hazardous atmospheres will apply. Responding quickly to eliminate workplace hazards; ensuring all equipment is kept in good repair; ensuring employees follow safe job procedures; and reviewing job hazard analysis whenever there is a significant change to any element of the job or there has been an injury or illness

SAFETY COMMITTEE RESPONSIBILITIES

It is the responsibility of the safety committee to:

- Assist in hand tool and portable powered equipment inspections
- Assist in training employees to recognize and control workplace hazards
- Monitor the workplace for hazards
- Encourage employees to report hazards
- Implement appropriate controls
- Ensure corrective action is taken promptly

EMPLOYEE RESPONSIBILITIES

All employees are expected to:

- Inspect hand tool and portable powered equipment before use
- Remove defective hand tool and portable powered equipment
- Follow safe job procedures
- Report hazards to a supervisor immediately

SAFE PRACTICES

GENERAL POWER TOOL USE

- Do not allow anyone to use power tools that has not been properly instructed and approved in the processes of safe operation
- Be familiar with your power tools. When using a new tool, or one that is foreign to you, take some time to “test-run” it and get a feel for its performance. Read and understand the operator’s manual and follow its instructions. Prior to its use, do a visual and operational inspection to ensure safe mechanical function
- Eye protection is extremely important and must always be worn when using power tools. When operations present potential eye injuries, adequate and appropriate protection must be selected. Use a face shield, protective goggles, or approved safety glasses depending on the job performed
- Hearing protection is required due to the extreme noise levels generated, especially during extended operating sessions
- Depending on the material being cut, gloves can be helpful and a respirator or dust mask may be required
- Wear clothing appropriate for power tools use; avoid long, loose shirtsleeves, neckwear, or untied long hair
- Check that the electrical circuit to be used is of the proper rating and that cords, plugs, and fittings are intact and secure. All power tools must be grounded unless they are double insulated
- Use only extension cords that are free of splices, taps, bare wires, or frayed and deteriorated insulation. Use 3-prong adapters
- Ensure all power tools are equipped with proper shields and guards, as recommended by the manufacturer. The guards are designed and engineered for the operator’s safety
- Operate only properly maintained equipment. Check that spring-loaded on/off trigger switch functions properly
- If any operational problems are noted, remove the power tools from service and get it repaired immediately
- When repairing tools, changing blades, bits and/or cutters, disconnect the power source
- Remove chuck-keys or arbor wrenches before using the tool
- When possible, always secure your work on a stable platform using clamps or vices
- Unsafe practices and inadequate housekeeping create potentially dangerous work-zones; keep the work area free of trip hazards such as tangled power cords, cluttered material, scraps, bricks, or other obstacles and obstructions
- Be aware of your surroundings and always on the lookout for hazards. Avoid using power tools in a wet environment
- Always use the proper tool for the job. store tools in a dry, secure location

POWDER-ACTUATED TOOLS

Solomon Corporation employees are required to follow these general requirements for safe powder-actuated tool use:

- Operators and assistants using tools must use eye, head, and face protection as required by working conditions
- Inspect the tool before use to ensure that it is clean, that all moving parts are free, and that the barrel is free of debris or obstructions
- The muzzle end of the tool must have a guard at least 3 ½" in diameter to confine any flying fragments that might create a hazard
- If a tool is defective, it must be taken out of use until it is properly repaired
- Tools are to remain unloaded until they are to be used
- Never point a tool, loaded or unloaded, at anyone
- In case of a misfire, the tool must be held in the operating position for at least 30 seconds, tried a second time, then wait another 30 seconds before unloading in strict accordance with manufacturer's instructions. Never leave a tool unattended where it would be available to unauthorized personnel
- Fasteners must not be driven into exceptionally hard materials such as cast iron, glazed tile, hardened steel, glass block, or rock
- A backing must be used on soft materials to prevent fastener from passing completely through and becoming a flying hazard
- Fasteners must not be driven through an existing hole unless means of positive alignment is available
- Fasteners may not be driven into a cracked or fractured area caused by a previous fastener
- Tools must not be used in an explosive or flammable atmosphere

Requirements for loads and fasteners:

- There must be a standard means of identifying the power level of loads being used in the powder actuated tools
- No load may be used in excess of design specifications for a low velocity tool
- Fasteners used in tools must be only those designed to be used in such tools

CIRCULAR SAWS

Solomon Corporation employees are required to follow these safety guidelines when using a circular saw:

- Eye protection is extremely important and must always be worn when using circular protection must be selected. Use a face shield, protective goggles, or approved safety glasses depending on the job to be performed
- Hearing protection may be required due to the extreme noise levels generated, especially during extended use
- A respirator or dust mask may be required, depending on the material being cut
- Do not wear loose clothing, long-sleeves, or gloves while operating a circular saw
- Check that the electrical circuit to be used is of the proper rating and that cords, plugs, and fittings are intact and secure
- Circular saws must be grounded unless they are double insulated
- Use only extension cords that are free of splices, taps, bare wires, or frayed and deteriorated insulation. Do not use extensions over 100 ft. long due to the power drop. Operate only properly maintained equipment. Check that the spring-loaded on/off trigger switch functions properly. If any operational problems are noted, remove the circular saw from service and get it repaired immediately
- Be aware of your surroundings and always on the lookout for hazards. Avoid using circular saws in a wet environment
- Always cut material on an elevated work platform. Never attempt to cut any material lying on the ground or by simply holding the material in your opposite hand
- Be aware of the position of the cord. Always clear the cord before making the cut
- Inspect all material prior to cutting. Look for defects such as knots in the wood, nails and screws, or any obstruction that may impede the cut
- Always inspect the saw prior to operation, ensuring the blade is tight and guards are fully functional
- Never pin back or otherwise disable the retractable guard
- Unplug the saw when changing blades or making adjustments for depth or angle
- After tightening the blade or making other adjustments, be sure to remove wrench before operating the circular saw
- Maintain the saw and use only sharp blades or non-defective abrasive wheels free of distortion, cracks, or heat damage. A ring test will be performed on blades prior to installation to determine soundness
- Always store and discard saw blades in a safe responsible manner
- When the saw is not in use unplug the saw and place the saw out of the way with the blade facing down
- Always use the proper tool for the job. When not in use, store circular saws in a dry, secure location

MITER SAWS

Solomon Corporation employees are required to follow these safety guidelines when using a miter cut-off (chop) saw:

- Do not ever, under any circumstances, allow anyone to use a chop saw that has not been properly instructed and approved in the processes of its safe operation
- Prior to its use, do a visual and operational inspection to ensure safe mechanical function of the saw:
  - Make certain all blade guards are in place and working smoothly. Removing or pinning back guards is not only extremely hazardous; it is considered a serious safety violation
  - Check the blade to be sure that it is straight and the arbor bolt is tight
  - Ensure the “constant-pressure” trigger switch operates properly
  - Check that the electrical cords, plugs, and fittings are intact and secure. Frayed cords are not permissible
  - Be sure that arbor wrenches or keys were not inadvertently left behind on the machine during a blade change
- When setting-up the cutting station, it is important that the saw is positioned in a manner that the work piece’s point of contact with the cutting edge can be easily viewed without straining or stooping
- Make sure the work-zone is level and free of trip hazards such as tangled power cords, cluttered material piles, scraps, stones, bricks, or other obstacles and obstructions. Avoid unsafe distractions by setting up away from high traffic areas
- Ensure the saw’s table or platform being used is stable and does not wobble. Be sure that accessory benches (for cutting long stock) are steady and sturdy; get assistance when needed
- During cuts, keep blade speeds at recommended levels; over-pressure on cuts will create hazardous situations
- Hearing protection is required due to the extreme sonic and acoustical levels generated, especially during extended cutting
- Eye protection must always be worn when using a chop saw
- Depending on the material being cut, a dust mask may be required
- Wear clothing appropriate with chop saw use; avoid long, loose shirtsleeves, neckwear, or untied long hair
- If any operational problems are noted, remove the saw from service and get it repaired immediately
- Proper care and maintenance should always be given the saw. Damage usually occurs during careless transport, handling, and storage of the tool
- Allow only qualified personnel to make repairs to the saw

DRILLS

- Do not allow anyone to use an electric drill that has not been properly trained in the processes of safe portable drilling operations
- Operate only properly maintained equipment. Before use, carefully inspect the machine for defects that could cause malfunctions. Ensure the power cord is secure and intact, trigger switch functions properly, and that fasteners and attachments are tight and fitted. Operate the tool using both hands and follow the manufacturer's operating instructions
- Eye protection must always be worn when doing overhead operations. When operations present potential eye injuries, appropriate protection must be selected. Depending on the task, use a face shield, protective goggles, or approved safety glasses
- When using a new or unfamiliar tool, take time to "test-run" it
- Wear clothing appropriate for drilling or boring; avoid long, loose shirtsleeves, neckwear, or untied long hair
- The electrical circuit is properly rated and that cords, plugs, and fittings are intact and secure
- Use only extension cords that are free of splices, taps, bare wires, or frayed and deteriorated insulation. Use 3-prong adapters
- Select the correct drill and bit for the job and mount it securely in the chuck. Avoid using bits that are dull or bent
- When possible, always secure your work on a stable platform using clamps or vices. The work-piece must be secured so it does not move
- Prior to beginning drilling operations, inspect each work piece for nails, knots, or flaws that could cause the tool to buck or jump
- Turn on the switch for a moment to see if the bit is properly centered and running true
- With the switch off, place the point of the bit in the punched layout or pilot hole
- Hold the drill firmly in one or both hands and at the correct drilling angle
- Turn on the switch and feed the drill into the work-piece. The pressure required will vary with the size of the drill, the diameter of the drill bit, and the kind of material being drilled
- During operation, keep the drill aligned with the direction of the hole. Keep your free hand away from point of operation
- If any operational problems are noted, remove the drill from service and get it repaired immediately
- work-zones; keep the work area free of trip hazards such as tangled power cords, cluttered material, scraps, stones, bricks, or other obstacles When repairing tools or changing bits, always disconnect the power source
- Unsafe practices and inadequate housekeeping create potentially dangerous and obstructions.
- Be aware of your surroundings and always on the lookout for hazards. Avoid using electric drills in a wet environment

PORTABLE ABRASIVE WHEELS

Solomon Corporation employees are required to follow these safety guidelines when using handheld grinders or other portable abrasive wheels:

- Employees using grinding tools and/or are exposed to the hazards of falling, flying, abrasive, and splashing objects, or exposed to harmful dusts, fumes, or vapors will be provide with, and compelled to use, the particular personal protective equipment necessary to protect them from the hazard. This equipment includes eye and face, respiratory, hearing, and hand protection and will be properly maintained to meet all applicable standards
- All power grinding tools will be maintained in a safe condition. When these tools are designed to accommodate guards, they will be in place when the tool is in use. Safety guards will be strong enough to retain flying fragments and withstand the effects of a bursting wheel
- All grinding machines will be supplied with sufficient power to maintain safe spindle speeds under normal operating conditions
- All abrasive wheels will be carefully inspected and “ring-tested” before mounting to ensure that they are free from cracks or defects. To perform a sound or ring test, wheels should be tapped gently with a light, non-metallic instrument. If they sound cracked or dead, they could fly apart during operations and should be discarded. An intact, undamaged wheel will give a clear metallic tone or “ring”
- Only portable grinders with wheels 2 inches in diameter or less may be equipped with a positive on/off control switch. Grinders with wheels greater than 2 inches in diameter will be equipped with a momentary contact on/off switch and may have a lock-on control
- Grinders will be used on a 3-wire grounded circuit or be of the approved double insulated type. Using the tool’s power cord for hoisting or lowering will not be permitted
- All grinding/cutting wheels will fit freely on the spindle and must not be forced on. The spindle nut will be tightened only enough to hold the wheel in place
- When grinding metal, it is easy to leave razor-sharp edges; be sure you take them off before walking away from a work piece

PNEUMATIC NAILERS AND STAPLERS

- Never allow anyone to operate these tools without proper instruction in safe use
- Appropriate PPE must be worn when using compressed air tools and equipment
- Pneumatic powered tools must be secured to the hose by some positive means to prevent the tool from becoming accidentally disconnected
- All pneumatically powered nailers, staplers, or other similar equipment with automatic feed, that operate at over 100 psi at the tool, must have a safety device on the muzzle to prevent the tool from cycling and ejecting fasteners, unless the muzzle is in contact with the work surface
- Don't use compressed air to clean except where pressure is reduced to less than 30 psi
- The manufacturer's safe operating pressure for hoses, pipes, valves, filters, and other fittings must not be exceeded
- Avoid horseplay when using "air guns"
- Leave all safety features intact
- Always wear appropriate eye protection when using any air gun
- Hearing protection is often required depending on the noise level
- Read the owner's manual and operate the tool according to manufacturer's guidelines
- Ensure that tools are properly maintained and are in good working condition
- Never exceed manufacturer's recommended working pressures and never use more pressure than necessary (seldom more than 90 – 95 psi). Excessive pressure exerts more force, causing harder cycles. It is hard on tools and generates more flying debris
- Always keep the nose of the tool pointed toward the work-piece or downward when air charged. Never point the tool towards yourself or others
- During use, hold the nose of the gun firmly against the work-piece
- Ensure all safety features are intact and operational
- Always disconnect tool from air supply when clearing a jam or when not in use. Keep hoses and fittings in good condition
- Never carry an air-gun with your finger on the trigger. Accidental discharge and injury may result
- Tie-off and secure the air hose when working on a roof or scaffold to prevent the tool from falling on others
- Always move forward when working a nailer or stapler on a roof so you do not inadvertently trip or fall from the roof
- Never use volatile bottled gas to operate pneumatic fasteners or operate air guns around flammables; sparks may cause a fire
- Keep your free hand clear of air gun's nose during use
- Safety clips or retainers must be securely installed and maintained on pneumatic impact (percussion) tools to prevent attachments from being accidentally expelled

AIR COMPRESSORS

Solomon Corporation employees are required to follow these safety guidelines while operating air compressors:

- Every air receiver must be equipped with a pressure indicator gauge with one or more spring loaded safety valves
- Pressure gauges must be located so as to be readily visible
- The pressure relief safety valves may not exceed the rated working pressure of the air receiving tank
- No valve of any type may be placed between the safety valve and the air receiver
- Safety valves, pressure gauges, regulators, and other controlling devices must be designed and installed so that they cannot be easily rendered inoperative by any means, including weather elements
- All safety valves must be tested at frequent intervals to determine proper operating condition
- A drainpipe and valve must be installed at the lowest point of any air receiver to provide for the frequent and complete removal of accumulated oil and water
- Never install compressors on an unrated air tank. The air receiver tank must be rated equal to or higher than original equipment
- If pressure gauges or pressure relief valves are damaged, replace them with compatible equipment before using the compressor
- If a compressed air storage tank is dented, deeply gouged, or badly rusted, compressor must be removed from service
- Do not use compressed air to pressurize barrels, pipes, or other containers not designed or intended as pressure vessels
- If an air receiver is equipped with a quick connect/release fitting, make sure the lock collar is fully engaged when hose is connected. When the hose is released from the fitting, firmly grasp the hose close to the fitting before releasing the lock collar
- Before servicing a compressor, disconnect it from the power source and bleed the pressure from the tank. Use appropriate Lockout Tagout (LOTO)
- Pulleys and belts on compressor motors and pumps must be properly guarded
- If using a gas powered compressor, engine must be shut off before refueling
- If an electric powered compressor, check power cord for cuts and abrasions, if the cord, plug, or any components are damaged, replace before use

HAND TOOLS

- Damaged, worn-out, or defective tools should be tagged and removed from service
- Do not perform "make-shift" repairs to tools
- Never use a tool if its handle has splinters, burrs, cracks, splits or if the head of the tool is loose
- Do not use impact tools such as hammers, chisels, punches or steel stakes that have mushroomed heads
- When handing a tool to another person, direct sharp points and cutting edges down and away from yourself and the other person
- Carry all sharp tools in a sheath or holster. Do not carry sharp or pointed hand tools such as screwdrivers, utility knives, scribes, snips, scrapers, chisels or files in your pocket unless the tool is sheathed. Transport hand tools only in toolboxes or tool belts
- Use tied off containers to keep tools from falling off scaffolds and other elevated work platforms
- Avoid carrying tools in your hand when you are climbing. Carry tools in tool belts or hoist the tools to the work area using a hand line
- Do not throw tools from one location to another or from one employee to another

Hammers: Do not use a hammer if your hands are oily, greasy or wet

- Never strike another hardened steel tool or surface, such as a cold chisel, with a claw hammer
- Avoid striking nails or other objects with the "cheek" of the hammer
- Do not strike one hammer against another hammer
- Never use a hammer as a wedge or a pry bar

Hand Saws: When using a handsaw, hold the work-piece firmly against the work table.

- Do not use an adjustable blade saw, such as a hacksaw or a coping saw, if the blade is not taut
- Avoid using any saw with a dull blade; always keep blades clean and sharp
- Keep hands and fingers away from the point of cut when using any saw
- Never carry a hand saw by the blade

Screwdrivers: Do not use a screwdriver if your hands are wet, oily or greasy.

- Always match the size and type of screwdriver blade to fit the head of the screw
- Never hold the work-piece against your body while using a screwdriver
- Avoid putting your fingers near the blade of the screwdriver when tightening a screw
- Use a drill, nail, or an awl to make a starting or pilot hole for screws
- Do not force a screwdriver by using a hammer or pliers on it
- Never use a screwdriver as a punch, chisel, pry bar, or nail puller
- When performing electrical work, ensure the screwdriver has a properly insulated handle

Pliers: Do not use pliers that are cracked, broken or sprung.

- Never use pliers as a wrench or a hammer
- Do not attempt to force pliers by using a hammer on them
- When you are performing electrical work, use pliers that have properly insulated handles
- When using diagonal cutting pliers, shield the loose pieces of cut material from flying into the air

WRENCHES

Solomon Corporation employees are required to follow these safety guidelines when using wrenches:

- Inspect the wrench carefully before use and do not use if damaged
- Discard any wrench that has spread, nicked or battered jaws, or if the handle is loose, broken or bent
- Always use the proper size wrench for the job. A slipping wrench can damage bolt heads and nuts and cause personal injury. Do not use a shim to make a wrench fit the fastener
- Use a wrench that gives a straight, clean pull. If you must push the wrench, use the heel of your hand; do not wrap your fingers around the tool
- Do not cock the wrench in a manner that puts a strain on the points of contact; this can lead to tool failure. Keep the wrench flush with bolt head
- Avoid using a pipe or other “cheater bars” to extend the length of a wrench. Under excessive force, the wrench or bolt can slip or break
- Do not use a hammer with a wrench unless the wrench has been specifically designed for this purpose
- Replace cracked, worn, or “tweaked” wrenches
- Do not attempt to straighten a bent wrench. It will only weaken it further
- Do not substitute slip-joint pliers for a wrench; the pliers can slip and damage the bolt heads and nuts and cause hand injuries
- Sockets designed for use with hand wrenches should not be interchanged on air or impact wrenches; this can result in damage or injury
- When using air impact or other air wrenches, wear eye protection to safeguard against blowing debris. Use only heavy-duty hardened sockets
- Use a torque wrench for tightening only. Never use torque wrenches to break nuts or bolts loose; they are designed to measure tightness
- Be sure the jaws on you pipe wrenches are still sharp as unexpected slippage can cause injury

JACKS - LEVER AND RATCHET, SCREW, AND HYDRAULIC

Solomon Corporation employees are required to follow these safety guidelines when using jacks:

- The manufacturer's rated capacity will be legibly marked on all jacks and will not be exceeded
- All jacks will have a positive stop to prevent overtravel
- When it is necessary to provide a firm foundation, the base of the jack will be blocked or cribbed. Where there is a possibility of slippage of the metal cap of the jack, a wood block will be placed between the cap and the load
- After the load has been raised, it will be cribbed, blocked, or otherwise secured at once
- Hydraulic jacks exposed to freezing temperatures will be supplied with an adequate antifreeze liquid
- All jacks will be properly lubricated at regular intervals
- Each jack will be thoroughly inspected at times which depend upon the service conditions. Inspections will be not less frequent than the following:
  - For constant or intermittent use at one locality, once every 6 months
  - For jacks sent out of shop for special work, when sent out and when returned
  - For a jack subjected to abnormal load or shock, immediately before and immediately thereafter
  - Repair or replacement parts will be examined for possible defects
  - Jacks which are out of order will be tagged accordingly, and will not be used until repairs are made

POLICY

Solomon Corporation has implemented this program to ensure employees are informed of any chemical hazards and hazardous or toxic substances in their workplace:

Solomon Corporation will develop, implement, and maintain at each workplace a written hazard communication program that describes how labels and other forms of warning, safety data sheets, and employee information will be accomplished.

A copy of the Company's Hazard Communication Program is available to all employees, and will be kept at each jobsite by the foreman in charge, or in the office. Translations of the hazard communication program are available to non-English speaking employees upon request from Corporate EH&S Manager Mike Dahl.

Employees will be notified of any hazardous substances used by any company other than Solomon Corporation in the workplace, and make safety data sheets available to employees.

A list of all chemicals known to be used at the workplace by company employees will be available for review at the jobsite and in the office. Safety Data Sheets (SDS) for all chemicals used in the workplace by Solomon Corporation are available to employees at the worksite from the job foreman or in the office.

Changes of job assignments, changes in materials used, or any non-routine tasks involving hazardous substances or conditions will require notification and/or retraining of effected employees. Corporate EH&S Manager Mike Dahl will inform or retrain employees of any new or additional hazards, detail methods of hazard abatement or elimination, and provide proper personal protective equipment or engineering controls necessary for the job. Notifications and retraining will be documented as to name of employee, date, description of action taken, and verification by Corporate EH&S Manager Mike Dahl.

CONTAINER LABELING

Corporate EH&S Manager Mike Dahl will ensure that each container of hazardous chemicals in the workplace is labeled, tagged, or marked with the following information:

- Identity of the hazardous chemical(s)
- Pictograms
- A signal word
- Hazard and precautionary statements
- The product identifier
- Supplier identification

Corporate EH&S Manager Mike Dahl will ensure labels or other, written warning forms, are legible and prominently displayed on the container, or readily available in the work area throughout each work shift. When Solomon Corporation has employees, whose primary language is not English, information shall be presented in their language as well.

No container will be released for use until this information is verified. *Corporate EH&S Manager Mike Dahl* will ensure that all containers are labeled with a copy of the original manufacturer's label or a label that has the appropriate identification and hazard warning.

SAFETY DATA SHEETS

A SDS will be gathered and made available for every hazardous material at the worksite.

SDS are readily available for review to all Solomon Corporation employees, and cover all hazardous chemicals used in the workplace. SDS are kept with the hazard communication plan at the office location listed above. The safety data sheets are updated and managed by Corporate EH&S Manager Mike Dahl. If a safety data sheet is not available for a hazardous chemical, before use, notify Corporate EH&S Manager Mike Dahl, and a SDS will be obtained for the chemical to be used.

TRAINING

REQUIRED HAZARD COMMUNICATION TRAINING

If you have employees who may be exposed to hazardous chemicals, you must inform them about the chemicals and train them when they are hired and whenever they are exposed to a new chemical hazard or a process change. Required employee training includes:

- An overview of the requirements in OSHA's CFR 29 1910.1200 hazard communication
- The written hazard-communication plan, and where it may be reviewed
- Hazardous chemicals present in their workplace
- The operations where hazardous chemicals are used
- Physical and health effects of the hazardous chemicals
- Methods used to determine the presence or release of hazardous chemicals in the work area
- How to reduce or prevent exposure to these hazardous chemicals through use of control/work practices and personal protective equipment
- Where to find and how to read the hazard-communication plan, the list of hazardous chemicals, and SDS
- The physical and health hazards of hazardous chemicals used by employees
- The meaning of warning labels on hazardous-chemical containers and on pipes that contain hazardous substances
- Emergency procedures to follow if an employee is exposed to these chemicals
- How to use personal protective equipment

LABEL ELEMENTS TRAINING

Solomon Corporation will ensure all employees know the following elements of the labels: product identifier, signal word, pictogram, hazard statement, precautionary statement, and name address and phone number of chemical manufacturer, distributer, or importer.

Employees will also be trained on how to use the labels, to ensure proper storage and quickly locate first aid information.

They also need to know how the elements work together on a label.

- The different pictograms to indicate multiple hazards
- Where there are similar precautions, the one with most protective information will be on the label

SDS TRAINING

Employees will be trained on the standardized 16-section format and the type of information found in each one.

Training will also explain how the SDS information is related to the label information.

After attending the training, each employee will sign a company training form verifying they understand the above topics and how the topics are related to our hazard communication plan.

HAZARDOUS CHEMICALS LIST

The following list identifies all hazardous chemicals used at this workplace. Detailed information about the physical and health effects of each chemical is included in a safety data sheet; the identity of each chemical on the list matches the identity of the chemical on its safety data sheet. Safety data sheets are readily available to employees in their work areas.

Product or Brand Name	Manufacturer	Hazardous Ingredient

HAZARDOUS NON-ROUTINE TASKS

Before employees perform non-routine tasks that may expose them to hazardous chemicals, they will be informed by their supervisors about the chemicals' hazards. Their supervisors also will inform them about the safe work practices necessary to control exposure and what to do in an emergency. Examples of non-routine tasks that may expose employees to hazardous chemicals include the following:

Task:	Hazard:

HAZARDOUS CHEMICALS IN PIPES, CLOSED, OR HIDDEN SYSTEMS

Before working in areas where hazardous chemicals are transferred through pipes or where pipes are insulated with asbestos-containing material, employees will contact _____ for the following information: the chemicals in the pipes; the physical or health effects of the chemicals or the asbestos insulation; the safe work practices to prevent exposure.

NOTIFICATION OF CONTRACTORS

It is the responsibility of the assigned job foreman to provide any workplace-associated contractors and their employees with the following information, if they may be exposed to hazardous chemicals in our workplace:

- The identity of the chemicals, how to review safety data sheets, and an explanation of the container and pipe labeling system
- Safe work practices to prevent exposure

This person will also obtain a safety data sheet for any hazardous chemical a contractor brings into the workplace to which an employee of Solomon Corporation may be exposed.

HAZARD COMMUNICATION IN THE WORKPLACE

The essence of hazard communication is a warning. We use thousands of chemical products throughout our lives, at home and at work. However, most of us would be hard-pressed to distinguish safe products from hazardous ones without a warning (the familiar skull-and-crossbones, for example). The warning tells us the product is hazardous, that it can harm us if we use it improperly.

In the workplace, hazard communication ensures workers who may be exposed to hazardous chemicals know about the chemicals' hazards and understand how to protect themselves from exposure.

THE HAZARD COMMUNICATION PROCESS

Hazard communication begins when chemical manufacturers and importers evaluate their products to determine each product's chemical hazards. Next, they prepare a *Safety Data Sheet* (SDS) for each product. An SDS includes detailed information about the product's hazards. Manufacturers and importers must include an SDS and a warning label with each container of product they ship to a customer.

The part of the process that affects your workplace is the "*Written Hazard Communication Plan*." The plan identifies hazardous chemicals at your workplace and describes how you will use safety data sheets, warning labels, and training to protect employees and keep informed about the product's chemical hazards.

The labeling system, location of SDS, routine precautions and emergency procedures will be provided to other employers and employees who may be affected by hazardous chemicals produced, used, or stored at the worksite.

DEFINITION OF A HAZARDOUS CHEMICAL

OSHA's hazard-communication rule, 1910.1200, defines a hazardous chemical as "any element, chemical compound, or mixture that is a physical hazard or a health hazard".

CHEMICALS THAT ARE PHYSICAL HAZARDS

Chemicals that are physical hazards are unstable and, when handled improperly, can cause fires or explosions. A chemical that is a physical hazard has one of the following characteristics:

- Is a combustible liquid
- Is a compressed gas
- Is explosive
- Is flammable
- Is water-reactive
- Starts or promotes combustion in other materials
- Can ignite spontaneously in air

CHEMICALS THAT ARE HEALTH HAZARDS

Chemicals that are health hazards can damage an exposed person's tissue, vital organs, or internal systems. Generally, the higher the chemical's toxicity, the lower the amount or dose necessary for it to have harmful effects. The effects vary from person to person, ranging from temporary discomfort to permanent damage, depending on the dose, the toxicity, and the duration of exposure to the chemical.

Health effects range from short-duration symptoms that often appear immediately (acute effects) to persistent symptoms that may appear after longer exposures (chronic effects). Health effects can be classified by how they affect tissue, vital organs, or internal systems:

- Agents that damage the lungs, skin, eyes, or mucous membranes
- Carcinogens cause cancer
- Corrosives damage living tissue
- Hematopoietic agents affect the blood system
- Hepatotoxins cause liver damage
- Sensitizers cause allergic reactions & Irritants cause inflammation of living tissue
- Nephrotoxins damage cells or tissues of the kidneys
- Neurotoxins damage tissues of the nervous system
- Reproductive toxins damage reproductive systems, endocrine systems, or a developing fetus

HOW TO DETERMINE WHETHER A CHEMICAL IS HAZARDOUS

A chemical is hazardous if it is listed in any of the following documents:

- OSHA Division 2, Subdivision Z safety and health rules, Toxic and Hazardous Substances; Division 3, Subdivision Z, Toxic and Hazardous Substances (Construction); Division 4, Subdivision Z, Chemical/Toxins (Agriculture)
- Threshold Limit Values for Chemical Substances and Physical Agents in the Work Environment (latest edition). Published by the American Conference of Industrial Hygienists (ACGIH)
- The Registry of Toxic Effects of Chemical Substances, published by the National Institute for Occupational Safety and Health (NIOSH)
- The container label of the product will issue a warning of hazardous effects

COMMONLY-USED HAZARDOUS CHEMICALS

Listed below are chemicals among those most commonly used in U.S. workplaces:

Hazardous Chemical	Harmful Effects
1,1,1-Trichloroethane	May cause mutations in cells; can irritate the skin and eyes and cause unconsciousness and death. High exposures may damage the liver and kidneys.
Acetone	Can irritate the skin, eyes, nose, and throat. High concentrations can cause dizziness and loss of consciousness.
Aluminum oxide	Can irritate the eyes, nose, and throat. Repeated high exposure can cause scarring of the lungs and shortness of breath.
Ammonia	Can irritate the lungs and burn the eyes and skin. Long-term exposure can cause irritation of the eyes, nose, mouth, and throat.
Benzene	A cancer-causing agent that has been shown to cause leukemia. May also cause headaches and irritation of the eyes, nose, and throat. High exposure can cause convulsions and death.
Ethylbenzene	Can irritate the eyes, nose, and throat. Repeated contact can cause drying and scaling of skin and may cause liver damage. High concentrations may cause dizziness and loss of consciousness.
Ethylene glycol	Can irritate the eyes, nose, or throat and cause nausea, vomiting, and headaches. Repeated or high exposure levels can cause kidney damage or stones and brain damage. May cause birth defects.
Freon 113	May cause skin irritation and rashes as well as drowsiness.
Glycol ethers	Can irritate the eyes, nose, and throat and may cause birth defects. Repeated or high exposure can cause kidney damage or stones. Brain damage also may occur.
Hydrochloric acid	Can irritate the lungs. High exposure can cause buildup of fluid in the lungs, which can cause death.
Lead	Can cause weakness and insomnia. Higher exposure can result in damage to the nervous and reproductive systems.
Methanol	Irritates the eyes, nose, mouth, and throat and can cause liver damage.
Methyl ethyl ketone	Can cause dizziness, headaches, blurred vision, and loss of consciousness. May cause birth defects.
Methyl isobutyl ketone	Irritates the skin, eyes, nose, and throat, and may cause dizziness, nausea, diarrhea, and loss of consciousness. Long-term exposure may damage the liver and kidneys.
Phenol	Can irritate the mouth, nose, throat, and eyes. Long-term exposure may damage the liver and kidneys and lead to genetic damage. May be a cancer risk. Major skin contact or inhaling it can cause death.
Sodium hydroxide	Breathing the dust or droplets can irritate and burn the lungs. Contact can cause severe skin burns.
Sulfuric acid	Can severely burn the skin and eyes. Repeated long-term exposure can cause bronchitis, shortness of breath, and emphysema.
Tetrachloroethylene	A suspected human carcinogen that has caused liver cancer in animals. It may damage the liver and kidneys after low but repeated exposure. It can cause dizziness and loss of consciousness.
Xylene	Can irritate the eyes, nose, and throat; high levels can cause loss of consciousness and death. It may damage fetuses. Repeated exposure may damage bone marrow and eyes and cause stomach problems.

Using Safety Data Sheets

An SDS contains detailed information about a hazardous chemical product's health effects, physical and chemical characteristics, and safe practices for using it.

Responsibilities of Chemical Manufacturers, Importers, and Distributors

Chemical manufacturers and importers must prepare an SDS for each hazardous chemical product they produce. Distributors are responsible for ensuring that you have an SDS for each hazardous chemical product they sell to you.

What to do if You Use Hazardous Chemical Products at your Workplace

You must have a current SDS for each product. Employees must be able to review the SDS in their work area at any time. You can keep SDS in a notebook or on a computer, though employees must be able to obtain the information immediately in an emergency. One person should be responsible for managing all the SDS at your workplace. The person should ensure the list of hazardous chemicals is current, that the identity of each chemical on the list matches its identity on its SDS, and that incoming hazardous chemical containers have an SDS.

What to do When You No Longer Use a Hazardous Chemical at Your Workplace

When you no longer use a hazardous chemical, you do not need to keep its SDS. However, you do need to keep a record of the chemical's identity, the locations, and the calendar years it was used in your workplace, for at least 30 years. For more information about record-keeping requirements, see the "Access to employee exposure and medical records" section of 1910.1020.

Information required on Safety Data Sheets

Chemical manufacturers and importers must prepare an SDS for each hazardous chemical product they ship to you. The following information must appear on each sheet.

Section 1, Identification includes product identifier; manufacturer or distributor name, address, phone number; emergency phone number; recommended use; restrictions on use.

Section 2, Hazard(s) identification includes all hazards regarding the chemical; required label elements.

Section 3, Composition/information on ingredients includes information on chemical ingredients; trade secret claims.

Section 4, First-aid measures includes important symptoms/effects, acute, delayed; required treatment

Section 5, Fire-fighting measures lists suitable extinguishing techniques, equipment; chemical hazards from fire.

Section 6, Accidental release measures lists emergency procedures; protective equipment; proper methods of containment and cleanup.

Section 7, Handling and storage lists precautions for safe handling and storage, including incompatibilities.

Section 8, Exposure controls/personal protection lists OSHA's Permissible Exposure Limits (PELs); Threshold Limit Values (TLVs); appropriate engineering controls; personal protective equipment (PPE

Section 9, Physical and chemical properties lists the chemical's characteristics.

Section 10, Stability and reactivity lists chemical stability and possibility of hazardous reactions.

Section 11, Toxicological information includes routes of exposure; related symptoms, acute and chronic effects; numerical measures of toxicity.

Section 12, Ecological information*

Section 13, Disposal considerations*

Section 14, Transport information*

Section 15, Regulatory information*

*OSHA does not require these sections.

Section 16, Other information, includes the date of preparation or last revision.

USING CONTAINER WARNING LABELS

The purpose of a container warning label is to warn employees about the container's contents and to refer employees to an appropriate SDS for more information about the chemical's physical and health hazards. Manufacturers, importers, and distributors must ensure that each hazardous chemical product sold to you has a label that includes the chemical's identity, a hazard warning, and a name and address for additional information about the product. If you use hazardous chemicals at your workplace, you must ensure that each hazardous chemical container has a legible label, in English, that identifies the chemical and warns of its hazards.

CONTAINERS THAT MUST BE LABELED

Original containers of hazardous chemicals from a manufacturer, importer, or distributor must have warning labels. Do not remove or deface them. If you transfer a hazardous chemical from a labeled container to an unlabeled container, label the container.

CONTENTS OF A WARNING LABEL

A warning label must identify the chemical – a common chemical name or a code name is acceptable – and display a hazard warning such as DANGER or the familiar skull and crossbones.

- The identity of the chemical on the label, on its SDS, and on your hazardous chemical sheet must match
- If you are not sure a hazardous chemical container is properly labeled, contact the manufacturer or supplier
- Make someone at your workplace responsible for ensuring all hazardous-chemical containers are properly labeled

EXAMPLE OF ORIGINAL CONTAINER GHS LABEL

SAMPLE LABEL

CODE _____
Product Name_____

Product Identifier

Company Name_____
Street Address_____
City_____ State____
Postal Code_____Country____
Emergency Phone Number_____

Supplier Identification

Hazard Pictograms

Signal Word
Danger

Highly flammable liquid and vapor.
May cause liver and kidney damage.

Hazard Statements

Keep container tightly closed. Store in a cool, well-ventilated place that is locked.
Keep away from heat/sparks/open flame. No smoking.
Only use non-sparking tools.
Use explosion-proof electrical equipment.
Take precautionary measures against static discharge.
Ground and bond container and receiving equipment.
Do not breathe vapors.
Wear protective gloves.
Do not eat, drink or smoke when using this product.
Wash hands thoroughly after handling.
Dispose of in accordance with local, regional, national, international regulations as specified.

In Case of Fire: use dry chemical (BC) or Carbon Dioxide (CO_2) fire extinguisher to extinguish.

First Aid
If exposed call Poison Center.
If on skin (or hair): Take off immediately any contaminated clothing. Rinse skin with water.

Precautionary Statements

Supplemental Information

Directions for Use
_____
_____
_____

Fill weight:_____ Lot Number:_____
Gross weight:_____ Fill Date:_____
Expiration Date:_____

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SECONDARY/PORTABLE CONTAINERS

Secondary containers are used to hold material transferred from the manufacturers' original container. These are required to be labelled if:

- Is not used within the work shift by the individual who makes the transfer
- The worker who made the transfer leaves the work area
- The container is moved to another work area and is no longer in the possession of the person who filled the container

Labels for secondary containers must include:

- The identity of the chemical and appropriate hazard warnings must be shown on the label.
- The hazard warning that provides users with an immediate understanding of the primary health and/or physical hazard(s) of the chemical through the use of words, pictures, symbols, or any combination of these elements
- The name and address of the manufacturer, importer or other responsible party

The hazard label message must be legible, permanently displayed and written in English

Portable containers are intended for immediate use of a chemical by the person who makes the transfer. Labels on portable containers are not required if the worker who made the transfer uses all of the contents during the work shift, or the chemical is return to a labelled primary or secondary container at the end of the shift, or when work is completed.

POLICY

Solomon Corporation has implemented this plan to ensure no employees are exposed to Heat Stress Illnesses (HRI) in the workplace, and will evaluate if heat could be a problem on a particular day based on temperature and humidity levels. If required, Solomon Corporation will implement adequate controls, methods, or procedures to reduce the risk of HRI and prevent heat illness in outdoor places of employment.

RESPONSIBILITIES

EMPLOYERS

- Adjust work practices as necessary when labor complain of heat stress
- First try to control exposure through engineering controls
- Oversee heat stress training and acclimatization for new labor and for labor who have been off the job for a while
- Provide worker education and training, including periodic safety meetings on heat stress during hot weather or during work in hot environments
- Monitor the workplace to determine when hot conditions arise
- Determine whether labor are drinking enough water
- Determine a proper work/rest regimen for labor
- Arrange first aid training for labor
- When working in a manufacturing plant, for instance, a contractor may wish to adopt the plant's heat stress program if one exists
- Ensure that the program and procedures are documented and available to all labor

SAFETY COMMITTEE

- Assist in ensuring heat stress management is followed when necessary
- Assist in training employees to recognize and control workplace hazards
- Monitor the workplace for hazards
- Encourage employees to report hazards
- Implement appropriate controls
- Ensure corrective action is taken promptly

EMPLOYEES

- Follow instructions and training for controlling heat stress
- Be alert to symptoms in yourself and others
- Avoid consumption of alcohol, illegal drugs, and excessive caffeine
- Check if prescription medications can increase heat stress
- Get adequate rest and sleep
- Drink small amounts of water regularly (up to 4 cups per hour) to maintain fluid levels and avoid dehydration

TRAINING

According to the National Institute of Occupational Safety and Health (NIOSH), heat stress training should cover the following components:

- Knowledge of heat stress hazards
- Recognition of risk factors, danger signs, and symptoms
- Awareness of first-aid procedures for, & potential health effects of, heat stroke
- Employee responsibilities in avoiding heat stress
- Dangers of using alcohol and/or drugs (including prescription drugs) in hot work environments

EMPLOYEE TRAINING

Training in the following topics will be provided to all supervisory and non-supervisory labor:

- Environmental and personal risk factors for heat illness
- Procedures for identifying, evaluating, and controlling exposures to the environmental and personal risk factors for heat illness
- Importance of frequent consumption of water (up to 4 cups per hour)
- The importance of acclimatization
- Different types of heat illness and common signs and symptoms of heat illness
- The importance of immediately reporting to the employer or designee symptoms or signs of heat illness
- Procedures for responding to symptoms of possible heat illness, including how emergency medical services will be provided should they become necessary
- Procedures for contacting emergency medical services, and if necessary, for transporting labor to a point where they can be reached by medical service personnel
- How to provide clear and precise directions to the work site

SUPERVISOR TRAINING

Prior to assignment to supervision of labor working in the heat, training on the following topics will occur:

- The information provided for employee training
- Procedures the supervisor will follow to implement controls as determined by the employer
- Emergency response procedures the supervisor will follow when an employee exhibits symptoms consistent with possible heat illness, including emergency response procedures
- How to prevent employee heat related illnesses

PROCEDURES

The risks of working in hot construction environments can be reduced if labor and management cooperate to help control heat stress.

MANAGEMENT

- Give labor frequent breaks in a cool shaded area away from heat (cooling period no less than 5 minutes). The area should not be so cool that it causes cold shock – around 75° F is ideal
- Increase air movement by using fans where possible. This encourages body cooling through the evaporation of sweat
- Provide unlimited amounts of conveniently located cool (50°-60°F) potable drinking water
- Allow sufficient time for labor to become acclimated. A properly designed and applied acclimatization program decreases the risk of heat-related illnesses. Such a program exposes labor to work in a hot environment for progressively longer periods. NIOSH recommends that for labor who have had previous experience in hot jobs, the regimen should be: 50% exposure on day one; 60% on day two; 80% on day three; 100% on day four
- For new labor in a hot environment, the regimen should be 20% on day one, with a 20% increase in exposure each additional day
- Make allowances for labor who must wear personal protective clothing and equipment that retains heat and restricts the evaporation of sweat
- Schedule hot jobs for the cooler part of the day; schedule routine maintenance and repair work in hot areas for the cooler seasons of the year
- Consider the use of cooling vests containing ice packs or ice water to help rid bodies of excess heat.

EMPLOYEES

- Wear light, loose clothing that permits the evaporation of sweat
- Drink plenty of water or sports beverages to keep hydrated. Do not wait until you are thirsty. Drink approximately one cup of water per hour
- Avoid beverages such as tea, coffee, or beer that make you pass urine more frequently

Where personal PPE must be worn:

- Use the lightest weight clothing and respirators available
- Wear light-colored garments that absorb less heat from the sun
- Use PPE that allows sweat to evaporate
- Avoid eating hot, heavy meals. They tend to increase internal body temperature by redirecting blood flow away from the skin to the digestive system
- Do not take salt tablets unless a physician prescribes them. Natural body salts lost through sweating are easily replaced by a normal diet

EMERGENCY MEDICAL RESPONSE

- Solomon Corporation will have a written plan to provide emergency medical services
- Solomon Corporation will ensure the availability of a suitable number of appropriately trained persons to render first aid. Solomon Corporation will inform all labor of the procedure to follow in case of injury or illness

Emergency Transportation

Before labor are sent to a work site, Solomon Corporation will ensure that arrangements are in place to transport injured or ill labor from the work site to the nearest health care facility. If ambulance service is not readily available to the work site or travel conditions are not normal, Solomon Corporation will provide proper equipment for the prompt transportation of the injured or ill person to a physician or hospital where emergency care is provided. Solomon Corporation will ensure that other transportation is available that:

- Is suitable, considering the distance to be traveled and the types of acute illnesses or injuries that may occur at the work site
- Protects occupants from the weather
- Have systems that allow the occupants to communicate with the health care facility to which the injured or ill worker is being taken
- Can accommodate a stretcher and an accompanying person if required to

EMERGENCY COMMUNICATION

Solomon Corporation will provide an effective communication system for contacting hospitals or other emergency medical facilities, physicians, ambulance, or fire services. In the case of remote job sites, provisions for CB-type, 2-way radio communications will be implemented. The telephone numbers of the following emergency services in the area shall be posted near the job telephone or otherwise made available to the labor where no job site telephone exists:

- A physician and at least one alternate if available
- Hospitals
- Ambulance services
- Fire-protection services

RESPONSE TIME OF EMS

Solomon Corporation regards as important that from the time an accident happens, how many minutes it would take trained medical personnel to reach an injured worker.

Things Solomon Corporation will consider include:

- How long would it take our labor to reach a phone to call 911? Are phones conveniently located in the work area or would they have to go to an office to call?
- How far are the emergency medical services from our work site?
- How would emergency medical services get to our work site? They may only be 100 feet away, but if it is across a limited access road, they may have go 5 miles in one direction to turn around and come back
- How bad is traffic? Are back-ups common in the area at certain times?
- How available are emergency medical services? If there is only one ambulance and one medical team, they may be out on another emergency. It could take a long time for someone to respond to our call
- How large and complex is our work site? How difficult would it be for emergency services to find the place where the injured worker is? We may need to arrange for the emergency service to go to a central location (such as a reception area) and receive directions from there
- Solomon Corporation will contact the local emergency medical service within the proximity of the work site and verify their response to the above inquiries and adjust our plan accordingly
- Our work site supervisor is responsible for inspecting, and maintaining first aid kits

New or temporary labor will be trained in these elements of Solomon Corporation*'s* Emergency Medical Response Plan as part of their safety orientation, before they start work.

RECOGNIZING AND AVOIDING HEAT STRESS

HEAT STRESS IN CONSTRUCTION

Construction operations involving heavy physical work in hot, humid environments can put considerable heat stress on labor. Hot and humid conditions can occur either indoors or outdoors.

Asbestos removal, work with hazardous wastes, and other operations that require labor to wear semi-permeable or impermeable protective clothing can contribute significantly to heat stress. Heat stress causes the body's core temperature to rise.

When the Body's Core Temperature Rises

The human body functions best within a narrow range of internal temperature. This "core" temperature varies from 96.8° F to 100.4° F. A construction worker performing heavy work in a hot environment builds up body heat. To get rid of excess heat and keep internal temperature below 100.4° F, the body uses two cooling mechanisms:

The heart rate increases to move blood – and heat – from heart, lungs, and other vital organs to the skin.

Sweating increases to help cool blood and body. Evaporation of sweat is the most important way the body gets rid of excess heat.

When the body's cooling mechanisms work well, core temperature drops or stabilizes at a safe level (around 98.6° F). But when too much sweat is lost through heavy labor or working under hot, humid conditions, the body does not have enough water left to cool itself. The result is dehydration. Core temperature rises above 100.4° F. A series of heat-related illnesses, or heat stress disorders, can then develop.

Recognizing Heat Stress Disorders

Heat Rash

Heat rash – also known as prickly heat – is the most common problem in hot work environments.

Symptoms include:

- Red blotches and extreme itchiness in areas persistently damp with sweat
- Prickling sensation on the skin where sweating occurs

Treatment

Cool shaded environment, cool shower, thorough drying. In most cases, heat rashes disappear a few days after heat exposure ceases. If the skin is not cleaned frequently enough, the rash may become infected.

Heat Cramps

Under extreme conditions, such as removing asbestos from hot water pipes for several hours in heavy protective gear, the body may lose salt through excessive sweating. Heat cramps can result. These are spasms in larger muscles – usually back, leg, and arm. Cramping creates hard painful lumps within the muscles.

Treatment

Shade, stretch and massage muscles; replace salt by drinking commercially available carbohydrate/electrolyte replacement fluids.

Heat Exhaustion

Heat exhaustion occurs when the body can no longer keep blood flowing to supply vital organs and send blood to the skin to reduce body temperature at the same time. Signs and symptoms of heat exhaustion include:

- Weakness
- Difficulty continuing work
- Headache
- Breathlessness
- Nausea or vomiting
- Feeling faint or actually fainting

Labor fainting from heat exhaustion while operating machinery, vehicles, or equipment can injure themselves and others.

Treatment

Heat exhaustion casualties respond quickly to prompt first aid. If not treated promptly, however, heat exhaustion can lead to heat stroke—a medical emergency.

- Call 911
- Help the casualty to cool off by: Resting in a cool shaded place
- Drinking cool water
- Removing unnecessary clothing
- Loosening clothing

Showering or sponging with cool water takes at least 30 minutes to cool the body down once a worker becomes overheated and suffers heat exhaustion.

Heat Stroke

Heat stroke occurs when the body can no longer cool itself and body temperature rises to critical levels.

WARNING: Heat stroke requires immediate medical attention.

The primary signs and symptoms of heat stroke are:

- Confusion
- Irrational behavior
- Loss of consciousness
- Convulsions
- Lack of sweating
- Hot, dry skin
- Abnormally high body temperature — for example, 104° F

Treatment

For any worker showing signs or symptoms of heat stroke, Call 911.

- Provide immediate, aggressive, general cooling in a shaded area.
- Immerse casualty in tub of cool water or
- Place in cool shower or
- Spray with cool water from a hose
- Wrap casualty in cool, wet sheets and fan rapidly
- Transport casualty to hospital
- Do not give anything by mouth to an unconscious casualty

WARNING: Heat stroke can be fatal even after first aid is administered. Anyone suspected of suffering from heat stroke should not be sent home or left unattended unless that action has been approved by a physician. If in doubt as to what type of heat-related disorder the worker is suffering from, call for medical assistance.

HEAT STRESS RISK ASSESSMENT FACTORS

Factors that should be considered in assessing heat stress include:

- Personal Risk Factors
- Environmental Factors
- Job Factors

PERSONAL RISK FACTORS

It is difficult to predict just who will be affected by heat stress and when, because individual susceptibility varies. There are, however, certain physical conditions that can reduce the body's natural ability to withstand high temperatures:

It is the determination of *Solomon Corporation* to ensure that prior to assigning a task where heat related illness may occur, supervisors will consider the following most common personal factors that contribute to heat related illness.

Weight: Laborers who are overweight are less efficient at losing heat.

Poor physical condition: Being physically fit aids your ability to cope with the increased demands that heat places on your body.

Previous heat illnesses: Labor are more sensitive to heat if they have experienced a previous heat-related illness.

Age: As the body ages, its sweat glands become less efficient. Labor over the age of 40 may therefore have trouble with hot environments. Acclimatization to the heat and physical fitness can offset some age-related problems.

Heart disease or high blood pressure: In order to pump blood to the skin and cool the body, the heart rate increases. This can cause stress on the heart.

Recent illness: Labor with recent illnesses involving diarrhea, vomiting, or fever have an increased risk of dehydration and heat stress because their bodies have lost salt and water.

Alcohol consumption: Alcohol consumption during the previous 24 hours leads to dehydration and increased risk of heat stress.

Medication: Certain drugs may cause heat intolerance by reducing sweating or increasing urination. People who work in a hot environment should consult their physician or pharmacist before taking medications.

Lack of acclimatization: When exposed to heat for a few days, the body will adapt and become more efficient in dealing with raised environmental temperatures. This process is called acclimatization. Acclimatization usually takes 6 to 7 days.

Benefits include:

- Lower pulse rate and more stable blood pressure
- More efficient sweating (causing better evaporative cooling)
- Improved ability to maintain normal body temperatures

Acclimatization may be lost in as little as three days away from work. People returning to work after a holiday or long weekend – and their supervisors – should understand this. employees should be allowed to gradually re-acclimatize to work conditions.

ENVIRONMENTAL FACTORS

Environmental factors such as ambient air temperature, air movement, and relative humidity can all affect an individual's response to heat. The body exchanges heat with its surroundings mainly through radiation and sweat evaporation. The rate of evaporation is influenced by humidity and air movement.

RADIANT HEAT

Radiation is the transfer of heat from hot objects through air to the body. Working around heat sources such as kilns or furnaces will increase heat stress. Additionally, working in direct sunlight can substantially increase heat stress. A worker is far more comfortable working at 80° F under cloudy skies than working at 80° F under sunny skies.

HUMIDITY

Humidity is the amount of moisture in the air. Heat loss by evaporation is hindered by high humidity but helped by low humidity. As humidity rises, sweat tends to evaporate less. As a result, body cooling decreases and body temperature increases.

AIR MOVEMENT

Air movement affects the exchange of heat between the body and the environment. As long as the air temperature is less than the worker's skin temperature, increasing air speed can help labor stay cooler by increasing both the rate of evaporation and the heat exchange between the skin surface and the surrounding air.

JOB FACTORS

CLOTHING AND PERSONAL PROTECTIVE EQUIPMENT (PPE)

Heat stress can be caused or aggravated by wearing PPE such as fire - or chemical -retardant clothing. Coated and non-woven materials used in protective garments block the evaporation of sweat and can lead to substantial heat stress. The more clothing worn or the heavier the clothing, the longer it takes evaporation to cool the skin. Remember that darker clothing absorbs more radiant heat than lighter-colored clothing.

WORKLOAD

The body generates more heat during heavy physical work. For example, construction labor shoveling sand or laying brick in hot weather generate a tremendous amount of heat and are at risk of developing heat stress without proper precautions. Heavy physical work requires careful evaluation even at temperatures as low as 75° F to prevent heat disorders. This is especially true for labor who are not acclimated to the heat.

CONTROLLING HEAT STRESS

Heat stress can be controlled through education, engineering, and work procedures. Controls will:

- Protect Health: Illness can be prevented or treated while symptoms are still mild
- Improve Safety: Labor are less liable to develop a heat-related illness and have an accident. Heat stress often creeps up without warning. Many heat-induced accidents are caused by sudden loss of consciousness
- Increase Productivity: Labor feel more comfortable and are likely to be more productive as a result

ENGINEERING CONTROLS

Engineering controls are the most effective means of preventing heat stress disorders and should be the first method of control. Engineering controls seek to provide a more comfortable workplace by using:

- Reflective shields to reduce radiant heat
- Fans and other means to increase airflow in work areas
- Mechanical devices to reduce the amount of physical work

Given the constantly changing nature of construction sites, engineering controls are not usually feasible. Proper work procedures are therefore required to prevent heat stress disorders.

POLICY

Solomon Corporation has implemented this policy to ensure no employee is exposed to Hydrogen Sulfide (H_2S) at levels in excess of the Permissible Exposure Limit (PEL). This policy is available to all employees request. *Corporate EH&S Manager Mike Dahl* is the assigned supervisor responsible for ensuring the following engineering controls and work practices are enforced:

Corporate EH&S Manager Mike Dahl will provide employees with information and training at the time of their initial assignment to a work area where H_2S is present. Training will address characteristics and health effects of H_2S. If exposures are above the action level, employees will be provided with information and training at least annually thereafter. Necessary employee training will be documented to include: identify of the employee trained; the signature and title of the employee trainer; the date of the training.

Employees will be informed of all regulated areas and will be properly trained in entrance procedures, safety requirements, and practices while in regulated areas.

CHARACTERISTICS OF HYDROGEN SULFIDE

H_2S is a colorless, extremely poisonous gas that has the characteristic odor of rotten eggs. The sense of smell becomes rapidly fatigued and cannot be relied upon to warn of the continuous presence of H_2S. Large amounts of H_2S are obtained in the removal of sulfur from petroleum.

HYDROGEN SULFIDE IS:

- Extremely toxic. 100 ppm is the Immediately Dangerous to Life and Health (IDLH) concentration
- Colorless
- Solubility in water at 68 °F is 0.4% by weight
- Flammable Gas
- Incompatible and reacts with strong oxidizers, strong nitric acid, and metals
- UEL (upper explosive [flammable] limit in air) is 44.0% by volume (at room temperature)
- LEL (lower explosive [flammable] limit in air) is 4.0% by volume (at room temperature)

ADDITIONAL CONSIDERATIONS:

- Contact and exposure occurs through inhalation, skin and/or eye contact
- Target organs are the eyes, respiratory system, and central nervous system
- Health effects and symptoms include irritation of the eyes and respiratory system; apnea, coma, convulsions; conjunctivitis, eye pain, lacrimation (discharge of tears), photophobia (abnormal visual intolerance to light), corneal vesiculation (blisters); dizziness, headache, lassitude (weakness, exhaustion), irritability, insomnia; gastrointestinal disturbance
- Affects the nerve centers of the brain which control breathing

POTENTIAL EMPLOYEE EXPOSURE TO HYDROGEN SULFIDE INCLUDES:

- Drilling Operations
- Recycled Drilling Mud
- Water from sour crude wells
- Blowouts
- Tank Gauging (tanks at producing, pipeline, and refining operations)
- Field Maintenance
- Tank batteries and wells, etc

RESPIRATORY PROTECTION REQUIREMENTS

The Respiratory Protection Program, in compliance with OSHA §1910.134, and respiratory protective equipment is provided at no cost for all employees with potential for exposure to H_2S.

The following National Institute of Occupational Safety and Health (NIOSH) respirator recommendations with their Assigned Protection Factor (APF) will be used under these hazardous conditions:

- H_2S Concentrations up to 100 ppm:
  - Any powered, air-purifying respirator with cartridge(s) providing protection against the compound of concern/(APF = 50)
  - Any air-purifying, full-facepiece respirator (gas mask) with a chin-style, front- or back-mounted canister providing protection against the compound of concern/(APF = 10)
  - Any supplied-air respirator/(APF = 50)
  - Any self-contained breathing apparatus with a full facepiece
- Emergency or planned entry into unknown H_2S concentrations or IDLH conditions:
  - Any self-contained breathing apparatus that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode/(APF = 10,000)
  - Any supplied-air respirator that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode in combination with an auxiliary self-contained positive-pressure breathing apparatus
  - Any air-purifying, full-facepiece respirator (gas mask) with a chin-style, front- or back-mounted canister providing protection against the compound of concern/Any appropriate escape-type, self-contained breathing apparatus/(APF = 50)

SPECIFIC REQUIREMENTS

- In the event of an emergency where H_2S is released at hazardous levels, employees not wearing sufficient Personal Protective Equipment (PPE) for the situation will be immediately evacuated to a safe area until the hazard is contained.
- Adequate ventilation will be ensured in all enclosed work areas. Employees engaged in maintenance of ventilation systems, including filter changes, are required to use proper PPE for the task.
- Regular monitoring of air quality in work areas will be provided to ensure that PEL of H_2S are not being exceeded. Records of all monitoring tests will be kept available at the Company office.
- Employees working at job-sites where there is a potential for exposure to an H_2S hazardous atmospheres will be supplied with personal monitoring equipment which must be carried outside of clothing on the worker at all times when in the work area.
- The supplied monitors will be capable of sensing a minimum of 10 ppm of H_2S in the atmosphere; and will activate audible and visual alarms when the concentration of H_2S in the atmosphere reaches 10 ppm. When monitor alarms sound, employees will vacate the area and will not re-enter without proper respiratory protection.
- In the event that PEL of H_2S are exceeded within any facility where employees are contracted to work, all work will be stopped and employees evacuated until the facility's management can ensure that H_2S levels are brought down to an acceptable level for safe work.
- The management of any facility where Solomon Corporation contracts to work must provide a list of all operations in the facility where H_2S is emitted. Facility management will provide a copy of the facility's contingency plan provisions.
- Special precautions will be taken when employees are working inside tanks or vessels. Employees will adhere to the Solomon Corporation written Confined Space Program per §1910.146 and employees will be trained under §1910.146(g).
- The medical surveillance program for employees who potentially may be exposed to H_2S at or above the action level or PEL will be provided under the supervision of a licensed physician at no cost to the employee.
- Employees must wear proper Personal Protective Equipment (PPE) at all times while in work areas where H_2S is present. This PPE will include proper eye/face protection in accordance with §1910.133 where appropriate.
- All required signs and labels will be posted in areas of potential exposure to H_2S.
- All containers or materials containing H_2S will be appropriately labeled to indicate the contents and the hazards of the contents.
- SDS for H_2S and all hazardous materials at Solomon Corporation are available to employees at the Company office upon request.

HAZARDS OF HYDROGEN SULFIDE

HAZARDS OF HYDROGEN SULFIDE (H_2S)

Hydrogen Sulfide (H_2S) presents a potential hazard to workers at the work site. It usually occurs as an unwanted by-product and can result in worker exposure in many different industries or occupations. To ensure protection against exposure to H_2S, both workers and employers must be aware of its properties, how it affects the body, and what to do in emergency situations. Solomon Corporation shall ensure that all personnel who will be working at the job site will be properly trained in H_2S awareness and contingency procedures.

H_2S CHARACTERISTICS

Hydrogen sulfide is a powerful and deadly gas which is colorless and smells like rotten eggs at low concentrations and has a sweet smell at high concentrations. But workers should not rely on the smell as a warning as the gas quickly paralyzes the olfactory nerves which allow you to smell. The result could be instant death. Long exposure to low concentrations will also deaden the sense of smell.

H_2S is explosive - it will ignite and explode when subjected to a spark or ordinary flame - in any concentration from 4% to 44% of the air. It is also soluble in water and oil, so it may flow for a considerable distance from its origin before escaping above ground or in an entirely unexpected place. Because the vapor (gas) is heavier than air, it may travel for a long way until ignited and then flash back towards the source. One of the products of burning H_2S is Sulfur Dioxide, also a toxic gas.

If the gas is burned, toxic products such as sulfur dioxide will be formed. Hydrogen sulfide is incompatible with oxidizing agents, such as nitric acid and chlorine trifluoride, and may react violently or ignite spontaneously.

SOURCES OF H_2S

H_2S is found widely in industry and few workers are warned of its dangers, or their exposure. It is formed by the decomposition of organic materials, so it is found in natural gas and oil, recycled drilling mud, water from sour crude wells, in mines, wells, fertilizers, sewers, and cesspools. It is given off as a by-product in the manufacture of rayon, synthetic rubber, dyes, and the tanning of leather.

Hydrogen sulfide is found in large amounts in natural gas and petroleum. Any worker involved in extracting gas and petroleum from the ground, or in storing, transporting, or processing gas is at risk from exposure to H_2S. Hydrogen sulfide exists in solution in crude oil, and workers are exposed when the gas begins to "pass off" as it reaches the surface or comes into contact with air. This can occur at any point, including all stages of the refining operation, and it is accelerated by heat or hot weather.

Fundamentally, employers and employees must be alert to the fact that working with a "closed system" does not always ensure safety. Operations involving the opening of valves or pumps on otherwise closed systems or working on such equipment that is not isolated or locked out are particular sources of danger. When a normally closed system is opened, the potential exists for releasing hazardous chemicals into the workers' breathing zones in unknown concentrations.

HEALTH EFFECTS ON THE BODY

Hydrogen Sulfide is extremely toxic. When you breathe in H_2S, it goes directly through your lungs and into your bloodstream. To protect itself, your body "oxidizes" (breaks down) the H_2S as rapidly as possible into a harmless compound.

If you breathe in so much H_2S that your body cannot oxidize all of it, the H_2S builds up in the blood and you become poisoned. It may cause death instantaneously in high airborne concentrations. The nervous centers in your brain that control breathing are paralyzed. Your lungs stop working and you are asphyxiated - just as though someone had come up and put their hands around your neck and strangled you.

A single breath of hydrogen sulfide at about 1000 ppm may paralyze the respiratory system and result in coma and death. A worker can be overcome by H_2S and lose consciousness in a few seconds; luckily if he is rescued in time and is given artificial respiration within a few minutes, the worker may recover. Either artificial mouth-to-mouth or an oxygen supply system of resuscitation will work if it is done in time, because, with an adequate source of oxygen and no further H_2S intake, the body will quickly break down the H_2S still in the blood.

Low levels may be extremely irritating to the lungs, nose, throat, and eyes. Hydrogen Sulfide can be detected by smell at levels as low as 0.13 parts H_2S per million parts air (ppm). Odor cannot be used as a warning because the gas can deaden the sense of smell within 2 to 15 minutes in exposures of approximately 100 ppm. Convulsions may also occur. Prolonged exposure at about 250 ppm H_2S may cause the lung tissue to swell and fill up with water (pulmonary edema). This effect may occur after the exposed worker recovers from the irritant effects of the gas. Exposures of 20 to 50 ppm hydrogen sulfide for one hour may cause inflammation of the cornea and the delicate lining of the eye and eyelid (a condition called keratoconjunctivitis). Exposures for long periods at 50 ppm may cause severe irritation of the nose, throat and lungs. Workers exposed to lower concentrations of H_2S may develop headaches, eye disorders, and chronic bronchitis.

CHRONIC EFFECTS

Hydrogen Sulfide can also cause a wide range of sub-acute and chronic effects. At very low concentrations of 10-100 ppm.) headache, dizziness, nausea, and vomiting may develop, together with irritation of the eyes and respiratory tract (the lungs and trachea and bronchi, or air pipes from the nose and mouth to the lungs). The eyes become red, sore, inflamed, and sensitive to light. Respiratory system effects include cough, pain in the nose and throat, and pain on breathing.

If exposure at low levels continues, the worker may develop a state of chronic poisoning. In addition to eye and respiratory tract irritation, there will be a slowed pulse rate, fatigue, insomnia, digestive disturbances, and cold sweats. More dangerous, if exposure at the level of 100 ppm (which results in eye and respiratory tract irritation and drowsiness after 15 minutes) lasts for several hours, it may result in death within the next 48 hours. Symptoms of chronic exposures at low levels are conjunctivitis (eye infections), headache, attacks of dizziness, diarrhea, and loss of weight.

Chronic H_2S intoxication is marked by headaches, eye disorders, chronic bronchitis, and a grey-green line on the gums. Reports of nervous system disorders including paralysis, meningitis, and neurological problems have been reported, but not confirmed.

A study of workers and community residents of a California refinery engaged in extracting sulfur from crude oil, which is rich in H_2S, complained of headaches, nausea, vomiting, depression, personality changes, nosebleeds, and breathing difficulties. When compared to a non-exposed group of people, the exposed people showed abnormalities of color discrimination, eye-hand coordination, balance, and mood disturbances.

Hydrogen Sulfide can penetrate the skin and cause toxicosis in people exposed to large concentrations over long periods. The speed of onset of acute H_2S poisoning and the potency of H_2S are almost the same as for cyanide gas. In rats, exposure to H_2S has caused teratogenic (biological monstrosities and malformations) effects.

SYMPTOMS OF H_2S EXPOSURE

H_2S is classified as a chemical asphyxiant, similar to carbon monoxide and cyanide gases. It inhibits cellular respiration and uptake of oxygen, causing biochemical suffocation. Exposure levels to H_2S and symptoms of that exposure are divided into different toxicity levels, shown in the chart below.

10 ppm	Beginning eye irritation
50-100 ppm	Slight conjunctivitis and respiratory tract irritation after 1 hour exposure
100 ppm	Coughing, eye irritation, loss of sense of smell after 2-15 minutes. Altered respiration, pain in the eyes and drowsiness after 15-30 minutes followed by throat irritation after 1 hour. Several hours exposure results in gradual increase in severity of these symptoms and death may occur within the next 48 hours.
200-300 ppm	Marked conjunctivitis and respiratory tract irritation after 1 hour of exposure
500-700 ppm	Loss of consciousness and possibly death in 30 minutes to 1 hour.
700-1000 ppm	Rapid unconsciousness, cessation of respiration, and death.
1000-2000 ppm	Unconsciousness at once, with early cessation of respiration and death in a few minutes. Death may occur even if individual is removed to fresh air at once.

USE AND OPERATION OF H_2S MONITORING SYSTEMS & DETECTION METHODS USED ON SITE

Employees working at jobsites where there is a potential for exposure to hazardous atmospheres, will be supplied with personal monitoring equipment that must be carried outside of clothing on the worker at all times when in the work area. The monitors supplied will be capable of sensing a minimum of 10 ppm of H_2S in the atmosphere; and will activate audible and visual alarms when the concentration of H_2S in the atmosphere reaches 20 ppm. 20 ppm is the acceptable ceiling concentration for H_2S exposure, and 50 ppm is the acceptable maximum peak above the acceptable ceiling concentration for an 8-hour shift with a one-time 10-minute exposure only if no other measured exposure exists.

Alternatively, stationary monitors may be installed. Personal or stationary monitors must be capable of sounding an audible alarm or warning. Corporate EH&S Manager Mike Dahl will administer the monitor maintenance program for Solomon Corporation. Monitors will be calibrated and maintained per manufacturer’s instructions.

PROPER USE AND MAINTENANCE OF PPE

See Solomon Corporation Policy on respiratory protection. Employees working in areas where the possibility of exposure to toxic gases exists will be provided NIOSH approved full face SCBA respiratory equipment, and trained in their use and maintenance according to the company Respiratory Protection Program which is administered by Corporate EH&S Manager Mike Dahl. Demonstrated proficiency in using PPE is required by the program.

LOCATIONS AND USE OF SAFETY EQUIPMENT

Personal hazardous atmosphere detection monitors and respiratory protective equipment will be immediately available to each employee at all times in the work area. Safety equipment will be kept immediately available to all employees on the job-site.

All employees of Solomon Corporation must be notified of the location of safety equipment on each jobsite prior to commencement of work. Only personnel trained in the proper use of any required safety equipment will be allowed on the job-site.

RECOGNITION AND RESPONSE TO H_2S WARNINGS AT THE WORKPLACE

Solomon Corporation employees at will be required to respond immediately to audio or visual warnings issued either by personal monitoring equipment or established workplace general warning signals. Workplace site-specific contingency plans of the plant owner will be reviewed with personnel and provisions of the plan followed. When a warning signal is sounded, employees must immediately put on SCBA respiratory protection and initiate evacuation procedures. Evacuation plans must be established for each work-site prior to commencement of work. Corporate EH&S Manager Mike Dahl, or the foreman in charge of the job-site, will be responsible for supervision of evacuation procedures, checking for proper use of respiratory protection, ensuring all employees are cleared of the hazard area, notification of the facility management, and assembly and head-count of evacuated personnel at designated safe areas.

PROPER RESCUE AND FIRST AID TO BE USED IN A H_2S EXPOSURE

First aid kit and oxygen will be kept in the supervisor’s work vehicle and available to all employees. A litter for transport of incapacitated workers will be provided by Solomon Corporation, and kept on-site, if one is not available from the facility.

In the event an employee is exposed to H_2S, the employee will immediately be evacuated to a safe briefing area, emergency medical services will be notified, and oxygen will be administered, along with cardiopulmonary resuscitation (CPR) if required. Oxygen will be administered regardless of the condition of the victim to ensure a reduction of the absorption concentration of H_2S. If an employee is rendered unconscious due to H_2S exposure, assigned personnel wearing proper SCBA must respond to perform rescue operations of the victim.

LOCATIONS OF SAFE BRIEFING AREAS

Safe briefing areas will be designated outside the work zone for each work location where the possibility of hazardous atmospheres exist. At least two briefing areas will be designated for each work-site. Workers will be notified of these areas prior to the commencement of work. Corporate EH&S Manager Mike Dahl will be responsible for evaluation and designation of safe briefing areas for Solomon Corporation.

WIND DIRECTION AWARENESS AND ROUTES OF EGRESS

Wind direction will be monitored by Corporate EH&S Manager Mike Dahl at the beginning of each shift to determine safe egress routes for employees in the event of an evacuation. Wind direction will be regularly checked and noted throughout the work shift for wind shift which will necessarily facilitate a change of egress routes for evacuation. Evacuation routes will be determined for each work area before commencement of work, and routes will be clearly marked and posted in conspicuous areas in the workplace. In the event of an emergency evacuation, Corporate EH&S Manager Mike Dahl will be responsible for determination and notification of the proper egress route to be used for employee safety.

CONFINED SPACE AND ENCLOSED FACILITY ENTRY PROCEDURES

Whenever employees enter a confined space, such as a tank, strict work practices will be followed, including the company permit entry system.

Corporate EH&S Manager Mike Dahl will ensure that the Solomon Corporation Confined Space Entry program is adhered to, that the air is continually monitored for the presence of H_2S, and that a worker be stationed as a monitor outside of a confined space. Supplied-air respirators, lifelines, and rescue equipment must be immediately available.

See Solomon Corporation Policy on Permit Required Confined Spaces. These procedures will be enforced in all confined work situations.

POLICY

Solomon Corporation has implemented this policy to inform workers of the written In Plant Rail Safety Procedures in the workplace. This ensures the safety and health of the employees on the job site.

REFERENCES

- OSHA 5A1 – General Duty Clause

RESPONSIBILITIES

In Plant Rail Safety is a responsibility shared between the Company and its employees.

EMPLOYER RESPONSIBILITIES

- Ensuring that In plant rail lines and equipment at the facility occur on regular basis
- Training personnel in how to operate and/or ride the railroad equipment
- Responding quickly to eliminate rail equipment and line hazards
- Ensuring all equipment is kept in good repair
- Ensuring employees follow safe job procedures
- Reviewing job hazard analysis whenever there is a significant change to any element of the job or there has been an injury or illness

SAFETY COMMITTEE RESPONSIBILITIES

- Assist in safe work procedure development as necessary
- Assist in training employees to recognize and control workplace hazards
- Monitor the workplace for hazards
- Encourage employees to report hazards
- Implement appropriate controls
- Ensure corrective action is taken promptly

EMPLOYEE RESPONSIBILITIES

- Follow safe job procedures
- Report hazards to a supervisor immediately
- Only trained employees will be authorized by department management to operate and/or ride the railroad equipment
- Wear the proper Personal Protective Equipment (PPE) identified as necessary for their work. This could include hard hats, gloves, safety glasses, and high visibility clothing

TRAINING

Solomon Corporation will provide, and document, appropriate training and assessments on safety procedures and potential hazards regarding in plant rails at the worksite to ensure employees demonstrate the knowledge and skills to safely perform their work assignments.

Training will occur prior to the job assignment and will be done annually thereafter. Testing and observation assessments will be used to determine whether the employees have the knowledge and have demonstrated the skills to perform their work assignments safely.

Retraining and testing will be required when an unsafe/unsatisfactory performance has occurred for the job assignment.

SAFE PRACTICES

INSPECTIONS

Operators will inspect their assigned locomotive/self-propelled rail equipment daily, reporting immediately any defect or malfunctions of any of the components that relates to the safe operation of the equipment. The freight cars within the plant will be observed by the train crew operators with either an actual or roll by inspection throughout the course of their daily handling.

RAIL CROSSING

In all cases employees/pedestrians will only cross at existing designated pedestrian rail crossing areas where provided. In addition, vehicle crossings are not intended as pedestrian crossings unless they are identified and/or located as such, and no other pedestrian crossings exist in the area.

When a designated rail crossing is not available for crossing Railroad Tracks, the general safety procedures will be followed.

General safety procedures include:

- Do not cross within ten (10) feet of the end of a parked rail car
- Do not cross between uncoupled cars
- Do not step on the rails, as they may be slippery
- Always stop, look and listen before proceeding across the tracks

Employees will never attempt to crawl under the rail equipment, climb over or attempt to cross in front of moving equipment.

Never allow the body to be positioned in a potential pinch point, as rail equipment can move in any direction at any time.

RAIL CAR PROCEDURES:

The employees mounting and dismounting railroad equipment will use the three (3) points of contact procedure facing the car or locomotive.

- Employees will ensure a firm grip on the iron grab bars and that one foot is placed firmly on the step
- Check the ground area for tripping hazards
- Face the steps with a controlled balanced movement
- When the railroad equipment is moving the employees are strictly prohibited from moving from car to car
- Only authorized personnel will be permitted to couple and uncouple the rail cars
- Before performing work within six (6) feet of any railroad track, permission will be obtained from the railroad Supervisor/Designated person to take the track out of service
- No employees will be permitted to ride on either the top of or side of the rail cars

WALKWAYS AND CLEARANCES:

Solomon Corporation will post warning signs near tracks with minimal side and overhead clearances and their potential hazards to alert employees in the plant.

Walkways will be built and maintained where employees work on the ground. All walkways will be kept clear of obstructions that create potential hazards for the employees.

COMMUNICATION

The crew members involved in moving the rail equipment will agree to the method of communications and have a clear understanding of the method being used. Rail equipment movements can be controlled by hand signals or radio communications. The method to be used will be agreed upon before there is any rail equipment movement.

Note: Using a combination of radio and hand signals is strictly prohibited.

Distress calls by crew members will be preceded by the word “EMERGENCY” repeated three (3) times. Emergency calls will be issued covering only reports of:

- Derailment
- Fires
- Obstructions to the tracks that would cause: injury to employees; damage to property; serious delays

ATTACHMENTS

- Record for Initial and Annual Refresher Training

RECORD FOR INITIAL AND ANNUAL REFRESHER TRAINING

Trainer:
Date:
Content of Training:

Attendees	
Print Name	Signature

POLICY

Solomon Corporation has adopted this policy for Injury/Illness Recordkeeping in accordance with OSHA regulations

REFERENCES

- §1904 – Injury / Illness Recordkeeping

RECORDS

It is the policy of Solomon Corporation to keep records of fatalities, injuries, and illnesses that:

- Are work related,
- Is a new case, and
- Meets one or more of the general recording criteria.

It is the policy of Solomon Corporation to enter each recordable injury or illness on an OSHA 300 Log and 301 incident report, or other equivalent form, within seven (7) calendar days of receiving information that a recordable injury or illness has occurred.

At the end of each calendar year Corporate EH&S Manager Mike Dahl must examine the OSHA 300 Log and certify that, based on the knowledge of the process by which the information was recorded, that the annual summary is correct and complete. A designated company official must sign the OSHA 300A Summary and make it available for posting. (See §1904.32 (b)(3))

ANNUAL SUMMARY POSTING

Solomon Corporation will post a copy of the annual summary in each facility. The summary must be posted in a conspicuous place or places where notices to employees are customarily posted. Solomon Corporation will ensure that the posted annual summary is not altered, defaced, or covered by other material. The annual summary will be posted no later than February 1st of the year following the year covered by the records. The posting must be kept in place until April 30th.

Solomon Corporation will save the OSHA 300 Log, the privacy case list (if one exists), the annual summary, and the OSHA 301 Incident Report Forms for five (5) years following the end of the calendar year that these records cover.

The decision tree for recording work-related injuries and illnesses on the next page shows the steps involved in how to decide whether a particular injury or illness is recordable.

GENERAL RECORDING CRITERIA

BASIC REQUIREMENT

You must consider an injury or illness to meet the general recording criteria, and therefore to be recordable, if it results in any of the following: death, days away from work, restricted work or transfer to another job, medical treatment beyond first aid, or loss of consciousness. You must also consider a case to meet the general recording criteria if it involves a significant injury or illness diagnosed by a physician or other licensed health care professional, even if it does not result in death, days away from work, restricted work or job transfer, medical treatment beyond first aid, or loss of consciousness.

IMPLEMENTATION

How do I decide if a case meets one or more of the general recording criteria?

A work-related injury or illness must be recorded if it results in one or more of the following:

- Death. See §1904.7 (b)(2)
- Days away from work. See §1904.7 (b)(3)
- Restricted work or transfer to another job. See §1904.7 (b)(4)
- Medical treatment beyond first aid. See §1904.7 (b)(5)
- Loss of consciousness. See §1904.7 (b)(6)
- A significant injury or illness diagnosed by a physician or other licensed health care professional. See §1904.7 (b)(7)

How do I record a work-related injury or illness that results in the employee's death?

You must record an injury or illness that results in death by entering a check mark on the OSHA 300 Log in the space for cases resulting in death. You must also report any work-related fatality to OSHA within eight (8) hours, as required by §1904.39.

How do I record a work-related injury or illness that results in days away from work?

When an injury or illness involves one or more days away from work, you must record the injury or illness on the OSHA 300 Log with a check mark in the space for cases involving days away and an entry of the number of calendar days away from work in the number of days column. If the employee is out for an extended period of time, you must enter an estimate of the days that the employee will be away, and update the day count when the actual number of days is known.

- *Do I count the day on which the injury occurred or the illness began?* No, you begin counting days away on the day after the injury occurred or the illness began
- How do I record an injury or illness when a physician or other licensed health care professional recommends that the worker stay at home but the employee comes to work anyway?

You must record these injuries and illnesses on the OSHA 300 Log using the check box for cases with days away from work and enter the number of calendar days away recommended by the physician or other licensed health care professional. If a physician or other licensed health care professional recommends days away, you should encourage your employee to follow that recommendation. However, the days away must be recorded whether the injured or ill employee follows the physician or licensed health care professional's recommendation or not. If you receive recommendations from two or more physicians or other licensed health care professionals, you may make a decision as to which recommendation is the most authoritative, and record the case based upon that recommendation.

How do I record a work-related injury or illness that results in restricted work or job transfer?

When an injury or illness involves restricted work or job transfer but does not involve death or days away from work, you must record the injury or illness on the OSHA 300 Log by placing a check mark in the space for job transfer or restriction and an entry of the number of restricted or transferred days in the restricted workdays column.

- How do I decide if the injury or illness resulted in restricted work? Restricted work occurs when, as the result of a work-related injury or illness:
  - You keep the employee from performing one or more of the routine functions of his or her job, or from working the full workday that he or she would otherwise have been scheduled to work; or
  - A physician or other licensed health care professional recommends that the employee not perform one or more of the routine functions of his or her job, or not work the full workday that he or she would otherwise have been scheduled to work.
- What is meant by "routine functions"? For recordkeeping purposes, an employee's routine functions are those work activities the employee regularly performs at least once per week.
- Do I have to record restricted work or job transfer if it applies only to the day on which the injury occurred or the illness began? No, you do not have to record restricted work or job transfers if you, or the physician or other licensed health care professional, impose the restriction or transfer only for the day on which the injury occurred or the illness began.

If you, a physician, or other licensed health care professional recommends a work restriction, is the injury or illness automatically recordable as a "restricted work" case?

No, a recommended work restriction is recordable only if it affects one or more of the employee's routine job functions. To determine whether this is the case, you must evaluate the restriction in light of the routine functions of the injured or ill employee's job. If the restriction from you or the physician or other licensed health care professional keeps the employee from performing one or more of his or her routine job functions, or from working the full workday the injured or ill employee would otherwise have worked, the employee's work has been restricted and you must record the case.

How do I record a case where the worker works only for a partial work shift because of a work-related injury or illness?

A partial day of work is recorded as a day of job transfer or restriction for recordkeeping purposes, except for the day on which the injury occurred or the illness began.

If the injured or ill worker produces fewer goods or services than he or she would have produced prior to the injury or illness but otherwise performs all of the routine functions of his or her work, is the case considered a restricted work case?

No, the case is considered restricted work only if the worker does not perform all of the routine functions of his or her job or does not work the full shift that he or she would otherwise have worked.

How do I handle vague restrictions from a physician or other licensed health care professional, such as that the employee engage only in "light duty" or "take it easy for a week?”

If you are not clear about the physician or other licensed health care professional's recommendation, you may ask that person whether the employee can do all of his or her routine job functions and work all of his or her normally assigned work shift. If the answer to both of these questions is "Yes," then the case does not involve a work restriction and does not have to be recorded as such. If the answer to one or both of these questions is "No," the case involves restricted work and must be recorded as a restricted work case. If you are unable to obtain this additional information from the physician or other licensed health care professional who recommended the restriction, record the injury or illness as a case involving restricted work.

What do I do if a physician or other licensed health care professional recommends a job restriction meeting OSHA's definition, but the employee does all of his or her routine job functions anyway?

You must record the injury or illness on the OSHA 300 Log as a restricted work case. If a physician or other licensed health care professional recommends a job restriction, you should ensure that the employee complies with that restriction. If you receive recommendations from two or more physicians or other licensed health care professionals, you may make a decision as to which recommendation is the most authoritative, and record the case based upon that recommendation.

How do I decide if an injury or illness involved a transfer to another job?

If you assign an injured or ill employee to a job other than his or her regular job for part of the day, the case involves transfer to another job.

Note: This does not include the day on which the injury or illness occurred.

Are transfers to another job recorded in the same way as restricted work cases?

Yes, both job transfer and restricted work cases are recorded in the same box on the OSHA 300 Log. For example, if you assign, or a physician or other licensed health care professional recommends that you assign, an injured or ill worker to his or her routine job duties for part of the day and to another job for the rest of the day, the injury or illness involves a job transfer. You must record an injury or illness that involves a job transfer by placing a check in the box for job transfer.

How do I count days of job transfer or restriction?

You count days of job transfer or restriction in the same way you count days away from work. The only difference is that, if you permanently assign the injured or ill employee to a job that has been modified or permanently changed in a manner that eliminates the routine functions the employee was restricted from performing, you may stop the day count when the modification or change is made permanent. You must count at least one day of restricted work or job transfer for such cases.

How do I record an injury or illness that involves medical treatment beyond first aid?

If a work-related injury or illness results in medical treatment beyond first aid, you must record it on the OSHA 300 Log. If the injury or illness did not involve death, one or more days away from work, one or more days of restricted work, or one or more days of job transfer, you enter a check mark in the box for cases where the employee received medical treatment but remained at work and was not transferred or restricted.

What is the definition of medical treatment?

"Medical treatment" means the management and care of a patient to combat disease or disorder. For the purposes of Part 1904, medical treatment does not include:

Visits to a physician or other licensed health care professional solely for observation or counseling;

- The conduct of diagnostic procedures, such as x-rays and blood tests, including the administration of prescription medications used solely for diagnostic purposes (e.g., eye drops to dilate pupils); or
- "First aid" as defined below.

What is "first aid"?

For the purposes of Part 1904, "first aid" means the following:

- Using a non-prescription medication at nonprescription strength (for medications available in both prescription and non-prescription form, a recommendation by a physician or other licensed health care professional to use a non-prescription medication at prescription strength is considered medical treatment for recordkeeping purposes)
- Administering tetanus immunizations (other immunizations, such as Hepatitis B vaccine or rabies vaccine, are considered medical treatment)
- Cleaning, flushing or soaking wounds on the surface of the skin
- Using wound coverings such as bandages, Band-Aids, gauze pads, etc.; or using butterfly bandages or Steri-Strips (other wound closing devices such as sutures, staples, etc., are considered medical treatment)
- Using hot or cold therapy
- Using any non-rigid means of support, such as elastic bandages, wraps, non-rigid back belts, etc. (devices with rigid stays or other systems designed to immobilize parts of the body are considered medical treatment for recordkeeping purposes)
- Using temporary immobilization devices while transporting an accident victim (e.g., splints, slings, neck collars, back boards, etc.)
- Drilling of a fingernail or toenail to relieve pressure, or draining fluid from a blister
- Using eye patches
- Removing foreign bodies from the eye using only irrigation or a cotton swab
- Removing splinters or foreign material from areas other than the eye by irrigation, tweezers, cotton swabs or other simple means
- Using finger guards
- Using massages (physical therapy or chiropractic treatment are considered medical treatment for recordkeeping purposes);
- Drinking fluids for relief of heat stress

Are any other procedures included in first aid?

No, this is a complete list of all treatments considered first aid for Part 1904 purposes.

Does the professional status of the person providing the treatment have any effect on what is considered first aid or medical treatment?

No, OSHA considers the treatments listed above to be first aid regardless of the professional status of the person providing the treatment. Even when these treatments are provided by a physician or other licensed health care professional, they are considered first aid for the purposes of Part 1904. Similarly, OSHA considers treatment beyond first aid to be medical treatment even when it is provided by someone other than a physician or other licensed health care professional.

What if a physician or other licensed health care professional recommends medical treatment but the employee does not follow the recommendation?

If a physician or other licensed health care professional recommends medical treatment, you should encourage the injured or ill employee to follow that recommendation. However, you must record the case even if the injured or ill employee does not follow the physician or other licensed health care professional's recommendation.

Is every work-related injury or illness case involving a loss of consciousness recordable?

Yes, you must record a work-related injury or illness if the worker becomes unconscious, regardless of the length of time the employee remains unconscious.

What is a "significant" diagnosed injury or illness that is recordable under the general criteria even if it does not result in death, days away from work, restricted work or job transfer, medical treatment beyond first aid, or loss of consciousness?

Work-related cases involving cancer, chronic irreversible disease, a fractured or cracked bone, or a punctured eardrum must always be recorded under the general criteria at the time of diagnosis by a physician or other licensed health care professional.

Note to §1904.7: OSHA believes that most significant injuries and illnesses will result in one of the criteria listed in §1904.7 (a): death, days away from work, restricted work or job transfer, medical treatment beyond first aid, or loss of consciousness. However, there are some significant injuries, such as a punctured eardrum or a fractured toe or rib, for which neither medical treatment nor work restrictions may be recommended. In addition, there are some significant progressive diseases, such as byssinosis, silicosis, and some types of cancer, for which medical treatment or work restrictions may not be recommended at the time of diagnosis but are likely to be recommended as the disease progresses. OSHA believes that cancer, chronic irreversible diseases, fractured or cracked bones, and punctured eardrums are generally considered significant injuries and illnesses, and must be recorded at the initial diagnosis even if medical treatment or work restrictions are not recommended, or are postponed, in a particular case.

POLICY

Solomon Corporation has implemented this policy to ensure no employee is exposed to hazards caused by improper or unsafe use of ladders and/or stairways. Solomon Corporation will provide a training program for each employee using ladders and stairways. The program will enable each employee to recognize hazards related to ladders and stairways and will train each employee in the procedures to be followed to minimize these hazards.

REFERENCES

- §1926.1050 – Ladders and Stairways

RESPONSIBILITIES

Ladder and stairway safety is a responsibility shared between the Company and its employees.

EMPLOYER RESPONSIBILITIES

- Providing and installing all stairway and ladder fall protection systems required by this subpart and will comply with all other pertinent requirements of this subpart before employees begin the work that necessitates the installation and use of stairways, ladders, and their respective fall protection systems
- Ensuring that visual safety inspections of ladders and stairways occur on regular basis
- Training personnel
- Responding quickly to eliminate workplace hazards
- Ensuring all equipment is kept in good repair
- Ensuring employees follow safe job procedures
- Reviewing job hazard analysis whenever there is a significant change to any element of the job or there has been an injury or illness

SAFETY COMMITTEE RESPONSIBILITIES

- Assist in jobsite ladders and stairways as necessary
- Assist in training employees to recognize and control workplace hazards
- Monitor the workplace for hazards
- Encourage employees to report hazards
- Implement appropriate controls
- Ensure corrective action is taken promptly

EMPLOYEE RESPONSIBILITIES

- Assist in jobsite ladder and stairway inspections
- Follow safe job procedures
- Report hazards to a supervisor immediately

TRAINING

Corporate EH&S Manager Mike Dahl will ensure each employee has been trained by a competent person in the following areas, as applicable: The nature of fall hazards in the work area; The correct procedures for erecting, maintaining, and disassembling the fall protection systems to be used; the proper construction, use, placement, and care in handling of all stairways and ladders; the maximum intended load-carrying capacities of ladder; the standards contained in §1926.1050 – Ladders and Stairways. Retraining will be provided for each employee as necessary so that the employee maintains the understanding and knowledge acquired through previous training required for OSHA compliance.

SAFE PRACTICES

A stairway or ladder will be at all access points with a break in elevation of 19 inches or more without a ramp, runway, sloped embankment, or personnel hoist.

- Employees will not use any spiral stairways that will not be a permanent part of the structure on which construction work is being performed
- A double-cleated ladder or two or more separate ladders will be provided when ladders are the only mean of access or exit from a working area for 25 or more employees, or when a ladder is to serve simultaneous two-way traffic
- When a building or structure has only one point of access between levels, that point of access will be kept clear to permit free passage of employees. When work must be performed or equipment must be used such that free passage at that point of access is restricted, a second point of access will be provided and used
- When a building or structure has two or more points of access between levels, at least one point of access will be kept clear to permit free passage of employees

LADDERS

Corporate EH&S Manager Mike Dahl will ensure the following requirements are adhered to concerning the use of all ladders:

- When portable ladders are used for access to an upper landing surface, the ladder side will extend at least 3 feet above the upper landing surface to which the ladder is used to gain access; or, when such an extension is not possible because of the ladder's length, then the ladder will be secured at its top to a rigid support that will not deflect, and a grasping device, such as a grabrail, will be provided to assist employees in mounting and dismounting the ladder. In no case will the extension be such that ladder deflection under a load would, by itself, cause the ladder to slip off its support
- Ladders will be maintained free of oil, grease, and other slipping hazards
- Ladder rungs, cleats, and steps will be parallel, level, and uniformly spaced when the ladder is in position for use
- Ladders will not be loaded beyond the maximum intended load for which they were built or beyond their manufacturer's rated capacity. Ladders need to have the load capacity needed for the task

- Ladders will be used only for the purpose for which they were designed
- Non-self-supporting ladders will be used at a 75 degree angle
- Wood job-made ladders with spliced side rails will be used at an angle such that the horizontal distance is one-eighth the working length of the ladder
- Fixed ladders will be used at a pitch no greater than 90 degrees from the horizontal
- Ladders will be used only on stable and level surfaces unless secured
- Ladders will not be used on slippery surfaces without slip-resistant feet unless secured. Slip-resistant feet will not be used as a substitute for care in placing, lashing, or holding a ladder that is used upon slippery surfaces, including flat metal or concrete surfaces that are constructed so they cannot be prevented from becoming slippery
- Ladders placed where they can be displaced by workplace activities or traffic, such as in passageways, doorways, or driveways, will be secured to prevent accidental displacement, or a barricade will be used to keep the activities or traffic away from the ladder
- The area around the top and bottom of ladders will be kept clear
- The top of a non-self-supporting ladder will be placed with the two rails supported equally unless it is equipped with a single support attachment
- Ladders will not be moved, shifted, or extended while occupied
- Ladders will have nonconductive side-rails if they are used where the employee or the ladder could contact exposed energized electrical equipment
- The top or top step of a stepladder will not be used as a step
- Cross-bracing on the rear section of stepladders will not be used for climbing unless the ladders are designed and provided with steps for climbing on both front and rear sections
- Ladders will be inspected by a competent person for visible defects on a periodic basis and after any occurrence that could affect their safe use
- Portable ladders with structural defects will either be immediately marked in a manner that readily identifies them as defective, or be tagged with "DO NOT USE" or similar language, and will be 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, will be withdrawn from service until repaired. The defective ladder will be withdrawn from service in the following manner: immediately tagged with "Do Not Use" or similar language; marked in a method that readily identifies it as defective; blocked from further use, such as with a plywood attachment that spans several rungs
- Before damaged or defective ladder may be returned to service, repairs will be made that restore the ladder to its original design specifications
- Single-rail ladders will not be used
- When ascending or descending a ladder, the user will face the ladder
- Each employee will use at least one hand to grasp the ladder when progressing up and/or down the ladder
- An employee will not carry any object or load that could cause the employee to lose balance and fall
- Extension ladders will be placed one unit away from the vertical surface for every four units high

STAIRWAYS

Corporate EH&S Manager Mike Dahl will ensure the following requirements are applied to all stairways:

- Stairways that will not be a permanent part of the structure on which construction work is being performed will have landings of not less than 30 inches in the direction of travel and extend at least 22 inches in width at every 12 feet or less of vertical rise
- Stairs will be installed between 30 deg. and 50 deg. from horizontal
- Riser height and tread depth will be uniform within each flight of stairs, including any foundation structure used as one or more treads of the stairs. Variations in riser height or tread depth will not be over ¼-inch in any stairway system
- Where doors or gates open directly on a stairway, a platform will be provided, and the swing of the door will not reduce the effective width of the platform to less than 20 inches
- Metal pan landings and metal pan treads, when used, will be secured in place before filling with concrete or other material
- All parts of stairways will be free of hazardous projections, such as protruding nails
- Slippery conditions on stairways will be eliminated before the stairways are used to reach other levels
- Except during stairway construction, foot traffic is prohibited on stairways with pan stairs where the treads and/or landings are to be filled in with concrete or other material at a later date, unless the stairs are temporarily fitted with wood or other solid material at least to the top edge of each pan. Such temporary treads and landings will be replaced when worn below the level of the top edge of the pan
- Except during stairway construction, foot traffic is prohibited on skeleton metal stairs where permanent treads and/or landings are to be installed at a later date, unless the stairs are fitted with secured temporary treads and landings long enough to cover the entire tread and/or landing area
- Treads for temporary service will be made of wood or other solid material, and will be installed the full width and depth of the stair
- Stairways having four or more risers or rising more than 30 inches, will be equipped with: at least one handrail; one stairrail system along each unprotected side or edge
- Winding and spiral stairways will be equipped with a handrail offset sufficiently to prevent walking on those portions of the stairways where the tread width is less than 6 inches
- The height of stairrails will be as follows will be not less than 36 inches from the upper surface of the stairrail system to the surface of the tread, in line with the face of the riser at the forward edge of the tread

- Midrails, screens, mesh, intermediate vertical members, or equivalent intermediate structural members, will be provided between the top rail of the stairrail system and the stairway steps
  - Midrails will be located at a height midway between the top edge of the stairrail system and the stairway steps
  - Screens or mesh will extend from the top rail to the stairway step, and along the entire opening between top rail supports
  - When intermediate vertical members, such as balusters, are used between posts, they will be not more than 19 inches apart
  - Other structural members will be installed such that there are no openings in the stairrail system that are more than 19 inches wide
- Handrails and the top rails of stairrail systems will be capable of withstanding, without failure, a force of at least 200 pounds applied within 2 inches of the top edge, in any downward or outward direction, at any point along the top edge
- The height of handrails will be not more than 37 inches or less than 30 inches from the upper surface of the handrail to the surface of the tread
- When the top edge of a stairrail system also serves as a handrail, the height of the top edge will be not more than 37 inches or less than 36 inches
- Stairrail systems and handrails will be so surfaced as to prevent injury to employees from punctures or lacerations, and to prevent snagging of clothing
- Handrails will provide an adequate handhold for employees grasping them to avoid falling
- The ends of stairrail systems and handrails will be constructed so as not to constitute a projection hazard
- Handrails that will not be a permanent part of the structure being built will have a minimum clearance of 3 inches between the handrail and walls, stairrail systems, and other objects
- Unprotected sides and edges of stairway landings will be provided with guardrail systems

POLICY

Solomon Corporation has implemented this policy to ensure no employee is exposed to lead at levels in excess of Permissible Exposure Limits (PEL), which for lead will be 50 micrograms per cubic meter (50µ/m^3) at 8 hour Time Weighted Average (TWA). If exposures are above the “Action Level,” engineering controls, work practices, or Personal Protective Equipment (PPE) will be required to reduce exposure levels. Action Level means employee exposure, without regard to the use of respirators, to an airborne concentration of lead of 30 micrograms per cubic meter of air (30 µg/m^3) averaged over an 8-hour period.

Corporate EH&S Manager Mike Dahl is the assigned supervisor responsible for ensuring the following administrative controls, engineering controls, and work practices are enforced.

TRAINING

Corporate EH&S Manager Mike Dahl will provide information and training for each employee who has potential exposure to lead that includes the following required elements:

- Provides a training program for, and assures the participation of, all employees who are subject to exposure to lead at or above the action level or for whom the possibility of skin or eye irritation exists
- Provide initial training prior to the time of initial job assignment
- The training program will be repeated annually for each employee
- Employee will be informed of Appendices A and B of the Lead Regulation
- All affected employees are required to attend training programs
- Employees will be informed of the specific nature of the operations which could result in exposure to lead above the action level
- Employees will be informed of the purpose, proper selection, fitting, use, and limitations of respirators
- Employees will be informed of the engineering controls being used
- The employees will be informed of the purpose and a description of the Medical Surveillance Program and the Medical Removal Program
- There could be adverse effects on reproductive systems

Corporate EH&S Manager Mike Dahl will make readily available to all affected employees, a copy of the OSHA Lead standard and its appendices.

EXPOSURE MONITORING

- Exposure monitoring will be conducted to determine if any employee may be exposed to lead at or above the action level. Employee exposure is that which would occur if the employee were not using a respirator
- Measurements to determine exposure will be collected through personal monitoring
- Corporate EH&S Manager Mike Dahl will collect full shift (for at least 7 continuous hours) personal samples including at least one sample for each shift, for each job classification, in each work area. Full shift personal samples will represent the monitored employee's daily lead exposure
- Corporate EH&S Manager Mike Dahl will determine if any employee may be exposed to lead at the action level and will monitor employee exposures and base initial determinations on the monitoring results including: any information, observations, or calculations which would indicate employee exposure to lead; any previous measurements of airborne lead; any employee complaints of symptoms which may be attributable to lead exposure
- If any determination or monitoring reveals employee exposure to be at the action level but below the PEL, the monitoring will be repeated at least every 6 months
- If the initial monitoring reveals that employee exposure is above the permissible exposure limit, the monitoring will be repeated quarterly
- Additional monitoring will be done whenever there has been a production, process, control, or personnel change that may result in new or additional exposure to lead
- Each affected employee will be notified in writing within 5 working days after the receipt of monitoring results and the completion of corrective actions
- Whenever the results indicate that employee exposure exceeds the PEL, Corporate EH&S Manager Mike Dahl will include in the written notice a statement that the PEL was exceeded and a description of the corrective action taken or to be taken to reduce exposure to or below the PEL
- Solomon Corporation will use a method of monitoring and analysis which has an accuracy (to a confidence level of 95%) of not less than plus or minus 20 percent for airborne concentrations of lead equal to or greater than 30 $\mu g/m^3$
- Where any employee is exposed to lead above the PEL for more than 30 days per year, Solomon Corporation will implement engineering and work practice controls (including administrative controls) to reduce employee exposure to lead. If such controls are not feasible, Solomon Corporation will demonstrate and document the reasons
- Wherever the engineering and work practice controls which can be instituted are not sufficient to reduce employee exposure to or below the PEL, Solomon Corporation will continue to use them to reduce exposures to the lowest feasible level and will supplement them by the use of respiratory protection

SITE-SPECIFIC COMPLIANCE PLAN

Solomon Corporation will provide a written Site-specific Compliance Program to reduce exposures to or below the PEL, and interim levels if applicable, solely by means of engineering and work practice controls. Written plans will include at least the following:

- Description of each operation in which lead is emitted
- Description of the specific means employed to achieve compliance, including engineering plans and studies used to determine methods selected for controlling exposure to lead
- A report of the technology considered in meeting the PEL
- Air monitoring data which documents the source of lead emissions
- A work practice program which includes items required

The Site-specific Compliance Program will be available at the worksite for examination and copying by any affected employee or OSHA. Program will be revised and updated at least every 6 months to reflect the current status.

When ventilation is used to control exposure, measurements which demonstrate the effectiveness, such as capture velocity, duct velocity, or static pressure will be made at least every 3 months. Measurements will be made within 5 days of any change in production, process, or control which might result in a change in employee exposure to lead.

If air from exhaust ventilation is recirculated into the workplace, Corporate EH&S Manager Mike Dahl will assure that:

- The system has a high efficiency filters with reliable back-up filters
- Controls to monitor the concentration of lead in the return air and to bypass the recirculation system automatically if it fails are installed, operating, and maintained
- When administrative controls are used as a means of reducing employees TWA exposure to lead, Solomon Corporation will establish and implement a job rotation schedule which includes:
  - Name or identification number of each affected employee
  - Duration and exposure levels at each job or workstation with and affected employee
  - Any other information that may be useful in assessing the reliability of administrative controls to reduce exposure to lead

RESPIRATORY PROTECTION PROGRAM

The Respiratory Protection Program and respiratory protective equipment is provided for all employees with potential for exposure to lead. All respiratory equipment will be National Institute of Occupational Safety and Health (NIOSH) certified, and is provided without cost to the employee. Respirators will be used during:

- Periods necessary to install or implement engineering or work-practice controls
- Work operations for which engineering and work-practice controls are not sufficient to reduce employee exposures to or below the PEL
- Periods when an employee requests a respirator

Solomon Corporation provides a Respiratory Protection Program in accordance with §1910.134. If an employee has breathing difficulty during fit testing or respirator use, the employee will be provided with a medical examination to determine whether the employee can use a respirator while performing the required duty.

Table II - Respiratory Protection for Lead Aerosols	
Airborne concentration of lead or condition of use	Required respirator 3
Not in excess of 0.5 mg/m3 (10 x PEL)	Half-mask, air-purifying respirator equipped with high efficiency filters. 2,3
Not in excess of 2.5 mg/m3 (50 x PEL)	Full facepiece, air-purifying respirator with high efficiency filers. 3
Not in excess of 50 mg/m3 (1000 x PEL)	(1) Any powered, air-purifying respirator with high efficiency filters; 3 or
	(2) Half-mask supplied-air respirator operated in positive-pressure mode. 2
Not in excess of 100 mg/m3 (2000 x PEL)	Supplied-air respirators with full facepiece, hood, helmet, or suit, operated in positive pressure mode.
Greater than 100 mg/m3, unknown concentration or firefighting	Full facepiece, self-contained breathing apparatus operated in positive-pressure mode.

1. Respirators specified for high concentrations can be used at lower concentrations of lead.
2. Full facepiece is required if the lead aerosols cause eye or skin irritation at the use of concentrations.
3. A high efficiency particulate filter means 99.97 percent efficient against 0.3 micron size particles.

The appropriate respirator or combination of respirators will be selected from Table II. An employee may choose a NIOSH-certified powered, air purifying respirators (PAPR) at no extra cost to the employee. The respirator will be used during the time-period necessary to install or implement engineering or work practice controls.

PROTECTIVE CLOTHING AND PERSONAL PROTECTIVE EQUIPMENT

Protective work clothing and equipment will be provided at no cost to employees exposed to lead above the PEL. Employees will be required to use appropriate protective work clothing and equipment such as, but not limited to: coveralls or similar full-body work clothing; gloves, hats, and shoes or disposable shoe coverlets; face shields, vented goggles, or other PPE.

Solomon Corporation will provide the protective clothing in a clean and dry condition at least weekly, and daily to employees whose exposure levels are over 200 µg/m^3 of lead as an 8-hour TWA, as well as:

- Cleaning, laundering, or disposal of protective clothing and equipment as required
- Repair or replace required protective clothing and equipment to maintain effectiveness
- Ensure that all protective clothing is removed at the completion of a work shift only in change rooms provided for that purpose as prescribed
- Ensure that contaminated protective clothing that is to be cleaned, laundered, or disposed of, is placed in a closed container in the change-room which prevents dispersion of lead outside the container
- Ensure that the containers of contaminated protective clothing and equipment are labeled
- Prohibit the removal of lead from protective clothing or equipment by blowing, shaking, or any other means that disperses lead into the air

HOUSEKEEPING AND HYGIENE FACILITIES

- Housekeeping methods will be such that all surfaces in the workplace will be maintained as free as practicable of accumulations of lead, in a manner that minimizes the reentry of lead into the workplace
- *Solomon Corporation* will provide decontamination, changing, and hygiene facilities for employees
- Corporate EH&S Manager Mike Dahl will ensure that food or beverage is not consumed, tobacco not used, or cosmetics not applied except in change rooms, lunchrooms, and showers. Where employee airborne exposure to lead is above the PEL, Solomon Corporation will provide:
  - Clean change rooms that are equipped with separate storage facilities for protective work clothing and equipment and for street clothes that prevent cross-contamination
  - Shower facilities at the end of the work shift for employees who are required to shower and ensure employees do not leave the workplace wearing any clothing or equipment worn during the work shift
  - Lunchroom facilities that have a temperature controlled, positive pressure, filtered air supply, and are readily accessible to employees. Employees are prohibited from entering lunchroom facilities with protective work clothing or equipment unless surface lead dust has been removed by vacuuming, down draft booth, or other cleaning method
  - An adequate number of lavatory facilities. Employees are required to wash their hands and face before eating, drinking, or smoking

MEDICAL SURVEILLANCE

Solomon Corporation will provide a medical surveillance program, without cost to employees and at a reasonable time and place, for all employees who are or may be exposed above the action level for more than 30 days per year. All medical examinations and procedures are performed by or under the supervision of a licensed physician.

Biological monitoring is available according to the following schedule:

- Blood sampling and analysis for lead and zinc protoporphyrin levels to each employee at least every 6 months
- At least every two months for each employee whose last blood sampling and analysis indicated a blood lead level at or above 40 µg/100 g of whole blood. This frequency will continue until two consecutive blood samples and analyses indicate a blood lead level below 40 µg/100 g of whole blood
- A warning sign will be posted at each regulated work area that exceeds the PEL
- Signs will be illuminated and cleaned as necessary so that the legend is readily visible

Solomon Corporation will maintain an accurate record of all monitoring that includes: the date(s), number, duration, location, and results of each of the samples taken, including a description of the sampling procedure used to determine exposure.

- A description of the sampling and analytical methods used and evidence of their accuracy
- Name, social security number, and job classification of the employee monitored and of all other employees whose exposure the measurement is intended to represent
- The type of respiratory protection worn, if any
- These monitoring records will be maintained for at least 40 years or for the duration of employment plus 20 years, whichever is longer

Solomon Corporation will maintain an accurate record for each employee subject to medical surveillance. This record will include:

- The name, social number, and description of the duties of the employee
- A copy of the physician's written opinions
- Results of any airborne exposure monitoring done for that employee and the representative exposure levels supplied to the security physician
- Any employee medical complaints related to exposure to lead

Solomon Corporation will keep, or assure that the examining physician keeps, a copy of the medical examination results, including medical and work history; a description of the laboratory procedures; a copy of the results of biological monitoring. These medical records will be maintained for at least 40 years, or for the duration of employment plus 20 years, whichever is longer.

Solomon Corporation will maintain an accurate record for each employee removed from current exposure to lead. Each record will include:

- The name and social security number of the employee
- The date on each occasion that the employee was removed from current exposure to lead as well as the corresponding date on which the employee was returned to his or her former job status
- A brief explanation of how each removal was or is being accomplished
- A statement with respect to each removal indicating whether or not the reason for the removal was an elevated blood lead level
- Medical removal records will be maintained for at least the duration of an employee's employment

Environmental monitoring, medical removal, and medical records will be provided upon request to employees, designated representatives, and OSHA.

REMOVAL PERIOD

At least monthly during the removal period of each employee removed from exposure to lead due to an elevated blood lead level. Inform in writing any person who cleans or launders protective clothing or equipment of the potentially harmful effects of exposure to lead.

Follow-up blood sampling tests will be provided whenever the results of a blood lead level test indicate that an employee's blood lead level exceeds the levels for medical removal. This follow-up will be provided within two weeks after receiving the results of the first blood-sampling.

Accuracy of blood lead level sampling and analysis will have an accuracy within plus or minus 15 percent or 6 µg/100 ml, whichever is greater, and will be conducted by a laboratory licensed by the Center for Disease Control, (CDC) or that has received a satisfactory grade in blood lead proficiency testing from CDC in the prior twelve months.

Each employee whose blood lead level exceeds 40 µg/100 g will be notified in writing within five working days after the receipt of biological monitoring results. Medical examinations and consultations are available to affected employees on the following schedule:

- At least annually for each employee for whom a blood sampling test conducted at any time during the preceding 12 months indicated a blood lead level at or above 40 µg/100 g
- Prior to assignment for each employee being assigned for the first time to an area in which airborne concentrations of lead are at or above the action level
- As soon as possible, upon notification by an employee either that the employee has developed signs or symptoms commonly associated with lead intoxication, that the employee desires medical advice concerning the effects of current or past exposure to lead on the employee's ability to procreate a healthy child, or that the employee has demonstrated difficulty in breathing during a respirator fitting test or during use
- As medically appropriate for each employee, either removed from exposure to lead due to a risk of sustaining material impairment to health, or otherwise limited pursuant to a final medical determination

Solomon Corporation will provide Medical Removal Protection benefits to any employee subject to Temporary Medical Removal.

All containers or materials containing lead will be appropriately labeled to indicate the contents and the hazards of the contents.

The Safety Data Sheet (SDS) for Lead and all hazardous materials are available to all employees at the company office.

POLICY

Solomon Corporation has implemented this policy to ensure employees are made aware of the potential hazards and locations of lead.

Corporate EH&S Manager Mike Dahl is the assigned supervisor responsible for ensuring the following administrative controls, engineering controls, and work practices are enforced:

TRAINING AND GENERAL KNOWLEDGE

Lead awareness training is required for employees whose work activities may contact lead containing materials but do not disturb the material during their work activities. Lead awareness training will be conducted at the time of hire, during orientation, or prior to assignment of work in lead containing areas. It is required that annual refresher training be given to all employees whose work activities may contact lead containing materials but do not disturb the material during their work activities. Lead awareness training must be documented including the date of training, the employee names, and the person that conducted the training.

POSSIBLE LOCATIONS OF LEAD

The following is a list of possible locations of lead:

- Leaded paints
- Leaded solders
- Pipes
- Batteries
- Circuit boards
- Cathode ray tubes
- Leaded glass
- Demolition and salvage materials
- Lead in the Workplace

THESE ACTIVITIES AND WORKPLACES MAY HAVE PROBLEMS WITH LEAD EXPOSURE:

- Lead production or smelting
- Brass, copper, and lead foundries
- Lead fishing-weight production
- Machining and grinding lead alloys
- Battery manufacturing and recycling
- Radiator manufacturing and repair
- Scrap metal handling
- Lead soldering
- Indoor firing ranges
- Ceramic glaze mixing

THE FOLLOWING CONSTRUCTION ACTIVITIES ARE OF PARTICULAR CONCERN:

- Demolition of old structures
- Steel-bridge maintenance
- Thermal stripping or sanding/scraping of old paint
- Welding, burning, and torching of old painted metal
- Abrasive blasting or rivet busting of structures with lead paint
- Home renovation and remodeling
- Use of marine paints

LEAD AND WORKER HEALTH

Lead enters the body in several ways:

- Workers can inhale in lead dust, mist, or fumes
- Workers can ingest lead dust that gets on their hands, beards, or clothes, or that gets in or on food, drinks, or anything else they put in their mouths
- Leaded gasoline can be absorbed through the skin

Once lead gets into the body, it stays there for a long time. Lead can build up in the body to dangerous levels over time.

HEATH AFFECTS

Common symptoms of acute lead poisoning are:

- Loss of appetite
- Nausea
- Vomiting
- Stomach cramps
- Constipation
- Difficulty in sleeping
- Fatigue
- Moodiness
- Headache
- Joint or muscle aches
- Anemia

Too much lead in the body can damage the brain, nerves, kidneys, and blood cells. Lead can also affect the ability to conceive and bear a healthy child. If a pregnant woman is exposed to lead, it can harm her fetus. Men with lead exposure can have damaged sperm.

Overexposure to lead is common. Although many people with high lead levels do not feel sick or poisoned, their health may be seriously affected. The longer people have elevated lead levels, the greater the risk of health problems. Sometimes the damage is permanent.

SIGNS, LABELS, & ASSESSMENTS

It is a requirement of Solomon Corporation that all employees must abide by any signs, labels, and assessment reports indicating the presence of lead containing materials.

Based on the assessments made the appropriate work practices must be followed to ensure the lead containing materials are not disturbed.

SAFE WORK PRACTICES

Solomon Corporation employees will follow these safe work practices if they work in an area where they may contact lead materials.

- Use separate work clothes and shoes or boots while at work, keeping street clothes in a clean place
- Do not wear your work clothes and shoes or boots home
- If possible, shower at work before going home
- Launder work clothes at work if necessary and separately at home. Not wearing work clothes and shoes or boots home
- Wash your hands and face if contacting lead and before eating, drinking or smoking
- Eat, drink, and smoke only in areas free of lead dust and fumes
- Ensure that you are not overexposed to lead in your workplace. This may include special ventilation equipment or the use of a properly-fitted respirator
- Avoid stirring up lead-containing dust with dry sweeping or compressed air in favor of safer cleaning practices, wet cleaning and vacuuming using HEPA filters

MULTI-CONTRACTOR WORKSITES

If employees of Solomon Corporation are working immediately adjacent to a lead abatement activity are exposed to lead due to the inadequate containment of such job. Solomon Corporation’s employees will be either immediately removed from the area until the enclosure breach is repaired or perform an initial exposure assessment.

POLICY

Solomon Corporation has implemented this policy to inform workers of the requirements and procedures to be followed when using live line tools on electrical equipment. This ensures the safety and health of the employees on the job site.

REFERENCES

- §1910.269 – Electric Power Generation, Transmission, and Distribution

RESPONSIBILITIES

Live line tool safety is a responsibility shared between the Company and its employees.

EMPLOYER RESPONSIBILITIES

- Ensuring that Live Line tool safety inspections occur per requirements
- Training personnel in how to select, inspect, and use live line tools
- Responding quickly to eliminate workplace hazards
- Ensuring all equipment is kept in good repair
- Ensuring employees follow safe job procedures
- Reviewing safe work procedures whenever there is a significant change to any element of the job or there has been an injury or illness

SAFETY COMMITTEE RESPONSIBILITIES

- Assist in live line tool inspections as necessary
- Assist in training employees in live line tool use
- Monitor the workplace for hazards
- Encourage employees to report hazards
- Implement appropriate controls
- Ensure corrective action is taken promptly

EMPLOYEE RESPONSIBILITIES

- Follow safe job procedures
- Report hazards to a supervisor immediately

TRAINING

Solomon Corporation employees who may be required to work on live lines will be trained on the proper selection, use, and maintenance of live line tools.

SAFE PRACTICES

TOOL SELECTION AND USE

The tools selected for use must be appropriate for the work being performed. Live line tools used by Solomon Corporation will be designed and constructed to withstand the following minimum tests:

- 100,000 volts per foot of length for five minutes if the tool is made of fiberglass reinforced plastic
- 75,000 volts per foot of length for three minutes if the tool is made of word
- Any other tests that Solomon Corporation can demonstrate are equivalent

CARE AND MAINTENANCE OF LIVE LINE TOOLS

All live line tools must be wiped clean and visually inspected for any defects prior to use. Inspections must be completed daily to ensure that the tools are in good working order.

Tools found to be defective or in a state of disrepair will be immediately removed from service and tagged as unsafe for use. Defective tools will be sent in for repairs, and will be either repaired to manufacturer's specifications, or, if it is not feasible to repair them, discarded and replaced. Tools may be returned to service once they have been repaired to good working standard, tested and meet manufacturer's specifications.

PERIODIC EXAMINATION

Solomon Corporation will remove live line tools which are used for employee protection periodically, at a minimum of once every two years. Once removed from service, they will be given a thorough examination, cleaning and testing. If the examination determines that repairs are needed, they will be marked as such and repaired before being allowed back into service. After examination, cleaning, and repair, the live line tools will be tested and must pass testing before being put back into service. Solomon Corporation will replace live line tools that do not meet testing criteria or are deemed unfeasible to repair.

POLICY

Solomon Corporation has implemented this Control of Hazardous Energy (COHE) Program and Lockout/Tagout (LOTO) procedures to ensure that employees are properly trained, aware of hazards associated with Lockout/Tagout, and correctly informed of procedures, policies, and practices to prevent or, if possible, eliminate these hazards. This program covers the servicing and maintenance of machines and equipment in which the unexpected energizing or starting of the machines or equipment, or the release of stored energy, could cause injury to employees.

REFERENCES

- § 1910.147 – The control of hazardous energy (lockout/tagout)

ROLES AND RESPONSIBILITIES

Corporate EH&S Manager Mike Dahl is the supervisor responsible for ensuring the following training, engineering controls, work practices, and safety procedures are enforced. Corporate EH&S Manager Mike Dahl must ensure that employees, sub-contractors comply with the LOTO program and all client requirements. The performance of lockout/tagout procedures at Solomon Corporation will be inspected/evaluated at least annually by Corporate EH&S Manager Mike Dahl for compliance with company policy. Inspections will be documented and date, equipment, and employee(s) reviewed will be recorded.

All Employees

Failure to comply with proper lockout/tagout procedures is grounds for disciplinary action. Any unauthorized removal of warning tags or lockout devices will be grounds for immediate termination of employment.

OSHA has defined three different categories of employees, depending upon their exposure to hazardous energy

- Authorized Employees
- Affected Employees
- Other Employees

AUTHORIZED EMPLOYEES

An authorized employee is a person who locks out or tags out machines or equipment in order to perform servicing or maintenance on those machines or equipment. An affected employee becomes an authorized employee when that employee's duties include performing servicing or maintenance covered under this section.

- Affected employees will be notified by Corporate EH&S Manager Mike Dahl or the authorized employee of the application and removal of lockout devices or tagout devices. Notification will be given before the controls are applied, and after they are removed from the machine or equipment
- Locking out the appropriate equipment
- Identifying the lockout
- Verifying the lockout
- Maintaining the key to their lock in their possession
- Checking the work area and replacing guards or reactivating safety devices as appropriate, before removing the lockout
- Removing their lock when the job is complete
- Following the requirements of this standard when either preparing equipment for maintenance or actually performing maintenance activities
- Signing and dating tags

AFFECTED EMPLOYEES

Affected employees are those who operate or use a machine or equipment on which servicing or maintenance is being performed under lockout or tagout, or whose job requires them to work in an area in which such servicing or maintenance is being performed. Affected employees may assist when testing the equipment de-energized.

OTHER EMPLOYEES

Other employees (those whose work activities are or may be in an area where energy control procedures may be utilized) may not attempt to restart or reenergize machines or equipment that are locked out or tagged

TRAINING

Corporate EH&S Manager Mike Dahl will provide training to ensure the purpose and function of the Lockout / Tagout Program are understood by employees. The training program will ensure that employees acquire the knowledge and skills needed to safely apply, use, and remove energy controls. Each authorized employee will receive training in how to recognize applicable hazardous energy sources, the type and magnitude of the energy available in the workplace, and the methods and means necessary for energy isolation and control. Affected and other employees will be trained on these topics:

- An overview of the applicable LOTO regulations
- Hazards associated with stored energy
- Recognition of lockout devices
- Purpose of the energy-control program
- LOTO procedures

Training will be documented using sign-in sheets that include the topics covered, and the dates and times of training sessions.

All affected / authorized employees will retrain in, and review, lockout-tagout procedures whenever there is a change in machines, assignments, equipment, or processes that presents a new hazard, or when there is a change in the energy-control procedures. This retraining will be completed and documented on an ongoing basis by employees' area supervisor.

Employees must also receive additional training and demonstrate understanding if inspection or conditions show that the employees are not following established procedures or that safety has been compromised.

When tagout systems are used, employees will also be trained in the following limitations of tags.

- Tags are essentially warning devices affixed to energy isolating devices, and do not provide the physical restraint on those devices that is provided by a lock
- When a tag is attached to an energy isolating means, it is not to be removed without permission of the authorized person responsible for it, and it is never to be bypassed, ignored, or otherwise defeated
- Tags must be legible and understandable by all authorized employees, affected employees, and all other employees whose work operations are or may be in the area, in order to be effective
- Tags and their means of attachment must be made of materials that will withstand the environmental conditions encountered in the workplace
- Tags may evoke a false sense of security, and their meaning needs to be understood as part of the overall energy control program
- Tags must be securely attached to energy isolating devices so that they cannot be inadvertently or accidentally detached during use

RETRAINING

Changes of job assignments, changes in materials used, or any non-routine tasks involving energy control procedures will require notification and/or retraining of effected employees. Corporate EH&S Manager Mike Dahl will inform or retrain employees of any new or additional hazards, detail methods of energy control necessary for the job. Notifications and retraining will be documented with the name of employee, date, description of action taken, and verification by *Corporate EH&S Manager Mike Dahl*.

THE SOURCES OF STORED ENERGY THAT REQUIRE LOCKOUT ARE:

- Electrical: service panels, outlets, transformers, motors, capacitors
- Mechanical: spring-loaded equipment, tensioning devices
- Hydraulic: rams, oil-powered equipment
- Pneumatic: compressed-air equipment
- Kinetic / Gravity: counterweights, flywheels
- Fluids / Steam: heating pipes, steam lines

PROTECTIVE MATERIALS AND HARDWARE

Locks, tags, chains, wedges, key blocks, adapter pins, self-locking fasteners, or other hardware will be provided by the employer for isolating, securing or blocking of machines or equipment from energy sources.

Lockout devices and tagout devices will be singularly identified; will be the only devices(s) used for controlling energy; will not be used for other purposes; and will meet the following requirements:

DURABLE

- Lockout and tagout devices will be capable of withstanding the environment to which they are exposed for the maximum period of time that exposure is expected
- Tagout devices will be constructed and printed so that exposure to weather conditions or wet and damp locations will not cause the tag to deteriorate or the message on the tag to become illegible
- Tags will not deteriorate when used in corrosive environments such as areas where acid and alkali chemicals are handled and stored

STANDARDIZED

Lockout and tagout devices will be standardized within the facility in at least one of the following criteria: color; shape; or size, and additionally, in the case of tagout devices, print and format will be standardized.

SUBSTANTIAL

- Lockout devices. Lockout devices will be substantial enough to prevent removal without the use of excessive force or unusual techniques, such as with the use of bolt cutters or other metal cutting tools
- Tagout devices. Tagout devices, including and their means of attachment, will be substantial enough to prevent inadvertent or accidental removal. Tagout device attachment means will be of a non-reusable type, attachable by hand, self-locking, and non-releasable with a minimum unlocking strength of no less than 50 pounds and having the general design and basic characteristics of being at least equivalent to a one-piece, all-environment-tolerant nylon cable tie

IDENTIFIABLE

Lockout devices and tagout devices will indicate the identity of the employee applying the device(s).

Tagout devices will warn against hazardous conditions if the machine or equipment is energized and will include a legend such as the following: Do Not Start, Do Not Open, Do Not Close, Do Not Energize, Do Not Operate.

SAFE PRACTICES

This policy applies to the control of hazardous energy during servicing and / or normal maintenance of machines and equipment 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 an area on a machine or piece of equipment where work is being performed at or upon the point of operation, or when an associated danger zone exists during a machine's operating cycle

EXCEPTION: Minor tool changes and adjustments that take place during normal production operations are not covered by the OSHA Standard if they are routine, repetitive, and integral to the use of the equipment for production, provided that the work is performed using alternative measures which provide effective protection.

The policy does not apply to:

- Work on cord-and-plug-connected electrical equipment when the employee performing the service or maintenance controls energizing by unplugging the equipment from the energy source
- Hot tap operations involving transmission systems for substances such as gas, steam, water, or petroleum, when they are performed on pressurized pipelines. However, it must be demonstrated that the continuity of service is essential, shut off of the system is impractical, and special equipment is used which provides effective protection

When a machine can be unplugged and there is no residual stored energy, a LOTO procedure need not be used. In that case, use a DO NOT OPERATE tag to warn employees that the equipment is out of order.

- If an energy source can be locked out, this method will be utilized. A “Lockout Device” utilizes a lock, either key or combination, to hold an energy isolating device in a safe position
- If an energy source cannot be locked out, a tagout system will be utilized. A “Tagout Device” is a warning tag (weather and chemical resistant) standardized in size, color, with wording warning of hazardous energy such as: (Do Not Start) (Do Not Open) (Do Not Close) (Do Not Energize) (Do Not Operate)
- Lockout/Tagout devices will be clearly marked to indicate the identity of the employee applying the device
- Lockout or tagout will be performed only by the authorized employees who are performing the servicing or maintenance
- Affected employees will be notified by Corporate EH&S Manager Mike Dahl or authorized employee of the application and removal of lockout devices or tagout devices. Notification will be given before the controls are applied, and after they are removed from the machine or equipment

Established Solomon Corporation procedures for energy control and the application of lockout or tagout devices covers the following elements and actions and will be done in the following sequence:

SEQUENCE OF LOCKOUT

1. The authorized employee will notify all affected employees that servicing or maintenance is required on a machine or equipment, and that the machine or equipment must be shut down and locked out to perform the servicing or maintenance.
2. The authorized employee will identify the type and magnitude of the energy that the machine or equipment uses, will understand the hazards of each energy source and will know the methods to control the energy.
3. When the electrical disconnect is attached (or adjacent) to the equipment, the motor-stop button will be depressed and the disconnect handle placed in the “Off” position. The disconnect handle should be operated while standing to one side of the disconnect, rather than in front of the switch. This is a safety precaution in case the parts in the switch explode. The authorized employee should attach his / her lock to the handle of the disconnect and remove the key.
4. If a switch or disconnect cannot be locked out for any reason, an electrician must remove the fuses before any work is started.
5. Stored or residual energy such as that in capacitors, springs, rotating flywheels and hydraulic systems, and in air / gas, steam or water pressure lines must be dissipated or restrained by methods such as grounding, repositioning, blocking or venting. If the accumulation of stored energy is possible, isolation must be verified continuously until servicing or maintenance is completed.

6. Equipment using hydraulic pressure will be locked out by placing the hydraulic pump motor electrical-disconnect switch in the “Off” position, applying a lock to the disconnect and bleeding off residual pressure in the piping system if the energy could potentially endanger personnel.
7. The authorized employee will ensure that the equipment is completely disconnected from all energy source(s) by operating the push button or other normal operating controls or by otherwise testing to make certain the machine / equipment will not operate.
8. Return operating control(s) to neutral or “Off” position after verifying the isolation of the equipment.
9. The machine is now locked out and service or repairs can safely begin.
10. If there are any doubts about the above procedure, the authorized employee will contact his / her supervisor before proceeding.

PROCEDURES INVOLVING MORE THAN ONE PERSON (GROUP LOCKOUT)

In the preceding steps, if more than one individual is required to lock the energy-isolating device(s), they will utilize a procedure which affords the employees a level of protection equivalent to that provided by implementing a personal lockout or tagout device. When an energy-isolating device cannot accept multiple locks, a multiple-lockout or tagout device (hasp) may be used.

There will be authorized employees responsible for a set number of employees protected by a single lock under the authorized employee’s responsibility.

RESTORING EQUIPMENT TO SERVICE

When servicing or maintenance is completed and the machine or equipment is ready to return to normal operating condition, the authorized person will take the following steps:

1. Visually inspect the machine or equipment and the immediate area around the machine or equipment to ensure that nonessential items have been removed and that the machine or equipment components are operationally intact.
2. Visually inspect the work area to ensure that all employees have been safety positioned or removed from the area.
3. Verify that the controls are in neutral.
4. Remove the lockout device(s) and re-energize the machine or equipment.

Note: Some forms of blocking may require the machine to be re-energized before they can be safely removed.

5. Notify affected employees that the servicing or maintenance is completed and the machine or equipment is ready to use.

PROCEDURES FOR REMOVING ABANDONED LOCKS

If a safety lock has been left in place by an employee who has left the building, it will be removed only by according to the following procedures.

Before the lock is removed:

- A thorough inspection of the equipment will be made by the supervisor responsible for the area
- Corporate EH&S Manager Mike Dahl will confirm that the authorized employee who applied the lockout device is not at the facility
- Corporate EH&S Manager Mike Dahl will remove the lock, once he / she has determined that starting up the equipment will not endanger other personnel
- Corporate EH&S Manager Mike Dahl will make all reasonable efforts to contact the authorized employee to inform him / her that his / her lockout or tagout device has been removed
- Corporate EH&S Manager Mike Dahl will ensure that the authorized employee has knowledge of this release before he / she resumes work at the facility
- Each time it is necessary to remove / cut a safety lock, a written report will be prepared by the person authorized to remove the lock and a copy will be sent to the Solomon Corporation and contractor (if applicable) leadership
- In situations where lockout or tagout devices must be temporarily removed and the machine or equipment energized to test or position, the following procedures will be followed:
  1. Clear the machine or equipment of tools and materials.
  2. Remove employees from the machine or equipment area.
  3. Remove the lockout or tagout devices as specified.
  4. Energize and proceed with testing or positioning.
  5. De-energize all systems and reapply energy control measures to continue the servicing and/or maintenance.

This procedure will be verified and documented by personnel performing it.

- Whenever outside servicing personnel are to be engaged in operations requiring lockout or tagout procedures, Corporate EH&S Manager Mike Dahl and the outside employer will inform each other of their respective lockout or tagout procedures
- Corporate EH&S Manager Mike Dahl will ensure that employees understand and comply with the restrictions and prohibitions of the outside employer's energy control program
- When servicing and/or maintenance is performed by a crew, craft, department, or other group, they will utilize a procedure which affords the employees a level of protection equivalent to that provided by the implementation of a personal lockout or tagout device. Group lockout or tagout devices will be used with the following specific requirements:
  - Primary responsibility is vested in Corporate EH&S Manager Mike Dahl for a set number of employees working under the protection of a group lockout or tagout device (such as an operations lock)
  - Provision for Corporate EH&S Manager Mike Dahl to ascertain the exposure status of individual group members with regard to the lockout or tagout of the machine or equipment
  - When more than one crew, craft, department, etc. is involved, assignment of overall job-associated lockout or tagout control responsibility to Corporate EH&S Manager Mike Dahl to coordinate affected work forces and ensure continuity of protection
  - Each authorized employee will affix a personal lockout or tagout device to the group lockout device, group lockbox, or comparable mechanism when he or she begins work, and will remove those devices when he or she stops working on the machine or equipment being serviced or maintained
- During shift or personnel changes, procedures will be utilized to ensure the continuity of lockout or tagout protection, including provision for the orderly transfer of lockout or tagout device protection between off-going and oncoming employees, to minimize exposure to hazards from the unexpected energization or start-up of the machine or equipment, or the release of stored energy. Documentation will be maintained as to personnel, equipment, and particular Lockout/Tagout procedures involved in a specific ongoing operation.
- Lockout procedures are to be utilized over tagout procedures, where possible.
- Locks and tags used for lockout or tagout procedures will be clearly marked with identification of the employee applying the device.

The Lockout /Tagout procedures for Solomon Corporation are administered by Corporate EH&S Manager Mike Dahl, and will be those described in the following sections.

SPECIFIC ENERGY CONTROL PROCEDURE

Procedure Number:_____ Date:_____

Completed By:_____

Machine(s) or equipment utilizing this procedure:_____

Number of locks required:_____

Other lockout devices required:_____

PROCEDURES FOR CONTROLLING HAZARDOUS ENERGY

1. Sources of Hazardous Energy

☐ Electrical ☐ Natural Gas ☐ Springs

☐ Hydraulic ☐ Gravity ☐ Steam

☐ Chemical ☐ Pneumatic ☐ Thermal

☐ Other:_____

2. Notify affected employees that the machine is about to be shut down and locked out.

   Specific Instructions:

3. Shut down the machine using normal stopping procedures.

   Specific Instructions:

4. Isolate all energy sources listed above.

   Specific Instructions:

5. A) Apply locks to all isolating devices installed in Step Four.

   Specific Instructions:

   B) If a tag is used in lieu of a lock when an energy-isolating device is incapable of locking out a piece of equipment, the following additional safety precaution will be taken:

   Specific Instructions:

6. Block or dissipate all stored energy in rams, flywheels, springs, pneumatic or hydraulic systems, etc.

   Specific Instructions:

7. Verify that the machine is locked out by testing the machine operating controls.

   RETURN ALL CONTROLS TO THE “NEUTRAL” OR “OFF” POSITION AFTER TESTING.

   Specific Instructions

LOCKOUT PROCEDURE AUDIT / INSPECTION

EMPLOYEE AUDITING/INSPECTING:_____

DATE: _____

TASK / EQUIPMENT DESCRIPTION:_____

_____

_____

_____

	YES	NO
1. Is there a written lockout procedure for this machine or piece of equipment?	___	___
2. Is individual familiar with lockout procedures for specific piece of equipment?	___	___
3. Has individual performing lockout been trained?	___	___
4. Has machine or equipment been shut down?	___	___
5. Has machine or equipment been isolated?	___	___
6. Has individual placed lockout devices? (lockout and tag)	___	___
7. Has individual released all stored energy or placed a positive mechanical device in place to prevent accidental release?	___	___
8. Has individual tested the machine or equipment to verify effectiveness of the lockout device?	___	___
9. Upon removal of lockout device, has individual communicated to appropriate personnel that machine/equipment is back in service?	___	___
10. Procedure followed?	___	___

Recommendations / Corrective Action:

_____

_____

_____

_____

Audited/Inspected by: _____

Employee Signature: _____

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LOCKOUT PROCEDURE FOR SOLOMON CORPORATION

PURPOSE

This procedure establishes the minimum requirements for the lockout of energy isolating devices whenever maintenance or servicing is done on machines or equipment. It will be used to ensure that the machine or equipment is stopped, isolated from all potentially hazardous energy sources and locked out before employees perform any servicing or maintenance where the unexpected energization or start-up of the machine or equipment or release of stored energy could cause injury.

COMPLIANCE WITH THIS PROGRAM

All employees are required to comply with the restrictions and limitations imposed upon them during the use of lockout. The authorized employees are required to perform the lockout in accordance with this procedure. All employees, upon observing a machine or piece of equipment which is locked out to perform servicing or maintenance will not attempt to start, energize, or use that machine or equipment. Type of compliance enforcement to be taken for violation of the above:

SEQUENCE OF LOCKOUT

1) Notify all affected employees that servicing or maintenance is required on a machine or equipment and that the machine or equipment must be shut down and locked out to perform the servicing or maintenance.

   Affected employees and how to notify:

   Name(s): _____

   Job Title(s): _____

2) The authorized employee will refer to the company procedure to identify the type and magnitude of the energy that the machine or equipment utilizes, will understand the hazards of the energy, and will know the methods to control the energy.

   Type(s) and magnitude(s) of energy, its hazards and the methods to control the energy.

3) If the machine or equipment is operating, shut it down by the normal stopping procedure (depress stop button, open switch, close valve, etc.).

   Machine(s) or Equipment operating controls:

   Type(s): _____

   Location(s): _____

   Type(s): _____

   Location(s): _____

   Type(s): _____

   Location(s): _____

4) Deactivate the energy isolating device(s) so that the machine or equipment is isolated from the energy source(s).

Type(s) and location(s) of energy isolating devices.

5) Lock out the energy isolating device(s) with assigned individual lock

(Locks will be labeled with individuals name and number).

Lock #: _____ Assigned To: _____

Lock #: _____ Assigned To: _____

Lock #: _____ Assigned To: _____

Lock #: _____ Assigned To: _____

6) Stored or residual energy (such as that in capacitors, springs, elevated machine members, rotating flywheels, hydraulic systems, and air, gas, steam, or water pressure, etc.) must be dissipated or restrained by methods such as grounding, repositioning, blocking, bleeding down, etc.

Type(s) of stored energy - methods to dissipate or restrain.

7) Ensure that the equipment is disconnected from the energy source(s) by first checking that no personnel are exposed, then verify the isolation of the equipment by operating the push button or other normal operating control(s) or by testing to make certain the equipment will not operate.

Caution: Return operating control(s) to neutral or “off” position after verifying the isolation of the equipment.

Method of verifying the isolation of the equipment.

8) The machine or equipment is now locked out.

RESTORING EQUIPMENT TO SERVICE. When the servicing or maintenance is completed and the machine or equipment is ready to return to normal operating condition, the following steps will be taken:

1) Check the machine or equipment and the immediate area around the machine or equipment to ensure that non-essential items have been removed and that the machine or equipment components are operationally intact.
2) Check the work area to ensure that all employees have been safely positioned or removed from the area.
3) Verify that the controls are in neutral.
4) Remove the lockout devices and reenergize the machine or equipment.
5) Note: The removal of some forms of blocking may require re-energization of the machine before safe removal.
6) Notify affected employees that the servicing or maintenance is completed and the machine or equipment is ready for use.

POLICY

Solomon Corporation has adopted this policy to inform employees of the Manual Lifting Policy. This ensures the safety and health of the employees.

REFERENCE

- 1910.900 – Ergonomics

RESPONSIBILITIES

Manual lifting safety is a responsibility shared between the Company and its employees.

EMPLOYER RESPONSIBILITIES

Solomon Corporation is responsible for:

- Ensuring that manual equipment lifting/moving aids are available
- Ensuring each employee has been trained or instructed in ergonomic principles
- Responding quickly to eliminate workplace lifting hazards
- Ensuring all equipment is kept in good repair
- Ensuring employees follow safe job procedures
- Reviewing job hazard analysis whenever there is a significant change to any element of the job or there has been an injury or illness

SAFETY COMMITTEE RESPONSIBILITIES

It is the responsibility of the safety committee to:

- Assist in lifting hazard assessments
- Assist in training employees to recognize and control workplace hazards
- Monitor the workplace for hazards
- Encourage employees to report hazards
- Implement appropriate controls
- Ensure corrective action is taken promptly

EMPLOYEE RESPONSIBILITIES

All employees are expected to:

- Inspect loads to be moved/lifted before task
- Follow safe job procedures
- Report hazards to a supervisor immediately

TRAINING

It is the determination of Solomon Corporation to ensure all employees who are to engage in manual lifting will be properly trained on lifting techniques and the avoidance of musculoskeletal injuries.

Training will include:

- General principals of ergonomics
- Recognition of hazards and injuries
- Procedures for reporting hazardous conditions
- Methods and procedures for early reporting of injuries
- Job specific training shall be given on safe lifting and work practices, hazards, and controls

SAFE PRACTICES

HAZARD ASSESSMENT

Solomon Corporation ensures that before manual lifting is performed, a hazard assessment will be conducted.

The assessment must consider:

- Proper Lifting Techniques When Lifting, Moving and/or Positioning Materials:
  - Wear appropriate Personal Protective Equipment (back brace etc.)
  - Get help with an oversized load (or use a cart etc.), or anything more than you can comfortably lift
  - “Push” rather than “Pull” when possible
  - Move in as close as possible to the load before lifting
  - Get close to the load, brace your back and lift with your legs
  - Materials that must be manually lifted should be placed at "power zone" height, about mid-thigh to mid-chest. Special care should be taken to ensure proper lifting principles are used. Maintain neutral and straight spine alignment whenever possible. Usually, bending at the knees, not the waist, helps maintain proper spine alignment
  - Place materials that are to be manually lifted at "power zone" height, about mid-thigh to mid-chest. Maintain neutral and straight spine alignment whenever possible. Usually, bending at the knees, not the waist, helps maintain proper spine alignment
  - Order supplies in smaller quantities and break down loads off-site. When possible, request that vendors and suppliers break down loads prior to delivery
  - Avoid twisting, especially when bending forward while lifting. Turn by moving the feet rather than twisting the torso
  - Keep your elbows close to your body and keep the load as close to your body as possible
  - Manual Lifting Equipment & Engineering Controls

It is the policy of Solomon Corporation to provide and enforce the use of manual lifting equipment such as:

- Dollies
- Hand trucks
- Lift assist devices
- Jacks
- Carts
- Hoists

Other engineering controls should be considered, such as:

- Conveyors
- Lift tables
- Work station design

Two-Man Lifts

Where use of lifting equipment is impractical or not possible, two-man lifts must be used.

Investigation of Injuries

It is the determination of Solomon Corporation to investigate musculoskeletal injuries caused by improper lifting and to incorporate the injury findings into safe work procedures to prevent future injuries.

It is the policy of Solomon Corporation to ensure that all injuries will be recorded and reported as required by 29 CFR Part 1904.

Periodic Evaluation

It is the responsibility of supervisors to periodically evaluate work areas and employees' work techniques to assess the potential for and prevention of injuries.

New operations will be evaluated to engineer out hazards before work processes are implemented.

MECHANICAL EQUIPMENT NEAR ENERGIZED LINES

POLICY

Solomon Corporation has implemented this policy to inform workers of the requirements and procedures to be followed when operating mechanical equipment near energized lines. This ensures the safety and health of the employees on the job site.

RESPONSIBILITIES

Corporate EH&S Manager Mike Dahl is responsible for ensuring the following policy for control, training, personal protective equipment and safe work practices is enforced.

TRAINING

Mechanical equipment operators must:

- Be trained and certified in, and observed (at least annually) to be complying with, safety–related work practices and procedures (including emergency procedures)
- Be trained in first aid and cardiopulmonary resuscitation (CPR)

SAFE PRACTICES

OPERATOR REQUIREMENTS

Whenever employees must engage in mechanical equipment operations, operators must adhere to the load limitations and ratings that the manufacturer has placed for the equipment. Employees designated to operate mechanical equipment must be trained and qualified to operate the equipment prior to using it. Operators are prohibited from operating mechanical equipment while under the influence of any of the following that might impair their driving skills: alcohol, illegal drugs, prescription or over the counter medications.

EQUIPMENT REQUIREMENTS:

All mechanical equipment will be fit for the purposes intended, and will be maintained in a safe working order. All equipment shall be given a thorough visual inspection prior to being used on each shift. Inspections shall identify critical safety components of the equipment (e.g. mechanical elevating equipment, rotating equipment) and ensure that they are in good working order. If the visual inspection determines that the equipment is unfit for use, the equipment shall be removed from the jobsite and tagged unsafe for use until repaired and cleared for use.

All vehicles that are used which have an obstructed rear view shall be equipped with a reverse signal alarm that is sufficiently loud enough to be heard above the surrounding noise level. When possible, a designated employee shall signal to the operator when it is safe to back up.

APPROACH DISTANCES

Employees must adhere to the minimum approach distances for energized lines when operating mechanical equipment. To this effect, a designated spotter will be assigned to observe the equipment in operation and provide warning to the operator if approach distances are in danger of being compromised.

EMPLOYEE PROTECTION

Solomon Corporation shall provide Personal Protective Equipment at no additional cost to employees. Prior to working on energized lines, Solomon Corporation shall ensure that energized lines exposed to contact are covered with an insulating protective material that is fit to withstand the type of contact that could happen during the operation.

Solomon Corporation will take steps to ensure that each employee engaged in equipment operations near energized lines is protected from the hazards that may arise from equipment contact. To this end, Solomon Corporation shall implement the following techniques:

- Utilizing the best available ground to minimize the time the lines remain energized
- Bonding mechanical equipment together to minimize potential differences
- Providing ground mates to extend areas of equipotential
- Using insulating protective equipment and or barricades to guard against any remaining hazardous electrical potential differences

POLICY

Solomon Corporation has implemented this written mobile equipment procedures policy to ensure the safety and health of employees on the jobsite.

REFERENCES

Applicable Mobile Equipment Owner/Operator Manuals

RESPONSIBILITIES

Safe mobile equipment maintenance and operation is a responsibility shared between the Company and its employees.

EMPLOYER RESPONSIBILITIES

- Ensuring that safety inspections of the equipment occur on regular basis
- Ensuring that a operators are trained and safely operate mobile equipment
- Responding quickly to eliminate workplace hazards
- Ensuring all equipment is kept in good repair
- Ensuring employees follow safe job procedures
- Reviewing job hazard analysis whenever there is a significant change to any element of the job or there has been an injury or illness

SAFETY COMMITTEE RESPONSIBILITIES

- Assist in training as necessary
- Assist in training employees to recognize and control workplace hazards
- Monitor the workplace for hazards
- Encourage employees to report hazards
- Implement appropriate controls
- Ensure corrective action is taken promptly

EMPLOYEE RESPONSIBILITIES

- Only authorized employees will be allowed to operate mobile equipment. Authorization to operate mobile equipment will be issued to the employees who qualify under the appropriate training and proficiency testing
- Follow safe job procedures
- Report hazards to a supervisor immediately

TRAINING

Corporate EH&S Manager Mike Dahl will ensure the following items are covered in operator training:

- Capabilities and limitations of the specific piece of mobile equipment
- Basic maintenance requirements
- Pre-trip inspection requirements
- Operating requirements of mobile equipment including safe loading and unloading
- Use of required personal protective equipment and apparel

Mobile equipment operators will be regularly evaluated on the operation of the mobile equipment they use and retrained as required by legislation and applicable standards.

DEFINITION

Mobile Equipment is a wheeled or tracked vehicle which is engine or motor powered, together with attached or towed equipment, but not a vehicle operated on fixed rails or tracks.

PROCEDURES

INSPECTIONS:

At the beginning of each shift, the operator will conduct a pre-shift inspection. The operator will inspect and check the assigned equipment, reporting to his/her supervisor any malfunction of the:

- Clutch
- Braking system
- Steering
- Lighting
- Control system
- Locking/tagging out the equipment if necessary

OPERATOR REQUIREMENTS:

- The operator will ensure unauthorized personnel will not be permitted to ride on the equipment unless it is equipped to accommodate riders safely
- The operator will ensure the warning signal alarm is operating when the equipment is backing up
- The operator will use the access points provided to get on or off the equipment. The operator will not jump to the ground
- No operator will operate the equipment without the protection of an enclosed cab, or the use of approved eye protection when the equipment does not have an enclosed cab

- The operator will fasten the seat belt and adjust them for a proper fit before starting the engine, and while the equipment is in use
- The operator will not use, attempt to use any vehicle in any manner, or for any purpose other than for which it was designated and intended for
- The operator will not load the equipment/vehicle beyond its established load limit, and will not move the load until the length; width or height of the load has been centered and secured for safe transport

FUELING PROCEDURES:

Operators of a gasoline or diesel vehicle will shut off the engine before filling the fuel tank and will make sure that the nozzle of the filling hose makes contact with the filling neck of the fuel tank. No one will be permitted on the vehicle during fueling operations except as specifically designed. There will be no smoking or open flames in the immediate area during the fueling operation.

POLICY

Solomon Corporation has implemented this policy to ensure that no employee is exposed to electrical hazards in the workplace. The National Fire Protection Association (NFPA) 70E Standard for Electrical Safety in the Workplace will be followed when working with current electrical systems.

Arc Flash is the dangerous release of energy from an electric arc. Arc blast is the explosion created by an electric arc and the pressure wave. These occur any time electricity bridges the gap between an energized conductor and another material. It can be minor or major and is caused by a breakdown in insulation and typically follows an event.

A typical arc flash event is over in 30 cycles, taking half a second. The concussive forces can result in internal injuries and severe hearing damage. The incident energy is measured in calories per square centimeter (Cal/cm^2). The potential incident energy is used to set the level of Personal Protective Equipment (PPE)-rated clothing and approach distance boundaries. The point where PPE is required and arc flash boundaries start is 1.2 Cal/cm^2.

REFERENCES

The important standards come from the National Fire Protection Association (NFPA), and the Institute of Electrical and Electronics Engineers (IEEE). If an OSHA regulation is more demanding than NFPA or IEEE, OSHA's will be followed. The company will follow the applicable General Industry and Construction regulations.

- 1910 Subpart I – Personal Protective Equipment
- 1910.137 – Electrical Protective Devices
- 1910 Subpart R – Special Industries
- 1910.269 – Electric Power Generation, Transmission and Distribution
- 1910.269 – App E – Protection from Flames and Electric Arcs
- 1910 Subpart S – Electrical
- 1926 Subpart E – Personal Protective and Life Saving Equipment
- 1926.97 Electric Protective Equipment
- 1926 Subpart K – Electrical
- 1926 Subpart V – Electric Power Transmission and Distribution
- 1926 Subpart V App E – Protection from Flames and Electric Arcs

The IEEE 1584, Standard for Arc Flash Calculations will be referred to for engineers to conduct potential incident energy calculations

The NFPA 70 National Electrical Code will be followed when installing electric equipment. The NFPA 70E Standard for Electrical Safety in the Workplace will be followed when working with current electrical systems. This company will determine which NFPA version their Authority Having Jurisdiction (AHJ) organization applicable to each worksite enforces and follows.

Equipment will meet applicable standards set by the American National Standards Institute (ANSI) and the American Society for Testing and Materials (ASTM).

RESPONSIBILITIES

EMPLOYER RESPONSIBILITIES

Corporate EH&S Manager Mike Dahl is the supervisor responsible for ensuring the following policy for controls, training, personal protective equipment, and safe work practices are enforced:

- Follow the most stringent applicable OSHA regulations and organization standards
- Whenever possible, de-energize electrical equipment before working on it
- Maintain required labels so they are legible and not handwritten
- Establish adequate arc flash and shock boundaries for electrical equipment
- Provide certified and adequate arc flash and shock PPE
- Write procedures for complex lockout/tagout
- Ensure employees are qualified for assigned tasks with evaluation and regular training

EMPLOYEE RESPONSIBILITIES

- Stay outside required arc flash and shock boundaries when electrical equipment is energized and not protected
- Properly store, maintain and inspect PPE before using
- Follow all procedures, and complete necessary work permits
- Do not work on electric equipment unless qualified to do so

TRAINING

Employees exposed to electrical hazards will receive adequate training according to this section so that they know the types of hazards that electrical energy creates. This also includes the NFPA 70E standard every 3 years and annual contact release training.

Employees responsible for responding to medical emergencies will receive annual training in first aid, emergency procedures, and cardiopulmonary resuscitation (CPR). If included in the emergency plan, employees will also receive annual automated external defibrillator (AED) training.

At least once a year, each employee will be reviewed and documented through training, supervision and inspections, that they are a qualified employee and working safely. A qualified person demonstrates the necessary skills and knowledge related to the task, and received safety training so they can recognize and avoid the hazards. The minimum training elements listed in the NFPA 70E are:

- Capable of distinguishing between exposed electrical conductors and other parts
- Determine nominal voltage of exposed energized electrical conductors and the use of appropriate test equipment
- Identify approach distances specified in the NFPA 70E and corresponding voltages to which the qualified person will be exposed
- Can make the decisions to safely: perform the job safety planning; identify electrical hazards; assess the associated risk; and select the most appropriate method to control the hazards

RETRAINING

Solomon Corporation will retrain workers at least every three years and when: they don't follow the safe work practices; when work practices change for reasons like new technology or new equipment; and before the worker has to do a task that is performed less than once a year.

All initial and retraining will be documented for the duration of the employee's tenure.

PROCEDURES

The first option for working on energized electrical equipment will to shut it off, de-energize it, lock it out, and verify it is locked out. All equipment will be treated as it is energized until it's proven de-energized. This means wearing the appropriate PPE while verifying the equipment.

Portable powered equipment will have a Ground Fault Circuit Interrupter (GFCI) whenever possible and if not possible, an Assured Equipment Grounding Conductor Program (AEGCP) will be followed.

Spaces with electrical hazards need to be lit with enough light for employees to work safely before they enter.

EQUIPMENT LABELS

The company will ensure the proper label information is in good readable condition on all non-residential switchboards, panelboards, industrial control panels, meter socket enclosure and motor control centers. Labels will have the nominal system voltage, arc flash boundary, and at least one of the following: available incident energy and its working distance or the arc flash PPE category from the appropriate table; minimum arc rating of clothing; or site-specific level of PPE.

The labels will be updated as soon as a risk assessment proves inaccurate information.

ARC FLASH AND SHOCK BOUNDARIES

Shock (limited and restricted approach) and arc flash boundaries will be established for when equipment is uncovered and still energized. Qualified persons can cross these boundaries to perform tasks such as — testing, troubleshooting, and voltage measuring — if they follow the correct safety procedures, while unqualified persons must remain outside the boundaries. These boundaries can be set by either an arc flash and shock risk assessment that is documented by an authorized engineer or from the following NFPA 70E tables:

- Table 130.4(D)(a): Shock protection for alternating current
- Table 130.4(D)(b): Shock protection for direct current
- Table 130.7(C)(15)(A)(b): Arc flash boundary for alternating current
- Table 130.7(C)(15(B): Arc flash boundary for direct current

The limited approach shock boundary requires workers to be trained according the Training section and be qualified to do the job to enter and carry out work like: testing, troubleshooting, and measure voltage.

The restricted approach shock boundary requires qualified workers entering the boundary to:

- Have a documented plan approved by management
- Use appropriate PPE
- Keep as much of the body out of the restricted space, using only protected body parts
- Ensure they are properly insulated from live parts and conductive objects before taking a conductive object into the boundary

The arc flash boundary is where incident energy equals 1.2 cal/cm^2. The boundary can be determined by the NFPA 70E tables as long as the task is listed in the table and isn't less than the minimum working distance; and the power system or maximum fault clearing times don't exceed the table. Inside the boundary, exposed skin is not allowed; PPE must be arc flash rated; and, workers need to be electrically isolated from conductive tools or materials.

COMMUNICATING PROCEDURES AND HAZARDS

The host and contract employer will communicate work rules and procedures so that employees of all employers are protected from electrical hazards. All employees will know how to safely work with the elements of the host employer's installation, especially: nominal voltage of lines and equipment, maximum switching of transient voltages, hazardous induced voltages, protective grounds, equipment grounding conductors, circuits of equipment, electric supply and communication lines, and fire-protective signaling circuits.

The host employer will communicate to other employers: known conditions, electrical hazards, and installation information that is — known by the host employer, requested by the contract employer, and related to protecting the contract employer's responsibilities — needed for hazard assessments. Such as: the condition of poles, environmental condition, arc hazard incident heat energy estimates, unique conditions posed by the contract employer's work, and worker violations noticed by the host employer.

The contract employer is responsible for communicating to the host employer — within two working days — unique hazards found or created by the contract employer while working that they were not already told about, along with the steps taken to correct standard violations and keep it from happening again.

PERSONAL PROTECTIVE EQUIPMENT

Solomon Corporation will provide necessary protective clothing and equipment that meet the arc flash and electric shock requirements.

Employees who may be exposed to flames or electric arcs will wear an outer flame resistant layer and not wear any clothing that could melt onto their skin or ignite and continue to burn when exposed to flames or the possible heat energy.

ARC FLASH PPE

Arc flash protective clothing must cover all body parts and ignitable clothing within the boundary and allow movement and visibility. Hair and beard nets must be flame-resistant and non-melting. Face shields and hoods must have a satisfactory arc rating (AR), and eye protection must be worn under face shields/hoods.

Arc flash PPE needs to be stored, maintained and inspected by a qualified before using.

The PPE arc flash rating must meet the required category for that boundary. Any work that involves PPE at or above 40 cal/cm2 is considered too dangerous to be completed energized and the equipment must be de-energized. Adequate PPE must still be worn while verifying de-energization.

Unless they are documented in an arc flash risk assessment by a qualified engineer, the arc flash PPE requirements will be determined by the following tables in the NFPA 70E:

- 130.7(C)(15)(A)(a) Arc Flash Hazard Identification (for alternating and direct currents)
- 130.7(C)(15)(A)(b) Arc Flash Hazard PPE Categories for Alternating Currents
- 130.7(C)(15)(B) Arc Flash Hazard PPE Categories for Direct Currents
- 130.7(C)(16) Personal Protective Equipment (PPE)

PPE Category	Cal/cm^2
1	1.2 – 4
2	4 – 8
3	8 – 25
4	25 - 40

SHOCK PPE

Rubber insulating gloves are rated for the voltage exposure, and need to be laboratory tested and certified no more than one year before they are first used, and then retested electrically every six months. Rubber insulating gloves provide the shock protectors and leather protectors provide the arc flash protection. When within the arc flash and electric shock boundaries the gloves must be paired with leather protectors, unless the requirements of ASTM F496 are met.

Gloves and other shock PPE need to be properly stored and maintained and inspected by a qualified user right before usage, and right after any incident.

Class	Volts
00	Up to 500
0	Up to 1,000
1	Up to 7,500
2	Up to 17,000
3	Up to 26,500
4	Up to 36,000

PERSONAL SAFETY AND PROTECTIVE EQUIPMENT

Test equipment – multi-meters, electrical leads, proximity testers – will be rated for the circuits and equipment they are to be connected too. To check they are working properly, test equipment will also be checked against a known voltage source to ensure it is working before and after determining a part is de-energized. Also a second method will be used – listen to transformer, check lights, try equipment to confirm de-energization.

Calibration and Testing: analog equipment – six months; digital equipment – 12 months; torque wrenches – 12 months; insulated tools – 24 months. Safety grounds will be checked before each use and installed with hot sticks while wearing PPE.

Shock protective tools and equipment will be inspected before every use, looking for damage to the insulation that prevents it from working correctly, or could add to the risk. Electrical and safety equipment will meet the ANSI and ASTM standards.

LOCKOUT/TAGOUT

Complex lockout/tagout procedures need a lockout/tagout permit that has:

- Date and time of work
- Qualified person in charge
- Contact information
- Procedures
- Work to be performed
- Processes and employees affected
- How equipment will be returned to normal operation

The qualified person in charge is responsible for safely carrying out the permit. A lockout/tagout procedure is considered complex if one of the following conditions exist:

- Multiple energy sources
- Multiple crews (e.g. new workers)
- Multiple crafts
- Multiple locations
- Multiple employers
- Multiple disconnecting means
- Particular sequences that can’t be deviated from (e.g. unique disconnecting means, complex switching sequences)
- Job or task continues for more than one work period (e.g. shift, day)

Energized Work Permits

Only qualified employees can work on energized equipment. An energized work permit will be completed before starting any work on energized equipment including an explanation why the equipment can't be de-energized, signed by a qualified person. Work that doesn't require an energized work permit is: voltage or current testing, electrical troubleshooting, infrared thermography, and visual inspections where the plane of the cover will not be breached.

The energized work permit will include documentation of a job briefing before the job where the employee in charge will discuss with affected workers the: relevant hazards, work procedures, special precautions, energy source controls, PPE requirements, and other information on the permit.

Maintenance and Housekeeping

Electrical equipment will be maintained in good condition; covers and doors will remain in place with all fasteners and latches secure; and single-line diagrams of the electrical system will remain legible and current.

POLICY

Solomon Corporation has implemented this policy to ensure no employee is exposed to noise that exceeds the action levels. Corporate EH&S Manager Mike Dahl is the designated supervisor for ensuring the following engineering controls and work practices will be enforced:

Hearing protectors are available upon request from Corporate EH&S Manager Mike Dahl at no cost to all employees exposed to an 8-hr. time-weighted average of 85 decibels. Hearing protection will be replaced as necessary. Each employee will be properly trained in the use, care, and fitting of hearing protectors. Corporate EH&S Manager Mike Dahl will ensure that hearing protectors are worn. Employees will be given the opportunity to select their hearing protectors from a variety of suitable hearing protectors.

Solomon Corporation will provide a continuing effective hearing conservation program when employees are exposed to sound levels greater than 85 dBs on an 8 hour time-weighted average basis.

When information indicates that employee exposure may equal/exceed the 8 hr time-weighted avg. of 85 decibels, Corporate EH&S Manager Mike Dahl will implement a monitoring program to identify employees to be tested.

TRAINING

Upon initial hiring, all employees who are exposed to action level noise will be trained in the hazards presented by excessive noise levels in the workplace, and the use and care of hearing protection devices. Training will be repeated annually for each employee and updated to reflect changes in personal protective equipment (PPE) and work processes or requirements. *Corporate EH&S Manager Mike Dahl* will make copies of the noise exposure procedures available to affected employees and will also post a copy in the workplace and allow OSHA access to records.

HEARING PROTECTION

Hearing protectors are available upon request from Corporate EH&S Manager Mike Dahl at no cost to all employees exposed to an 8-hr. time-weighted average of 85 decibels. Hearing protection will be replaced as necessary. Each employee will be properly trained in the use, care, and fitting of hearing protectors. *Corporate EH&S Manager Mike Dahl* will ensure that hearing protectors are worn. Employees will be given the opportunity to select their hearing protectors from a variety of suitable hearing protectors.

Corporate EH&S Manager Mike Dahl will ensure that hearing protectors are worn:

- By an employee who is required by paragraph (b)(1) of this section to wear personal protective equipment; and
- By any employee who is exposed to an 8-hour time-weighted average of 85 decibels or greater, and who:
  - Has not yet had a baseline audiogram established pursuant to paragraph (g)(5)(ii); or
  - Has experienced a standard threshold shift

AUDIO MONITORING

Audio monitoring will be implemented if it is believed noise levels in work areas are approaching or exceed action level limits. If monitoring results indicate exposures equaling or exceeding safe limits, an employee will be included in a hearing conservation program.

All continuous, intermittent, and impulsive sound levels from 80 decibels to 130 decibels shall be integrated into the noise measurements. Instruments used to measure employee noise exposure shall be calibrated to ensure measurement accuracy.

Monitoring shall be repeated whenever a change in production, process, equipment or controls increases noise exposures to the extent that:

- Additional employees may be exposed at or above the action level; or
- The attenuation provided by hearing protectors being used by employees may be rendered inadequate to meet the requirements

Employee notification. The employer shall notify each employee exposed at or above an 8-hour time-weighted average of 85 decibels of the results of the monitoring.

Observation of monitoring. The employer shall provide affected employees or their representatives with an opportunity to observe any noise measurements conducted pursuant to this section.

When employees are subjected to sound exceeding those listed in the below table, feasible administrative or engineering controls shall be utilized. If such controls fail to reduce sound levels within the levels of table, personal protective equipment shall be provided and used to reduce sound levels within the levels of the table.

DURATION OF EXPOSURE	SOUND LEVEL
8 hours	90 decibels
6 hours	92 decibels
4 hours	95 decibels
3 hours	97 decibels
2 hours	100 decibels
1.5 hours	102 decibels
1 hour	105 decibels
30 minutes	110 decibels
15 minutes	115 decibels

METHODS OF CONTROL

All monitoring results shall be reviewed by the site safety representative. Upon receiving results that indicate noise levels to be above the action level, the site safety representative shall determine which of the following control methods shall be utilized to reduce or eliminate the hazard:

- Corporate EH&S Manager Mike Dahl shall first determine if any means of engineering the problem out are possible. Some of these means may include such things as eliminating the job all together, shortening the length of the job, or installing barriers to reduce noise levels
- If engineering controls are not feasible, then administrative controls shall be taken into consideration. This type of control would include such activity as using job rotation
- Only when it is not feasible for management to implement a type of engineering or administrative control will PPE be used as the primary control method

AUDIOMETRIC TESTING

Corporate EH&S Manager Mike Dahl will maintain an audiometric testing program by making audiometric testing available to all employees whose exposures equal or exceed an 8-hr. time-weighted avg. 85 decibels. The program is provided at no cost to employees.

Within 6 months of an employee's first exposure at or above the action level, Solomon Corporation shall establish a valid baseline audiogram against which future audiograms can be compared. When a mobile van is used, the baseline shall be established within 1 yr.

Testing to establish a baseline audiogram will be preceded by at least 14 hours without exposure to workplace noise. Hearing protection may be used to meet the requirement. Employees will also be notified to avoid high levels of noise.

At least annually after obtaining the baseline audiogram, Corporate EH&S Manager Mike Dahl will obtain a new audiogram for each employee exposed at or above an 8-hour time-weighted average of 85 decibels. Each employee's annual audiogram shall be compared to that employee's baseline audiogram to determine if the audiogram is valid and if a standard threshold shift has occurred. If a comparison of the annual audiogram to the baseline audiogram indicates a standard threshold shift, the employee shall be informed of this fact in writing, within 21 days of the determination.

If a standard threshold shift occurs, use of hearing protection shall be re-evaluated and/or refitted and if necessary a medical evaluation may be required. The following procedures will be implemented:

- Employees not using hearing protectors will be fitted with hearing protectors, trained in their use and care, and required to use them
- Employees already using hearing protectors will be refitted and retrained in the use of hearing protectors and provided with hearing protectors offering greater attenuation if necessary
- Employees will be referred for a clinical audiological evaluation or an otological examination, as appropriate, if additional testing is necessary or if it is suspected that a medical pathology of the ear is caused or aggravated by the wearing of hearing protectors
- Employees will be informed of the need for an otological examination if a medical pathology of the ear that is unrelated to the use of hearing protectors is suspected
- Audiometric evaluation and testing conducted by a licensed physician using the guidelines contained in §1910.95 (g), and is available to all employees whose work requirements equals or exceeds an 8 hr. time-weighted average 85 decibels on a regular basis at no cost to the employee.

Hearing protection is available at no cost to all employees upon request from the jobsite foreman or company office.

RECORDKEEPING

Solomon Corporation will keep all records collected by this policy, and specifically maintain noise exposure measurement records for at least two years and audiometric test records for the entire length of each employee’s employment.

These records will also be transferred to any successor employer if Solomon Corporation ceases to do business.

POLICY

Solomon Corporation has adopted this policy to inform employees of the Drug and Alcohol Policy. This ensures the safety and health of the employees.

Corporate EH&S Manager Mike Dahl is responsible for ensuring that the following policy is enforced.

DRUG AND ALCOHOL TESTING

It is the policy of Solomon Corporation that drug and alcohol testing will occur at pre-employment, post-accident, or at random, and will be conducted by only a laboratory certified by the U.S. Department of Health and Humans Services (HHS) under the National Laboratory Certification Program (NLCP).

Employees with unacceptable test results will not be allowed to work at the worksite or facility.

PRE-EMPLOYMENT TESTING PROCEDURES

Any offer of employment is deemed conditional upon the potential employee having a negative test result for drugs.

Pre-employment drug testing shall be scheduled by the hiring supervisor directly with the third-party service provider immediately upon acceptance by the candidate of a conditional offer of employment. Testing should be done in a location most likely to ensure timely receipt of the results. Pre-employment test results will be reported by the Medical Review Officer.

REASONABLE-SUSPICION TESTING PROCEDURES

Any competent person may require any employee to be tested for Alcohol or Drugs and must tell the employee beforehand why the test is being requested. Any employee who refuses a request to be tested is in breach of this policy and may be subject to disciplinary action that may include termination of employment.

When testing for either alcohol or drugs is to occur, *Corporate EH&S Manager Mike Dahl* will direct the employee to a sample collection site designated by a third-party service provider and provide transportation to the site. At Solomon Corporation*'s* discretion, a qualified technician may be brought to the worksite to conduct the testing.

POST-INCIDENT TESTING PROCEDURES

In the event of an accident, injury or other work-related incident, the employee(s) involved will be required to submit to a drug and alcohol test to determine if the incident is a result of impairment.

Any employee who refuses a request to be tested is in breach of this policy and may be subject to disciplinary action that may include termination of employment

REASONABLE-CAUSE TESTING PROCEDURES

Should a competent person deem it to be necessary, the employee(s) who has shown reasonable cause (or reasonable suspicion) shall submit a drug and alcohol test to ensure that they are not under the influence and do not have any type of prohibited drug in their system. Any employee who refuses a request to be tested is in breach of this policy and may be subject to disciplinary action that may include termination of employment.

RANDOM DRUG AND ALCOHOL TESTING

Solomon Corporation will conduct a number of random tests each calendar year that meets or exceeds 25 percent of covered employees.

Solomon Corporation may use a third-party administrator to manage all aspects of the random testing program.

All covered employees will be placed into a random selection pool. Covered employees will remain in the random selection pool at all times, regardless of whether or not they have been previously selected for testing. The selection of employees will be made by using a computer-based, scientifically valid method (e.g., random number generator or equivalent random selection method) that is matched with an employee's social security number or employee ID number.

All covered employees will have an equal chance of being selected for testing.

Random testing will occur on a quarterly basis. Prior to selection, Corporate EH&S Manager Mike Dahl must ensure that the random testing pool has been updated to include all current covered employees.

The number of tests to be conducted will be based on the number of covered employees at the beginning of each quarter’s test cycle. The random selection procedure will compile a list of employees to be tested in each testing cycle. The number of employees selected must be sufficient to meet the minimum number of required tests. The selected employee list will be will be kept in a secure location until the time of testing, at which the list will be provided to the appropriate supervisor, who will, in turn, notify the employee(s) to report for testing.

Random testing is unannounced, and employees are notified that they have been selected for testing only after they have reported for duty on the day of collection. Specimen collection will be conducted on different days of the week throughout each test cycle to prevent employees from matching their drug-use patterns to the schedule for collection. Random drug tests are normally unobserved by the collector. However, provisions will be available at the collection site for a directly observed collection to take place should circumstances require such action.

Once notified by the appropriate Company official, employees will be instructed to report immediately to the collection site.

POLICY

Solomon Corporation has implemented this safety program to ensure the protection of personnel from hazards on the job which may be safeguarded against by the proper use of Personal Protective Equipment (PPE).

Corporate EH&S Manager Mike Dahl is the supervisor responsible for ensuring the following work practices are enforced.

PPE will be provided for all work required by Solomon Corporation and employees are required by company policy to use only proper company PPE at all times when required on the job or on company property. Failure to use PPE will result in disciplinary action against the violating employee.

- Corporate EH&S Manager Mike Dahl will ensure that if employee-owned PPE is used, Solomon Corporation is responsible that it will be adequate for the application, properly maintained, and kept in sanitary condition
- PPE will be issued and fitted to each affected employee individually. Employees must demonstrate proficiency in donning and doffing equipment, and proper techniques of cleaning and maintaining their respective equipment
- Defective or damaged PPE will NOT be used. Defective or damaged PPE will be immediately tagged “OUT OF SERVICE”, removed from service, and replaced with serviceable equipment. PPE will be inspected by the individual employee at the beginning of each work shift
- PPE must be used, stored, and maintained in a sanitary condition. All PPE must be cleaned and/or disinfected and stored according to manufacturer’s recommendations

TRAINING

Corporate EH&S Manager Mike Dahl will ensure all employees are properly trained in the recognition and assessment of hazards, the proper selection and use of PPE required for the hazard and how to control the hazards.

PPE training will include when it is necessary; what is necessary; how to don, doff, adjust, and wear PPE; the limitations, proper care, maintenance, useful life and disposal of PPE.

Retraining of employees is required when the workplace changes, making the earlier training obsolete; the type PPE changes; or when the employee demonstrates lack of use, improper use, or insufficient skill or understanding.

Employees will be trained on initial hiring to use, maintain, clean and disinfect, store, and service PPE properly. Employees will receive refresher training on PPE at least annually, or as work requirements, changing job assignments, changing equipment, or environment warrants it. Any employee who demonstrates a lack of knowledge or understanding of any aspect of PPE use or maintenance will be re-trained. An employee must verify his/her understanding of training content as a condition of employment.

All training will be documented and will include the employee name, the dates of training, and the certification subject.

HAZARD ASSESSMENT

Corporate EH&S Manager Mike Dahl will perform a hazard assessment of each jobsite prior to commencement of work to ascertain if hazards are present or likely to be encountered, what engineering controls may be implemented to minimize hazards, and what PPE is necessary for the performance of the job. The hazard assessment will include the certifier's name, signature, date(s), and identification of assessment documents. Affected employees will be notified of hazards, engineering controls needed, and PPE required.

GENERAL REQUIREMENTS

PPE devices should be relied on as the final protection against hazards, used in conjunction with guards, engineering controls, and sound manufacturing practices. It is necessary to consider certain general guidelines for assessing the foot, head, eye and face, and hand hazard situations that exist in an occupational operation or process, and to match the protective devices to the particular hazard. It is the responsibility of Corporate EH&S Manager Mike Dahl to exercise common sense and appropriate expertise to accomplish these tasks.

After completion of a Hazard Identification and Risk Assessment, the general procedure for selection of protective equipment is to:

- Become familiar with the potential hazards and the type of protective equipment that is available, and what it can do; i.e., splash protection, impact protection, etc
- compare the hazards associated with the environment; i.e., impact velocities, masses, projectile shape, radiation intensities, with the capabilities of the available protective equipment
- select the protective equipment which ensures a level of protection greater than the minimum required to protect employees from the hazards
- fit the user with the protective device and give instructions on care and use of the PPE. It is very important that end users be made aware of all warning labels for and limitations of their PPE

PERSONAL WORK CLOTHING

The minimum work clothing acceptable is long pants, good work shoes or boots, and a shirt that completely covers the worker's shoulders (minimum 4-inch sleeves) and provides adequate protection against such hazards as concrete splash, abrasions to the skin, oil or grease spills, and slag from welding or cutting.

Welders should be cautioned against wearing any type of highly flammable clothing, such as polyesters, double-knits, etc. Wool and specially treated cotton are two natural fibers that are fire-resistant and comfortable. Heat-resistant material, such as leather, is used to protect against dry heat, flames, and molten material. Fire-resistant clothing also protects from high workplace temperature and electrical operations

For the most part, construction workers should wear clothing that is reasonably snug, particularly about the neck, wrists, and ankles. Employees shall not wear loose clothing, rings, watches, necklaces or long hair, all of which may catch in power driven equipment.

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

Arc rated clothing shall be worn during work activities that have been identified to present an arc flash potential. The clothing will be rated for the arc flash potential of the task. Such clothing may include long sleeved FR shirts, FR pants, face shield, and appropriate class rubber gloves. The employee shall not wear synthetic fiber clothing under Fire Resistant clothing. Refer to the Electrical Safety and Arc Flash policy for clothing required for arc flash potential posed by the task and equipment.

EYE AND FACE PROTECTION

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

Eye or face protection shall comply with American National Standards Institute (ANSI) Z87.1. If you have questions about eye or face protection ask your supervisor or refer to the manufacture instructions.

FOOT & LEG PROTECTION

Most foot injuries occur from employees not wearing protective footwear. The typical foot injury is caused from objects falling fewer than 4 feet. For protection from falling or rolling objects, sharp objects, molten metal, hot surfaces, and slippery surfaces, employees shall use appropriate foot guards, steel toe safety shoes, steel toe safety boots, metatarsal guards and leggings. Leggings protect the lower leg and feet from molten metal and welding sparks.

Leather work shoes/boots are required and safety shoes are recommended for use by all employees. Safety shoes should be sturdy, have an impact resistant toe, and have puncture resistant soles. Protective footwear shall comply with ANSI Z41-1991.

When working with wet concrete, workers shall wear rubber boots.

Shoes and boots shall be kept in good repair, and those with worn heels of thin or worn soles should not be permitted. In addition, the wearing of sneakers, sandals, or shoes that have been slit or have holes cut in them, shall not be permitted.

HAND & ARM PROTECTION

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

Employees who are required to operate or work around drill presses, power saws, and similar rotating machinery shall not wear gloves.

Special type gloves such as neoprene or rubber to handle chemicals shall be issued to those employees who have a need for them. Welders shall wear gloves during settling operations.

HEAD PROTECTION (HARD HATS)

Employees shall wear protective helmets when working in areas where there is a potential for injury to the head from falling objects. Protective helmets designed to reduce electrical shock hazard shall be worn by each such affected employee when near exposed electrical conductors which could contact the head.

All employees that wear company issued hard hats shall wear them at all times when working on construction projects or areas of an existing facility, which has been designated as a "Hard Hat Area." This includes visitors, subcontractors, engineers, inspectors, and anyone else who has authorization to be on the project site.

Head protection shall be worn properly with the *brim in front*. Hard hats which have been altered by drilling or cutting will not be permitted, nor will those hats which have been altered by the addition of any items on the outside of the hat other than safety, or site stickers. When it is necessary to use additional personal protective equipment, which shall be attached to the hard hat, only those hard hats designed for this purpose may be used.

Protective hard hats shall meet ANSI requirements Personal Protection-Protective Headgear for Industrial Workers Z89.1-1986. Electrical workers shall wear hard hats that are rated for the voltage of the equipment where work is being performed.

RESPIRATORY PROTECTION

Company issued respiratory protective devices, appropriate for the hazard, shall be used where airborne contaminates, such as fibers, dust, smoke, vapors, and mists exist and may exceed acceptable levels. Respiratory protective devices shall be used in accordance

HEARING PROTECTION

Hearing protection shall be worn in areas that exceed 85 dBA. Refer to 28, Occupational Noise Exposure Program.

FULL BODY HARNESS AND LANYARDS

Harnesses with lanyards in use, shall be worn by all employees who are working at elevated levels which are not protected by standard handrails, or when working from suspended scaffolds. Employees are required to wear and use full body harnesses to protect them from falling when they are exposed to falls from heights of six feet or more. If they are working on powered platforms or over machinery, moving equipment or objects posing an impalement hazard, or in the case of entering a confined space, with an attended lifeline, 100% full protection is required. This might include the need for two lanyards per belt. All harnesses and lanyards shall be inspected and each inspection documented with the harness serial number. Inspections shall be performed by supervision. Quick release belts shall only be used when working over bodies of water. Lanyards shall have locking snaps that require two actions to open. Refer to the Fall Protection Program for complete requirements.

FLOTATION VESTS

US Coast Guard approved flotation vests shall be worn by all employees when working on barges, floating pipelines or plants, or on structures extending over water, that are not protected by adequate standard handrails. In addition, any employee who is working over the side of a vessel or structure, which is extended over water, or, in any area where a drowning hazard exists, shall wear an approved flotation vest.

TRAFFIC VESTS

Employees shall wear, as a minimum, an ANSI Class II fluorescent orange or lime traffic safety vest when working within 15 feet of a roadway or in a parking lot. Vests shall also be used when directing traffic on a construction site.

POLICY

Solomon Corporation has implemented this policy to prevent or minimize the consequences of catastrophic releases of toxic, reactive, flammable, or explosive chemicals, and to ensure no employee is exposed to toxic or hazardous material at levels above the permissible exposure limits.

REFERENCES

- §1910.119 – Process Safety Management of Highly Hazardous Chemicals
- §1910.1200 – Hazard Communication Standard

RESPONSIBILITIES

EMPLOYER RESPONSIBILITIES

- Developing a written plan of action to implement employee participation required by PSM
- Consulting with employees and their representatives on the conduct and development of the process hazard analysis (PHA) and on the development of the other elements of process management
- Training each employee presently involved in operating a process or a newly assigned process in an overview of the process and in its operating procedures
- Responding quickly to eliminate workplace hazards
- Ensuring all equipment is kept in good repair
- Ensuring employees follow safe job procedures
- Reviewing process hazard analysis whenever there is a significant change to any element of the job or there has been an injury or illness
- Teach employees about the hazards of their jobs, specifically any: potential fire, explosions, or toxic release

SAFETY COMMITTEE RESPONSIBILITIES

- Assist in process hazard analyses as necessary
- Assist in training employees to recognize and control workplace hazards
- Monitor the workplace for hazards
- Encourage employees to report hazards
- Implement appropriate controls
- Ensure corrective action is taken promptly

EMPLOYEE RESPONSIBILITIES

- Assist in process hazard analyses
- Follow safe job procedures
- Report hazards to a supervisor immediately

TRAINING

Employees will be told that the purpose of PSM is to prevent or minimize consequences of catastrophic releases of toxic, reactive, flammable, or explosive chemicals in various industries such as refineries, etc. Each employee will be trained in the overview of the process and its operating procedures for every process they are involved in or newly assigned to. The training will emphasize the process's specific safety and health hazards, emergency operations, shutdown, and other applicable safe work practices.

Solomon Corporation will document the identity of the employee (permanent or contract), the date of training, and the means used to verify that the employee understood the training.

Hazard communication will cover known workplace hazards, including how to avoid and abate them. Solomon Corporation employees are required to abide by all company safety policies, procedures, and their supervisor's instruction. Contract employees must be advised of all hazards to which they may be exposed in the workplace.

PROCEDURES

PROCESS SAFETY INFORMATION

Corporate EH&S Manager Mike Dahl will compile all written process safety information before conducting any PHA. The compilation should be completed under the same schedule required for the PHA. The PHA will include information on: the hazards of the chemicals used or produced by the process; the technology of the process; the equipment in the process.

Safety Data Sheets (SDS) meeting the Hazard Communication Standard requirements may be used to comply with information on the hazards requirement to the extent they contain the required information.

PROCESS HAZARD ANALYSIS

Prior to starting work, Corporate EH&S Manager Mike Dahl, or a designated alternative/team, will perform a job hazard assessment (PHA) of the worksite. Immediately upon completion of the hazard assessment, Corporate EH&S Manager Mike Dahl will make their customer, employer, or owner of the host facility / jobsite aware of any hazards identified and unique hazards presented by work being performed by Corporate EH&S Manager Mike Dahl.

The PHA will focus on equipment, instrumentation, utilities, human actions (routine and non-routine), and external factors that might impact the process. The PHA team will determine and document the priority order for conducting PHAs that includes such considerations as the extent of the process hazards, the number of potentially affected employees, the age of the process, and the operating history of the process.

STANDARD OPERATING PRACTICES (SOPS)

Operating procedures describe tasks to be performed, data to be recorded, operating conditions to be maintained, samples to be collected, and safety and health precautions to be taken. The procedures will be accurate, understandable to employees, and revised periodically to ensure that they reflect current operations. Corporate EH&S Manager Mike Dahl will use the process safety information package as a resource to better ensure that the operating procedures and practices are consistent with the known hazards of the chemicals in the process and that the operating parameters are accurate.

SOPs will be written so that an experienced operator not familiar with a particular process unit could run the unit with minimal supervision or help from other operators, or the least experienced operator released for unsupervised work could run the unit.

Solomon Corporation employees will abide by employers safety work practices during operations such as lockout/tagout, confined space entry, opening process equipment or piping and controls over entrance to facility.

PRE-START-UP SAFETY REVIEW

The initial start-up procedures and normal operating procedures need to be fully evaluated by Corporate EH&S Manager Mike Dahl and the work team as part of the pre-start-up review to ensure a safe transfer into the normal operating mode for meeting the process parameters. Piping and instrument diagrams (P&IDs) are to be completed along with having the operating procedures in place and the operating staff trained to run the process before start-up. Any incident investigation recommendations, compliance audits, or PHA recommendations need to be reviewed as well to see what impacts they may have on the process before beginning the start-up.

MECHANICAL INTEGRITY PROGRAM

Corporate EH&S Manager Mike Dahl will establish and implement written procedures to maintain the ongoing integrity of process equipment. Elements of a 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, the establishment of criteria for acceptable test results, documentation of test and inspection results, and documentation of manufacturer recommendations as to meantime to failure for equipment and instrumentation.

HOT WORK PERMIT

A permit must be issued by Corporate EH&S Manager Mike Dahl for hot work operations conducted on or near a covered process. The permit must document that the fire prevention and protection rules for welding, cutting, and brazing have been implemented before beginning. It must also indicate the authorized dates and identify the object to be worked on.

MANAGEMENT OF CHANGE

Corporate EH&S Manager Mike Dahl will prepare written procedures to manage changes (except for “replacements in kind”) to process chemicals, technology, equipment, operating procedures, and facilities that affect a covered process. Changes in documents, such as P&IDs, raw materials, operating procedures, mechanical integrity programs, electrical classifications, etc., need to be noted so that these revisions can be changes need to be kept in an accessible location to ensure that design changes are available to operating made permanent when the drawings and procedure manuals are updated. Copies of process personnel as well as to PHA team members when a PHA is being done or one is being updated.

INCIDENT INVESTIGATION

Incident investigation is the process of identifying the underlying causes of incidents and implementing steps to prevent similar events from occurring. The intent of an incident investigation is for employers to learn from past experiences and thus avoid repeating past mistakes. The incidents for which OSHA expects employers to become aware and to investigate are the types of that result in or could reasonably have resulted in a catastrophic release. Some of the events are sometimes referred to as “near misses,” meaning that a §1910.119 – consequence did not occur but could have.

All workers are required to report incidents and near misses to their supervisors. All incidents and near misses will also be immediately reported to the host employer.

EMERGENCY PLANNING AND RESPONSE

Address what actions employees are to take when there is an unwanted release of highly hazardous chemicals. Corporate EH&S Manager Mike Dahl will select how many different emergency preparedness procedures or lines of defense are needed and then develop the necessary plans and procedures, appropriately train employees in their emergency duties and responsibilities, and then implement these lines of defense.

COMPLIANCE AUDIT

Corporate EH&S Manager Mike Dahl or an assembled trained team of people will audit the PSM system and program. A small process or plant may need only one knowledgeable person to conduct an audit. The audit is to include an evaluation of the design and effectiveness of the PSM system and a field inspection of the safety and health conditions and practices to verify that the employer's systems are effectively implemented. The audit should be conducted or lead by a person knowledgeable in audit techniques and impartial toward the facility or area being audited. The essential elements of an audit program include planning, staffing, conducting the audit, evaluation and corrective action, follow-up, and documentation.

TRADE SECRETS

Solomon Corporation employees are instructed in the confidentiality of trade secret information, and the disciplinary action which will be a consequence of violation of confidentiality.

CONTRACTORS

When Solomon Corporation is the contractor*:*

- Solomon Corporation employees will abide by employers safety work practices during operations such as lockout/tagout, confined space entry, opening process equipment or piping and controls over entrance to facility.
- Solomon Corporation employees will not perform hot work until a hot work permit is obtained from Solomon Corporation's employer and/or the owner of the host facility / jobsite. The permit will document that provisions of §1910.252(a) have been met.
- Solomon Corporation will respect the confidentiality of trade secret information when the process safety information is released to them.
- Solomon Corporation will tell the employer of any hazards it found or created in the course of the work.

Solomon Corporation will develop a written procedure for managing contractors that perform maintenance or repair, turnaround, major renovation, or specialty work on or adjacent to a covered process. Such procedures will not apply to contractors providing incidental services that do not influence process safety, such as janitorial, food and drink, laundry, delivery, or other supply services. Ensure that each contract employee is trained in the work practices necessary to safely perform his or her job

Corporate EH&S Manager Mike Dahl will ensure 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.

POLICY

Solomon Corporation has implemented this policy to ensure that no employee is exposed to airborne hazards in the workplace exceeding Permissible Exposure Limits (PEL), or oxygen deficient atmospheres. Solomon Corporation will provide respirators which are applicable and suitable for the purpose intended when such equipment is necessary to protect the health of our employees. Specifically when workers may be exposed to harmful vapors and oxygen deficient atmospheres. This Respiratory Protection Program provides training, medical evaluations, and respirators at no cost to our employees.

Corporate EH&S Manager Mike Dahl is the supervisor responsible for ensuring the following training, administrative controls, engineering controls, and safe work practices are enforced:

Corporate EH&S Manager Mike Dahl is responsible for administrating the Respiratory Protection Program its recordkeeping and periodic evaluation. The evaluation will be based on results of the air quality monitoring program, medical evaluations, changing work environment, equipment changes, work requirements, and employee responses. Respiratory equipment will be National Institute of Occupational Safety and Health (NIOSH) certified only, and selection will be made by Corporate EH&S Manager Mike Dahl, based on identified and potential hazards, estimated exposures, and contamination information.

In any workplace where respirators are necessary to protect the health of our employees, Solomon Corporation has established and implemented this written Respiratory Protection Program with worksite-specific procedures. This program will be updated as necessary to reflect any changes in workplace conditions that affect respirator use.

The Respiratory Protection Program includes the following elements:

- Procedures for selecting respirators for use in the workplace
- Medical evaluations of employees required to use respirators
- Fit testing procedures for tight-fitting respirators
- Procedures for proper use of respirators in routine and reasonably foreseeable emergency situations
- Procedures and schedules for cleaning, disinfecting, storing, inspecting, repairing, discarding, and otherwise maintaining respirators
- Procedures to ensure adequate air quality, quantity, and flow of breathing air for atmosphere-supplying respirators
- Training of employees in the respiratory hazards to which they are potentially exposed during routine and emergency situations
- Training of employees in the proper use of respirators, including putting on and removing them, any limitations on their use, and their maintenance
- Procedures for regularly evaluating the effectiveness of the program

TRAINING

Corporate EH&S Manager Mike Dahl will ensure that effective training is initially provided to all employees who are required to use respirators. The training will be comprehensive, conducted in a manner that is understandable to our employees, and recur annually or more often if necessary. Before being allowed or required to wear breathing protection, each of our employees will be able to demonstrate knowledge of at least the following:

- Why the respirator is necessary and how improper fit, usage, or maintenance can compromise the protective effect of the respirator
- What the limitations and capabilities of the respirator are
- How to use the respirator effectively in emergency situations, including situations in which the respirator malfunctions
- How to inspect, put on and remove, use, and check the seals of the respirator
- Procedures for cleaning, maintenance, and storage of respirators
- How to recognize medical signs and symptoms that may limit or prevent the effective use of respirators
- The general requirements of §1910.134 – Respiratory Protection

Retraining will be administered annually or when the following situations occur:

- Changes in the workplace or the type of respirator render previous training obsolete
- Inadequacies in the employee's knowledge or use of the respirator indicate that the employee has not retained the requisite understanding or skill
- Any other situation arises in which retraining appears necessary to ensure safe respirator use

Solomon Corporation allows employees to wear respirators on a voluntary basis when not required by OSHA. When a filtering face piece respirator is all that is used, the employee must be provided a copy of Appendix D. A filtering facepiece respirator is defined in 29 CFR 1910.134(b) as “a negative pressure particulate respirator with a filter as an integral part of the facepiece or with the entire facepiece composed of the filtering medium. For all other voluntary users, the respiratory protection program that covers medical fitness and proper maintenance procedures will be implemented.

EVALUATION AND MONITORING

Workplace evaluations will be conducted as necessary to ensure that the provisions of the current Respiratory Protection Program are being effectively carried out and that it continues to be effective.

Employees required to use respirators will be regularly consulted to assess their views on program effectiveness and to identify any problems. Any problems that are identified during this assessment will be corrected. Factors to be assessed include, but are not limited to:

- Respirator fit, including the ability to use the respirator without interfering with effective workplace performance
- Appropriate respirator selection for the hazards to which the employee is exposed
- Proper respirator use under the workplace conditions the employee encounters
- Proper respirator maintenance

Corporate EH&S Manager Mike Dahl will ensure that all filters, cartridges and canisters used in the workplace are labeled and color coded with the NIOSH approval label and that the label remains legible and is not removed.

Proper respiratory equipment, replacement elements, and any parts or equipment necessary for the proper functioning of the respiratory equipment will be available to employees at no cost.

RESPIRATOR SELECTION, CARE AND MAINTENANCE

All respiratory protection equipment will be maintained, cleaned, stored, and serviced per manufacturer's recommendations. Job foremen will supervise and ensure proper methods are used.

Respirator selection will be based on the hazards that the worker is exposed. Only NIOSH-certified respirators will be provided. Hazard evaluation is based on the estimate of exposures, type of contaminant, physical form, and chemical state. For no exposure estimate or data, the exposures will be addressed as immediately Dangerous to Life & Health (IDLH) and NIOSH-approved respirators for full-faced, pressure demand 30 minute SCBA, or SAR with auxiliary air supply will be provided. Respirator brands and models will be listed below.

Respirator Models and Brand used by this Company		
Brand	**Model**	**I.D. Number**

Solomon Corporation will provide each respirator user with a respirator that is clean, sanitary, and in good working order. Corporate EH&S Manager Mike Dahl will ensure that respirators are cleaned and disinfected using the procedures in Appendix B-2 of §1910.134, or procedures recommended by the respirator manufacturer, provided that such procedures are of equivalent effectiveness. The respirators will be cleaned and disinfected at the following intervals:

- Respirators issued for the exclusive use of an employee will be cleaned and disinfected as often as necessary to be maintained in a sanitary condition
- Respirators issued to more than one employee will be cleaned and disinfected before being worn by different individuals
- Respirators maintained for emergency use will be cleaned and disinfected after each use
- Respirators used in fit testing and training will be cleaned and disinfected after each use

Corporate EH&S Manager Mike Dahl will ensure that respirators are stored as follows:

- All respirators will be stored to protect them from damage, contamination, dust, sunlight, extreme temperatures, excessive moisture, and damaging chemicals, and they will be packed or stored to prevent deformation of the facepiece and exhalation valve
- In addition to the above requirements, emergency respirators will be: kept accessible to the work area and stored in compartments or covers that are clearly marked as emergency respirators

Stored in accordance with any applicable manufacturer instructions.

Corporate EH&S Manager Mike Dahl will ensure respirators are inspected as follows:

- All respirators used in routine situations will be inspected before each use and during cleaning
- All respirators maintained for use in emergency situations will be inspected at least monthly and in accordance with the manufacturer's recommendations, and will be checked for proper function before and after each use
- Emergency escape-only respirators will be inspected before being carried into the workplace for use

Corporate EH&S Manager Mike Dahl will ensure respirator inspections include the following:

- A check of respirator function, tightness of connections, and the condition of the various parts including, but not limited to, the facepiece, head straps, valves, connecting tube, and cartridges, canisters or filters
- A check of elastomeric parts for pliability and signs of deterioration

In addition to the requirements above, self-contained breathing apparatus will be inspected monthly. Air and oxygen cylinders will be maintained in a fully charged state and will be recharged when the pressure falls to 90% of the manufacturer's recommended pressure level. *Corporate EH&S Manager Mike Dahl* will determine that the regulator and warning devices function properly.

For respirators maintained for emergency use, Corporate EH&S Manager Mike Dahl will:

- Certify the respirator by documenting the date the inspection was performed, the name (or signature) of the person who made the inspection, the findings, required remedial action, and a serial number or other means of identifying the inspected respirator
- Provide this information on a tag or label that is attached to the storage compartment for the respirator, is kept with the respirator, or is included in inspection reports stored as paper or electronic files. This information will be maintained until replaced following a subsequent certification

Corporate EH&S Manager Mike Dahl will ensure that respirators that fail an inspection, or are otherwise found to be defective, are removed from service and are discarded, repaired, or adjusted in accordance with the following procedures:

- Repairs or adjustments to respirators will be made only by persons appropriately trained to perform such operations and will use only the respirator manufacturer's NIOSH-approved parts designed for the respirator
- Repairs will be made according to the manufacturer's recommendations and specifications for the type and extent of repairs to be performed
- Reducing and admission valves, regulators, and alarms will be adjusted or repaired only by the manufacturer or a technician trained by the manufacturer

MEDICAL EVALUATION AND FIT TESTING

A medical examination for employees required to use respiratory equipment is required before use of the equipment, and will be provided at no cost to the employee. The medical questionnaire provided in Appendix C is mandatory for employees required to use respiratory protection.

Solomon Corporation will provide a medical evaluation to determine the employee's ability to use a respirator, before the employee is fit tested or required to use the respirator in the workplace. Solomon Corporation may discontinue an employee's medical evaluations when the employee is no longer required to use a respirator.

Periodic monitoring of the air quality in work areas will be performed to determine if, or where respiratory equipment will be required.

Corporate EH&S Manager Mike Dahl will maintain appropriate surveillance, and ensure employees leave the area to wash, change cartridges, or if they detect break-through or resistance.

MEDICAL EVALUATION PROCEDURES WILL INCLUDE:

Solomon Corporation will identify a physician or other licensed health care professional (PLHCP) to perform medical evaluations using a medical questionnaire or an initial medical examination that obtains the same information as the medical questionnaire.

The medical evaluation will obtain the information requested by the questionnaire in Sections 1 and 2, Part A of Appendix C of §1910.134.

Follow-up medical examination

Solomon Corporation will ensure that a follow-up medical examination is provided for an employee who gives a positive response to any question among questions 1 through 8 in Section 2, Part A of Appendix C or whose initial medical examination demonstrates the need for a follow-up medical examination

The follow-up medical examination will include any medical tests, consultations, or diagnostic procedures that the PLHCP deems necessary to make a final determination.

Administration of the medical questionnaire and examinations will include:

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

The following supplemental information will be provided to the PLHCP before the PLHCP makes a recommendation concerning an employee's ability to use a respirator:

- The type and weight of the respirator to be used by the employee
- The duration and frequency of respirator use (including use for rescue and escape)
- The expected physical work effort
- Additional protective clothing and equipment to be worn
- Temperature and humidity extremes that may be encountered

Solomon Corporation will provide the PLHCP with a copy of the written respiratory protection program and a copy of §1910.134.

FIT TESTING

Fit testing of the equipment to individual employees will follow OSHA guidelines listed in §1910.134 (f)(1-8) and is required before use of the equipment.

Solomon Corporation will ensure employees pass OSHA-accepted qualitative fit test (QLFT) or quantitative fit test (QNFT) of tight-fitting facepieces before initial use, if a different respirator is used, and annually. SARs are required to be fit tested as well. (Refer to the Appendices).

Facial hair, glasses, etc. which might affect the seal of the respirator facepiece are prohibited, and seal will be checked each time equipment is donned.

If employees are required to work in Immediately Dangerous to Life or Health (IDLH) atmospheres, the following procedures and controls will be in place:

- At least one employee is located outside the IDLH atmosphere
- Visual, voice, or signal line communication is maintained between the employee(s) in the IDLH atmosphere and the employee(s) located outside the IDLH atmosphere
- The employee(s) located outside the IDLH atmosphere are trained and equipped to provide effective emergency rescue
- Corporate EH&S Manager Mike Dahl is notified before personnel enter the IDLH atmosphere, or before employee(s) located outside the IDLH atmosphere enter the IDLH atmosphere to provide emergency rescue
- Employee(s) located outside the IDLH atmospheres will be equipped with:
  - Pressure demand or other positive pressure SCBA
  - Appropriate retrieval equipment for removing the employee(s) who enter(s) these hazardous atmospheres

SAR and SCBA equipment will only be filled by certified refilling facilities using grade D or better air. Oxygen will not be used in compressed air units and all cylinders will meet DOT requirements. Compressor will be located in a "clean" atmosphere, with in-line purification, and tagged to indicate date of change-out. A carbon monoxide monitor will be in place and set to alarm at 10 PPM or monitored frequently. All line fittings will be incompatible for non-respirable gases and containers.

Where possible, ventilation will be required for all enclosed work areas to ensure that airborne hazards do not exceed permissible limits. The least hazardous or toxic materials which will allow the job required to be accomplished will be used in the performance of work.

Solomon Corporation will maintain written records and information regarding medical evaluations, fit testing, and the Respiratory Protection Program. These records will promote employee involvement in the respirator program, assist in auditing the adequacy of the program, and provide a record for OSHA compliance. Records will be retained at the main office and be made available upon request to affected employees and to OSHA. Written records include the following:

- Required medical evaluations will be retained and made available in accordance with §1910.1020
- Qualitative and quantitative fit tests administered to an employee including: the name or identification of the employee tested; type of fit test performed; specific make, model, style, and size of respirator tested; date of test.
- The pass/fail results for qualitative fit tests or the fit factor and strip chart recording or other recording of the test results for quantitative fit tests
- Fit test records will be retained for respirator users until the next fit test is administered

Employee Acknowledgment

By my signature below, I acknowledge that I have received instruction and have read the Solomon Corporation Respiratory Protection Program. I have been given the opportunity to ask questions and have received answers, instruction, and clarification to my questions. I understand the contents of and agree to follow Solomon Corporation company policy regarding this Respiratory Protection Program.

Respiratory Protection Program received on _____ , 20 ___

_____
Printed Name of Employee

_____ _____
Signature of Employee Date

_____
Social Security Number

_____
Printed Name of Trainer

_____ _____
Signature of Trainer Date

cc: Employee file

POLICY

This policy applies to rigging and slings used in conjunction with other material handling equipment for the movement of material by hoisting. The types of rigging and slings covered are those made from alloy steel chain, wire rope, metal mesh, natural or synthetic fiber rope, and synthetic web.

REFERENCES

- §1926.251 – Rigging Equipment for Material Handling
- §1926.550 – Cranes and Derricks

RESPONSIBILITIES

Solomon Corporation will enforce, the following work practices and procedures to assure that no employee will be exposed to hazards during rigging and hoisting operations.

Corporate EH&S Manager Mike Dahl is the Competent Person in authority over all rigging and hoisting operations. Corporate EH&S Manager Mike Dahl will ensure all safety measures and systems are in place, all safety procedures are adhered to, and ensure regular inspections of the operational site and rigging equipment are made.

Employees are responsible for: inspecting ropes, slings, and hoisting devices before each use and when necessary; removing damaged goods for inspection and permanent removal from service; perform pre-shift visual inspection of curves.

TRAINING

Solomon Corporation's qualified rigger training combines classroom and exams with hands-on training. The training program will include familiarization with rigging hardware, slings and the rigging basics, along with the procedures and precautions of lifting loads and lift planning safety.

Solomon Corporation employees need to demonstrate proper inspection, use, selection and maintenance of loose gear such as slings, shackles and hooks. Rigging hardware can include: sheaves and blocks; hooks and latches; rings, links and swivels; shackles; turnbuckles; spreader and equalizer beams; cable drops; pad eyes, eyebolts, and other points of attachment.

Sling training includes the sling configuration, angle, and rated load. Types of slings can include: chain, wire rope, metal mesh, natural fiber rope, synthetic fiber rope, or synthetic web.

Solomon Corporation employees need to know the procedures and precautions of: load control and taglines; lift planning including load weight and center of gravity; sling inspection and criteria for rejecting damaged slings; unbinding loads; proper personnel transfer and of course sling handling and storage.

Basic rigging aspects like pinch points and body position, PPE, signals and communication and load stability are also part of the training.

DEFINITIONS

Angle of loading – is the inclination of a leg or branch of a sling measured from the horizontal or vertical plane, provided that an angle of loading of five degrees or less from the vertical may be considered a vertical angle of loading.

Basket hitch – is a sling configuration whereby the sling is passed under the load and has both ends, end attachments, eyes or handles on the hook or a single master link.

Braided wire rope – is a wire rope formed by plaiting component wire ropes.

Bridle wire rope sling – is a sling composed of multiple wire rope legs with the top ends gathered in a fitting that goes over the lifting hook.

Cable laid endless sling-mechanical joint – is a wire rope sling made endless by joining the ends of a single length of cable laid rope with one or more metallic fittings.

Cable laid grommet-hand tucked – is an endless wire rope sling made from one length of rope wrapped six times around a core formed by hand tucking the ends of the rope inside the six wraps.

Cable laid rope –wire rope with six wire ropes wrapped around a fiber or wire rope core.

Cable laid rope sling-mechanical joint – is a wire rope sling made from a cable laid rope with eyes fabricated by pressing or swaging one or more metal sleeves over the rope junction.

Choker hitch – is a sling configuration with one end of the sling passing under the load and through an end attachment, handle or eye on the other end of the sling.

Coating – is an elastomer or other suitable material applied to a sling or to a sling component to impart desirable properties.

Cross rod – is a wire used to join spirals of metal mesh to form a complete fabric.

Female handle (choker) – handle with a handle eye and a slot that permits passage of a male handle thereby allowing the use of a metal mesh sling in a choker hitch.

Handle – is a terminal fitting to which metal mesh fabric is attached.

Handle eye — is an opening in a handle of a metal mesh sling shaped to accept a hook, shackle or other lifting device.

Hitch –The sling is fastened to an object or load, either directly to it or around it.

Link — is a single ring of a chain.

Male handle (triangle) – is a handle with a handle eye.

Master coupling link – is an alloy steel welded coupling link used as an intermediate link to join alloy steel chain to master links.

Master link or gathering ring – is a forged or welded steel link used to support all members (legs) of an alloy steel chain sling or wire rope sling.

Mechanical coupling link – is a non-welded, mechanically closed steel link used to attach master links, hooks, etc., to alloy steel chain.

Proof load – is the load applied in performance of a proof test.

Proof test – is a nondestructive tension test performed by the sling manufacturer or an equivalent entity to verify construction and workmanship of a sling.

Rated capacity or working load limit – is the maximum working load permitted by the provisions of this section.

Reach – is the effective length of an alloy steel chain sling measured from the top bearing surface of the upper terminal component to the bottom bearing surface of the lower terminal component.

Spiral –a single transverse coil that is the basic element from which metal mesh is fabricated.

Strand laid endless sling-mechanical joint – is a wire rope sling made endless from one length of rope with the ends joined by one or more metallic fittings.

Strand laid grommet-hand tucked – is an endless wire rope sling made from one length of strand wrapped six times around a core formed by hand tucking the ends of the strand inside the six wraps.

Strand laid rope – is a wire rope made with strands (usually six or eight) wrapped around a fiber core, wire strand core, or independent wire rope core (IWRC).

Vertical hitch – is a method of supporting a load by a single, vertical part or leg of the sling.

TYPES OF SLINGS

- Alloy Steel Chain Slings
- Wire Rope Slings
- Metal Mesh Slings
- Natural and Synthetic Fiber Rope Slings
- Synthetic Web Slings
- Synthetic Round Slings

SAFE PRACTICES

Improper rigging of a load or a rigging failure can expose riggers and other workers nearby to a variety of potential hazards. Riggers have been injured or killed when loads have slipped from the rigging, or when the rigging has failed. Therefore all loads must be safely rigged, including adequate welds on pad eyes (page C-8) prior to a lift.

The following are topics that should be discussed with workers prior to beginning rigging operations:

- Hazards associated with rigging operations
- Role and responsibility of each rigger's assigned task
- Establishing a goal for the day
- Weight of material and equipment being hoisted
- Identifying the various shapes on the surface of equipment being hoisted
- Lifting limitations of gear and hoisting devices
- Communication used by all personnel
- Disconnecting techniques used to complete the task

RIGGING EQUIPMENT

- Rigging equipment will not be loaded in excess of its recommended safe working load, as prescribed for the specific equipment and load rating identification will be attached to the rigging apparatus or equipment
- Rigging equipment, when not in use, will be removed from the immediate work area so as not to present a hazard to employees
- Tag lines will be used unless their use creates an unsafe condition
- Hooks with self-closing safety latches or their equivalent will be used to prevent components from slipping out of the hook

WORKING UNDER SUSPENDED LOADS

Routes for suspended loads will be pre-planned to ensure that no employee is required to work directly below a suspended load except for:

- Employees engaged in the initial connection of the steel
- Employees necessary for the hooking or unhooking of the load

When working under suspended loads, the following criteria will be met:

- Materials being hoisted will be rigged to prevent unintentional displacement
- Hooks with self-closing safety latches or their equivalent will be used to prevent components from slipping out of the hook
- All loads will be rigged by a qualified rigger

POLICY

Solomon Corporation is committed to providing a safe and hazard free workplace and has adopted this policy for Hazard Identification & Risk Assessment from industry standards and best available practices.

RESPONSIBILITIES

Corporate EH&S Manager Mike Dahl is the assigned Company Supervisor responsible for ensuring the following procedures, practices, and rules are implemented and enforced. *Corporate EH&S Manager Mike Dahl* will administrate and review regularly scheduled facility-wide or area-specific analysis/inspections of all jobsites and facilities for hazards on a weekly or as needed basis that will also include spot-checks and random inspections.

TRAINING

The Solomon Corporation Hazard Identification & Risk Assessment Program will ensure employees will be trained in the hazard identification process, including the proper use and care of Personal Protective Equipment.

PROCEDURES

Assessment/inspections will be documented for review by the Company Safety Committee. Hazard assessments include inspection of the area as well as safe work practices. Hazard assessments will be appropriately documented using the appropriate form found at the end of this section.

During the course of inspection, when a job hazard is identified it is immediately corrected if possible. If the hazard is not immediately correctable, all appropriate personnel are notified and the hazard is clearly identified by signs, barricades, or other warnings.

Solomon Corporation employees and/or subcontractors are actively involved in the hazard identification process and hazards are reviewed with all employees concerned.

The hazard identification process is used for routine and non-routine activities as well as new process, changes in operation, products, or services as applicable.

Corporate EH&S Manager Mike Dahl will identify risks and hazards based on hazard assessments and reports. Hazards will be addressed and mitigated. This will be accomplished by dedicated assignment, appropriate documentation of completion, and implemented controls.

The Solomon Corporation Safety Committee will review all Hazard Assessments in order to avoid creating new hazards derived from the corrective measures.

WHAT IS A JOB HAZARD

A Job hazard is the potential for harm. In practical terms, a job hazard is often associated with a condition or activity that, if left uncontrolled, can result in an injury or illness. Identifying job hazards and eliminating or controlling them as early as possible will help prevent injuries and illnesses.

A JOB HAZARD ASSESSMENT

A Job Hazard Assessment is a technique that focuses on job tasks as a way to identify hazards before they occur. It focuses on the relationship between the worker, the task, the tools, and the work environment. Ideally, after identifying uncontrolled hazards, steps will be taken to eliminate or reduce them to an acceptable risk level.

THE IMPORTANCE OF A JOB HAZARD ASSESSMENT

Many workers are injured and killed at the workplace every day in the United States. Safety and health adds value to business, your job, and your life. Workplace injuries and illnesses can be prevented by looking at workplace operations, establishing proper job procedures, and ensuring that all employees are trained properly. One of the best ways to determine and establish proper work procedures is to conduct a Job Hazard Assessment.

THE VALUE OF A JOB HAZARD ASSESSMENT

Supervisors can use the findings of a Job Hazard Assessment to eliminate and prevent hazards in their workplaces. This is likely to result in fewer worker injuries and illnesses; safer, more effective work methods; reduced Workers' Compensation costs, and increased worker productivity. The assessment also can be a valuable tool for training new employees in the steps required to perform their jobs safely.

For a Job Hazard Assessment to be effective, managers and supervisors must demonstrate their commitment to safety and health and follow through to correct any uncontrolled hazards identified. Otherwise, management will lose credibility and employees may hesitate to go to supervisors when dangerous conditions threaten them.

JOBS APPROPRIATE FOR HAZARD ASSESSMENT

Job Hazard Identification & Risk Assessment will be conducted on jobs in our workplace. Hazards are classified/prioritized and addressed based on the risk associated with the task (Risk analysis matrix outlining severity and probability on page 8). Priority will go to the following job types:

- Jobs with the highest injury or illness rates
- Jobs with the potential to cause severe or disabling injuries or illness, even if there is no history of previous accidents
- Jobs in which one simple human error could lead to a severe accident or injury
- New jobs or ones with changes in processes and procedures
- Jobs complex enough to require written instructions

WHERE TO BEGIN

Involve employees and subcontractors. It is very important to involve employees and subcontractors in the hazard assessment process. They have a unique understanding of the job, and this knowledge is invaluable for finding hazards. Involving employees will help minimize oversights, ensure a quality assessment, and get workers to “buy in” to the solutions because they will share ownership in their safety and health program.

Review accident history. Review with employees our workplace’s history of accidents and occupational illnesses that needed treatment, losses that required repair or replacement, and any “near misses” – events in which an accident or loss did not occur, but could have. These events are indicators that the existing hazard controls (if any) may not be adequate and deserve more scrutiny.

Conduct a preliminary job review. Discuss with employees and subs the hazards they know exist in their current work and surroundings. Brainstorm with them for ideas to eliminate or control those hazards.

If any hazards exist that pose an immediate danger to an employee’s life or health, take immediate action to protect the worker. Any problems that can be corrected easily should be corrected as soon as possible. Do not wait to complete your Job Hazard Assessment. This demonstrates our commitment to safety and health and enables us to focus on the hazards and jobs that need more study because of their complexity. For those hazards determined to present unacceptable risks, evaluate types of hazard controls.

List, rank, and set priorities for hazardous jobs. List jobs with hazards that present unacceptable risks, based on those most likely to occur, and with the most severe consequences. These jobs are first priority for assessment.

Outline the steps or tasks. Nearly every job can be broken down into job tasks or steps. When beginning a Job Hazard Assessment, watch the employee perform the job and list each step as the worker takes it. Be sure to record enough information to describe each job action without getting overly detailed. Avoid making the breakdown of steps so detailed that it becomes unnecessarily long or so broad that it does not include basic steps. It is valuable to get input from other workers who have performed the same job. Later, review the job steps with the employee to make sure something was not omitted. Point out that the job itself is being evaluated, not the employee’s job performance. Include the employee in all phases of the assessment – from reviewing the job steps and procedures to discussing uncontrolled hazards and recommended solutions.

Sometimes, in conducting a Job Hazard Assessment, it may be helpful to photograph or videotape the worker performing the job. These visual records can be handy references when doing a more detailed assessment of the work.

IDENTIFYING WORKPLACE HAZARDS

A Job Hazard Assessment is an exercise in detective work. The goal is to discover the following: what can go wrong; the consequences; hot it could arise; contributing factors; likelihood that it will occur.

To make our Job Hazard Assessment useful, document the answers to these questions in a consistent manner. Describing a hazard in this way helps to ensure that our efforts to eliminate the hazard and implement hazard controls help target the most important contributors to the hazard.

Good hazard scenarios describe:

- Where it is happening? (environment)
- Who or what it is happening to? (exposure)
- What precipitates the hazard? (trigger)
- The outcome that would occur should it happen? (consequence)
- Any other contributing factors

Rarely is a hazard a simple case of one singular cause resulting in one singular effect. More frequently, many contributing factors tend to line up in a certain way to create the hazard.

Here is an example of a hazard scenario:

In the metal shop (environment), while clearing a snag (trigger), a worker's hand (exposure) comes into contact with a rotating pulley. It pulls his hand into the machine and quickly severs his fingers (consequences).

To perform a Job Hazard Assessment, you would ask:

- What can go wrong? The worker's hand could come into contact with a rotating object that "catches" it and pulls it into the machine
- What are the consequences? The worker could receive a severe injury and lose fingers and hands
- How could it happen? The accident could happen as a result of the worker trying to clear a snag during operations or as part of a maintenance activity while the pulley is operating. Obviously, this hazard scenario could not occur if the pulley is not rotating
- What are other contributing factors? This hazard occurs very quickly. It does not give the worker much opportunity to recover or prevent it once his hand comes into contact with the pulley. This is an important factor, because it helps determine the severity and likelihood of an accident when selecting appropriate hazard controls. Unfortunately, experience has shown that training is not very effective in hazard control when triggering events happen quickly because humans can react only so quickly

How to Correct or Prevent Hazards

After reviewing the list of hazards with the employee, consider what control methods will eliminate or reduce them. The most effective controls are engineering controls that physically change a machine or work environment to prevent employee exposure to the hazard. The more reliable or less likely a hazard control can be circumvented, the better. If this is not feasible, administrative controls may be appropriate.

This may involve changing how employees do their jobs. Discuss recommendations with all employees who perform the job and consider their responses carefully. If it is planned to introduce new or modified job procedures, be sure they understand what they are required to do and the reasons for the changes.

Before Starting a Job Hazard Assessment

The job procedures discussed are for illustration only and do not necessarily include all the steps, hazards, and protections that apply. When conducting a job safety assessment, be sure to consult OSHA standards. Compliance with these standards is mandatory, and by incorporating their requirements into the Job Hazard Assessment, we can be sure that our Safety & Health Program meets Federal Standards.

Review the Job Hazard Assessment

Periodically reviewing the Job Hazard Assessment ensures that it remains current and continues to help reduce workplace accidents and injuries. Even if the job has not changed, it is possible that during the review process you will identify hazards that were not identified in the initial assessment. It is particularly important to review the Job Hazard Assessment if an illness or injury occurs on a specific job.

Based on the circumstances, it may be determined that changes are needed in the job procedure to prevent similar incidents in the future. If an employee's failure to follow proper job procedures results in a "close call or near miss," discuss the situation with all employees who perform the job and remind them of proper procedures. Any time a Job Hazard Assessment is revised, it is important to train all employees affected by the changes in the new job methods, procedures, or protective measures adopted.

When to Hire a Professional

If our employees are involved in many different or complex processes, we may need professional help conducting a Job Hazard Assessment. Even if we receive outside help, it is important that our employees remain involved in the process of identifying and correcting hazards because they are at the workplace every day and most likely to encounter these hazards. New circumstances and a recombination of existing circumstances may cause old hazards to reappear and new hazards to appear. In addition, we and our employees must be ready and able to implement whatever hazard elimination or control measures a professional consultant recommends.

HAZARD CONTROL MEASURES

Information obtained from a Job Hazard Assessment is useless unless hazard control measures recommended in the assessment are incorporated into the tasks. Managers and supervisors must recognize that not all hazard controls are equal. Some are more effective than others at reducing the risk.

The order of precedence and effectiveness of hazard control is the following: engineering controls; administrative controls; personal protective equipment.

Engineering controls include the following:

- Elimination/minimization of the hazard – Designing the facility, equipment, or process to remove the hazard, or substituting processes, equipment, materials, or other factors to lessen the hazard
- Enclosure of the hazard using enclosed cabs, enclosures for noisy equipment, or other means
- Isolation of the hazard with interlocks, machine guards, blast shields, welding curtains, or other means
- Removal or redirection of the hazard such as with local and exhaust ventilation

Administrative controls include the following:

- Written operating procedures, work permits, and safe work practices
- Exposure time limitations (used most commonly to control temperature extremes and ergonomic hazards)
- Monitoring the use of highly hazardous materials
- Alarms, signs, and warnings
- The “Buddy” system
- Training

PERSONAL PROTECTIVE EQUIPMENT

Protective equipment such as respirators, hearing protection, protective clothing, safety glasses, and hardhats is acceptable as a control method in the following circumstances:

- When engineering controls are not feasible or do not totally eliminate the hazard
- While engineering controls are being developed
- When safe work practices do not provide sufficient additional protection
- During emergencies when engineering controls may not be feasible

Use of one hazard control method over another higher in the control precedence may be appropriate for providing interim protection until the hazard is abated permanently. In reality, if the hazard cannot be eliminated entirely, the adopted control measures will likely be a combination of all three items instituted simultaneously.

Solomon Corporation will use the forms on the following pages for the Hazard Identification & Risk Assessment Program.

Job Hazard Alert

Department:	Date:
Location:	
Description of Hazard:	
Person who discovered hazard:	
Supervisor actions:	
Root Cause(s):	
Control(s):	
Reviewed by:	Date corrected:

Job Hazard Assessment

Job Title:	Jo Job Location:	
Task #	P Person Doing Assessment:	Date:
Task Description:		
Hazard Type:		
Hazard Description:		
Consequence:		
Hazard Controls:		
Rational or Comment:		
Final Disposition:		
Supervisor Signature:	Date	

Hazard Tracking Log

Hazard Number	Description	Reported by	Date Reported	Corrected by	Responsible Supervisor	Date Corrected

JOB HAZARD ASSESSMENT

Solomon Corporation uses this program of self-inspection for our facilities and workplaces in order to identify hazards and assess risk. Self-inspection is a must if we are to know where probable hazards exist and whether they are under control. Safety inspection items are completed using the following self-inspection form. These checklists are designed to assist in this fact-finding. It will give The Company some indication of where we can take action to make our business safer and more healthful for all of our employees. Use sections on the checklist relevant to particular operations and disregard those which do not apply.

When a checklist has been completed, this material will be added to our injury information, our employee information, and to our process and equipment information. The Company will now possess many facts that will help determine what problems exist. Management will then use the OSHA standards in the problem-solving process and it will be much easier to determine the action needed to solve these problems. Corrective action is required to be documented on the form at the end of this section. Corrective action or preventive action plans will be reviewed by management at safety committee meetings. The scope of our self-inspections will include the following:

- Processing, Receiving, Shipping and Storage – equipment, job planning, layout, heights, floor loads, projection of materials, materials-handling and storage methods, and training for material handling equipment
- Building and Grounds Conditions – floors, walls, ceilings, exits, stairs, walkways, ramps, platforms, driveways, and aisles
- Housekeeping Program – waste disposal, tools, objects, materials, leakage and spillage, cleaning methods, schedules, work areas, remote areas, and storage areas
- Electricity – equipment, switches, breakers, fuses, switch-boxes, junctions, special fixtures, circuits, insulation, extensions, tools, motors, grounding, and NEC compliance
- Lighting – type, intensity, controls, conditions, diffusion, & location
- Heating and Ventilation – type, effectiveness, temperature, humidity, controls, and natural and artificial ventilation and exhaust
- Machinery – points of operation, flywheels, gears, shafts, pulleys, key ways, belts, couplings, sprockets, chains, frames, controls, lighting for tools and equipment, brakes, exhausting, feeding, oiling, adjusting, maintenance, lockout/tagout, grounding, work space, location, and purchasing standards
- Personnel – experience training, hazard identification training; methods of checking machines before use; type of clothing; personal protective equipment; use of guards; tool storage; work practices; and methods of cleaning, oiling, or adjusting machinery
- Hand and Power Tools – purchasing standards, inspection, storage, repair, types, maintenance, grounding, use, and handling

- Chemicals – storage, handling, transportation, spills, disposals, amounts used, labeling, toxicity or other harmful effects, warning signs, supervision, training, protective clothing and equipment, and hazard communication requirements
- Fire Prevention – extinguishers, alarms, sprinklers, smoking rules, exits, personnel assigned, separation of flammable materials and dangerous operations, explosive-proof fixtures in hazardous locations, and waste disposal
- Maintenance, including tracking and abatement of preventive & regular maintenance – regularity, effectiveness, training of personnel, materials and equipment used, records maintained, method of locking out machinery, and general methods.
- Personal Protective Equipment – type, size, maintenance, repair, storage, assignment of responsibility, purchasing methods, standards observed, training in care and use, rules of use, and method of assignment
- Transportation – motor vehicle safety, seat belts, vehicle maintenance, and safe driver programs
- Review – evacuation routes, equipment, and personal protective equipment

JOB SAFETY INSPECTION & REPORT

Solomon Corporation

_____ _____
Jobsite Location Date

_____ _____
Job Foreman/Supervisor Time

_____
Person(s) Making Inspection

Other Subcontractors On-Site (List Name and Trade)

_____ _____
Company Name Trade

_____ _____
Company Name Trade

Check Boxes:

A = Adequate at time of inspection

B = Needs consideration

C = Needs immediate attention

N/A = Not applicable

CATEGORY

JOBSITE INFORMATION:	A	B	C	N/A	Action Taken
Copy of Company Safety Program on site?	☐	☐	☐	☐	_____
OSHA 300 and 301 Forms Posted and Complete?	☐	☐	☐	☐	_____
Are required OSHA Posters posted?	☐	☐	☐	☐	_____
Phone number to nearest medical center posted?	☐	☐	☐	☐	_____
Tailgate/Toolbox training current?	☐	☐	☐	☐	_____
HAZCOM & Safety Data Sheets (SDS) on site?	☐	☐	☐	☐	_____
Work areas properly signed and barricaded?	☐	☐	☐	☐	_____

RISK ASSESSMENT

HOUSEKEEPING:	A	B	C	N/A	Action Taken
Work area generally neat?	☐	☐	☐	☐	_____
Projecting nails removed or bent over?	☐	☐	☐	☐	_____
Waste containers in use?	☐	☐	☐	☐	_____
Designated disposal area in place?	☐	☐	☐	☐	_____
Passageways/walkways clear?	☐	☐	☐	☐	_____
Cords, leads, and trip hazards off the floor?	☐	☐	☐	☐	_____

FIRE PREVENTION:	A	B	C	N/A	Action Taken
Charged & inspected fire extinguishers accessible?	☐	☐	☐	☐	_____
Phone number of local fire department posted?	☐	☐	☐	☐	_____
Flammables properly stored?	☐	☐	☐	☐	_____
"No Smoking" signs posted near flammables?	☐	☐	☐	☐	_____

ELECTRICAL:	A	B	C	N/A	Action Taken
Damaged extension cords removed from service?	☐	☐	☐	☐	_____
Ground fault circuit interrupters used?	☐	☐	☐	☐	_____
Terminal boxes equipped with required covers?	☐	☐	☐	☐	_____
Employees trained in Lockout\Tagout?	☐	☐	☐	☐	_____

HAND, POWER, POWDER TOOLS	A	B	C	N/A	Action Taken
Hand tools inspected regularly?	☐	☐	☐	☐	_____
Guards in place on machines?	☐	☐	☐	☐	_____
Tools suited for their jobs?	☐	☐	☐	☐	_____
Operators of powder-actuated tools licensed?	☐	☐	☐	☐	_____

FALL PROTECTION:	A	B	C	N/A	Action Taken
Employees properly trained?	☐	☐	☐	☐	_____
Safety rails and cables secured properly?	☐	☐	☐	☐	_____
Guardrails properly installed and secured?	☐	☐	☐	☐	_____
Employees have D- ring belts in center of back?	☐	☐	☐	☐	_____
Employees exposed to fall hazards tied off?	☐	☐	☐	☐	_____
Employees below protected from falling objects?	☐	☐	☐	☐	_____

LADDERS:	A	B	C	N/A	Action Taken
Ladders extend 36 inches above the landing?	☐	☐	☐	☐	_____
Ladders secured to prevent slipping or sliding?	☐	☐	☐	☐	_____
Damaged ladders removed from service?	☐	☐	☐	☐	_____
Stepladders used in fully open position?	☐	☐	☐	☐	_____
No stepping on top 2 rungs of stepladder?	☐	☐	☐	☐	_____

SCAFFOLD:	A	B	C	N/A	Action Taken
All scaffolding inspected daily?	☐	☐	☐	☐	_____
Erected on solid, stable footing?	☐	☐	☐	☐	_____
Tied-off to structure as required?	☐	☐	☐	☐	_____
Guardrails, midrails, & toeboards in place?	☐	☐	☐	☐	_____
Is scaffold properly planked?	☐	☐	☐	☐	_____
Is working level of scaffold fully planked?	☐	☐	☐	☐	_____
Proper access provided?	☐	☐	☐	☐	_____
Employees below protected from falling objects?	☐	☐	☐	☐	_____

FLOOR AND WALL OPENINGS:	A	B	C	N/A	Action Taken
All floor and deck openings covered or barricaded?	☐	☐	☐	☐	_____
Perimeter protection in place?	☐	☐	☐	☐	_____
Deck planks secured?	☐	☐	☐	☐	_____
Materials stored away from edge?	☐	☐	☐	☐	_____
Guardrails in place?	☐	☐	☐	☐	_____

TRENCHES, EXCAVATIONS, AND SHORING:	A	B	C	N/A	Action Taken
Competent person on hand?	☐	☐	☐	☐	_____
Employees properly trained?	☐	☐	☐	☐	_____
No water in excavation or signs of cave-in?	☐	☐	☐	☐	_____
Excavations shored or sloped back?	☐	☐	☐	☐	_____
Materials stored at least two feet from trench?	☐	☐	☐	☐	_____
Excavations properly identified & barricaded?	☐	☐	☐	☐	_____
Ladders provided every 25 feet in trench?	☐	☐	☐	☐	_____
Is equipment a safe distance from edge of trench?	☐	☐	☐	☐	_____

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MATERIALS HANDLING:	A	B	C	N/A	Action Taken
Materials properly stored or stacked?	☐	☐	☐	☐	_____
Employees using proper lifting methods?	☐	☐	☐	☐	_____
Tag lines used to guide loads?	☐	☐	☐	☐	_____
Proper number of workers for each operation?	☐	☐	☐	☐	_____

WELDING AND BURNING:	A	B	C	N/A	Action Taken
Gas cylinders stored correctly?	☐	☐	☐	☐	_____
Proper separation between fuels and oxygen?	☐	☐	☐	☐	_____
Burning/welding goggles or shields used?	☐	☐	☐	☐	_____
Other required PPE being used?	☐	☐	☐	☐	_____
Fire extinguishers in close proximity?	☐	☐	☐	☐	_____
Hoses in good condition?	☐	☐	☐	☐	_____
Employees properly trained?	☐	☐	☐	☐	_____

CRANES:	A	B	C	N/A	Action Taken
Outriggers extended & properly placed?	☐	☐	☐	☐	_____
Swing radius barricades in place?	☐	☐	☐	☐	_____
Operators familiar with load charts?	☐	☐	☐	☐	_____
Hand signal charts on crane?	☐	☐	☐	☐	_____
Crane operators' logs up-to-date and on-site?	☐	☐	☐	☐	_____
Employees kept from under suspended loads?	☐	☐	☐	☐	_____
Chains & slings inspected and tagged as required?	☐	☐	☐	☐	_____

FORKLIFTS AND OTHER EQUIPMENT:	A	B	C	N/A	Action Taken
Operators properly trained?	☐	☐	☐	☐	_____
Pre-shift equipment inspection completed?	☐	☐	☐	☐	_____
Are avenues of operation designated & marked?	☐	☐	☐	☐	_____
Stationary running equipment properly located?	☐	☐	☐	☐	_____

CONCRETE CONSTRUCTION:	A	B	C	N/A	Action Taken
Exposed rebar properly capped or covered?	☐	☐	☐	☐	_____
Employees protected from cement dust and silica?	☐	☐	☐	☐	_____
Exposed skin covered?	☐	☐	☐	☐	_____
Runways adequate?	☐	☐	☐	☐	_____

PERSONAL PROTECTIVE EQUIPMENT:	A	B	C	N/A	Action Taken
Fall protection inspected and used correctly?	☐	☐	☐	☐	_____
Hard hats being worn?	☐	☐	☐	☐	_____
Safety glasses/goggles being worn?	☐	☐	☐	☐	_____
Respirators used when required? (medical evaluations and fit-testing completed)	☐	☐	☐	☐	_____
Hearing protection being worn when required?	☐	☐	☐	☐	_____
Boots and long pants worn on jobsite?	☐	☐	☐	☐	_____
Long hair tied back?	☐	☐	☐	☐	_____
Traffic vests being worn?	☐	☐	☐	☐	_____

OTHER:	A	B	C	N/A	Action Taken
_____	☐	☐	☐	☐	_____
_____	☐	☐	☐	☐	_____
_____	☐	☐	☐	☐	_____
_____	☐	☐	☐	☐	_____

Unsafe Acts or Practices Observed: _____

_____

_____

_____

Comments: _____

_____

_____

_____ _____

Signature (person(s) performing evaluation) Date

_____ _____

Signature (person(s) performing evaluation) Date

File this document in the "Company Safety and Health File."

POLICY

Solomon Corporation has adopted this policy to ensure the safety of personnel who use scaffolding in the performance of work.

REFERENCES

- §1926 Subpart L – Scaffold Specifications
- Solomon Corporation Fall Protection Policy

RESPONSIBILITIES

The following engineering controls, training requirements, and safe work practices will be enforced by Corporate EH&S Manager Mike Dahl to protect our employees from hazards associated with the erecting and use of scaffolds:

- Training of all employees that work on scaffolds is conducted by "Qualified" persons.
- An inspection of the scaffold must be conducted by a competent person and deemed safe prior to being used.

COMPETENT PERSON

The *competent person* will be trained in accordance with the Occupational Safety and Health Administration and responsible for:

- Directing employees who erect, dismantle, move or alter scaffolding
- Determining if it is safe for employees to work from a scaffold during storms or high winds, and ensure that a personal fall arrest system is in place
- Training employees involved in erecting, disassembling, moving, operating, repairing, maintaining, or inspecting scaffolding to recognize associated work hazards
- Inspecting scaffolds and scaffold components for visible defects before each work shift, and after any occurrence which could affect the structural integrity, and to authorize prompt corrective action
- Inspecting ropes on suspended scaffolds prior to each work shift and after every occurrence which could affect the structural integrity, and to authorize prompt corrective actions
- For suspension scaffolds, evaluating direct connections to support the load to be imposed
- For erectors and dismantler’s, determining the feasibility and safety of providing fall protection and access
- For scaffold components: determining if a scaffold will be structurally sound when intermixing components from different manufacturer’s; and determining if galvanic action has affected the capacity when using components of dissimilar metals

QUALIFIED PERSON

Qualified persons will be responsible for:

- Designing and loading scaffolds in accordance with design specifications
- Training employees working on the scaffolds to recognize the associated hazards and understand procedures to control or minimize those hazards
- For suspension scaffolds:
  - Designing platforms on two-point adjustable suspension types that are less than 36 inches wide to prevent instability
  - Making swaged attachments and spliced eyes on wire suspension ropes
  - Designing components in accordance with design specifications

TRAINING

Each Solomon Corporation employee who performs work erecting, disassembling, moving, or working with scaffolds in any way is trained under the supervision of Corporate EH&S Manager Mike Dahl, who is designated as the Qualified Person for Solomon Corporation, to recognize the hazards associated with the type of scaffold being used and to understand the procedures to control or minimize those hazards.

- The training program, at a minimum, addresses the following hazards
- Assessment of any electrical hazards, fall hazards, and falling object hazards in the work area
- The correct procedures for dealing with electrical hazards and for erecting, maintaining, and disassembling the scaffolding and fall protection systems and falling object protection systems being used
- Proper use of the scaffold, and the safe handling of materials on the scaffold
- Maximum intended loads and the load carrying capacities of the scaffolds used
- The nature of scaffold hazards
- The correct procedures for erecting, disassembling, moving, operating, repairing, inspecting, and maintaining the type of scaffold being used
- The design criteria, maximum intended load carrying capacity, and intended use of the scaffold
- Any other safety topics deemed pertinent to the particular work-site, scaffold system, or fall protection systems being used
- Retraining is required when scaffold application, type of scaffold used, or when job conditions change

DEFINITIONS

Adjustable suspension scaffold means a suspension scaffold equipped with a hoist(s) that can be operated by an employee(s) on the scaffold.
Bearer (putlog) means a horizontal transverse scaffold member (which may be supported by ledgers or runners) upon which the scaffold platform rests and which joins scaffold uprights, posts, poles, and similar members.
Boatswains' chair means a single-point adjustable suspension scaffold consisting of a seat or sling designed to support one employee in a sitting position.

Body belt (safety belt) means a strap with means both for securing it about the waist and for attaching it to a lanyard, lifeline, or deceleration device.

Body harness means a design of straps which may be secured about the employee in a manner to distribute the fall arrest forces over at least the thighs, pelvis, waist, chest and shoulders, with means for attaching it to other components of a personal fall arrest system. *Brace* means a rigid connection that holds one scaffold member in a fixed position with respect to another member, or to a building or structure.

Bricklayers' square scaffold means a supported scaffold composed of framed squares which support a platform.

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

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

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

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

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

Deceleration device means any mechanism, such as a rope grab, rip-stitch lanyard, specially-woven lanyard, tearing or deforming lanyard, or automatic self-retracting lifeline lanyard, which dissipates a substantial amount of energy during a fall arrest or limits the energy imposed on an employee during fall arrest.

Double pole (independent pole) scaffold means a supported scaffold consisting of a platform(s) resting on cross beams (bearers) supported by ledgers and a double row of uprights independent of support (except ties, guys, braces) from any structure.

Equivalent means alternative designs, materials or methods to protect against a hazard which the employer can demonstrate will provide an equal or greater degree of safety for employees than the methods, materials or designs specified in the standard.

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

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

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

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

Failure means load refusal, breakage, or separation of component parts. Load refusal is the point where the ultimate strength is exceeded.

Float (ship) scaffold means a suspension scaffold consisting of a braced platform resting on two parallel bearers and hung from overhead supports by ropes of fixed length.

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

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

Hoist means a manual or power-operated mechanical device to raise or lower a suspended scaffold.

Horse scaffold means a supported scaffold consisting of a platform supported by construction horses (saw horses). Horse scaffolds constructed of metal are sometimes known as trestle scaffolds.

Independent pole scaffold (see "Double pole scaffold").

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

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

Ladder stand means a mobile, fixed-size, self-supporting ladder consisting of a wide flat tread ladder in the form of stairs.

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

Large area scaffold means a pole scaffold, tube and coupler scaffold, systems scaffold, or fabricated frame scaffold erected over substantially the entire work area. For example: a scaffold erected over the entire floor area of a room.

Lean-to scaffold means a supported scaffold which is kept erect by tilting it toward and resting it against a building or structure.

Lifeline means a component consisting of a flexible line that connects to an anchorage at one end to hang vertically (vertical lifeline), or that connects to anchorages at both ends to stretch horizontally (horizontal lifeline), and which serves as a means for connecting other components of a personal fall arrest system to the anchorage.

Lower levels means areas below the level where the employee is located and to which an employee can fall. Such areas include, but are not limited to, ground levels, floors, roofs, ramps, runways, excavations, pits, tanks, materials, water, and equipment.

Masons' adjustable supported scaffold (see "Self-contained adjustable scaffold").

Masons' multi-point adjustable suspension scaffold means a continuous run suspension scaffold designed and used for masonry operations.

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

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

Multi-level suspended scaffold means a two-point or multi-point adjustable suspension scaffold with a series of platforms at various levels resting on common stirrups.

Multi-point adjustable suspension scaffold means a suspension scaffold consisting of a platform(s) which is suspended by more than two ropes from overhead supports and equipped with means to raise and lower the platform to desired work levels. Such scaffolds include chimney hoists.

Needle beam scaffold means a platform suspended from needle beams.

Open sides and ends means the edges of a platform that are more than 14 inches (36 cm) away horizontally from a sturdy, continuous, vertical surface (such as a building wall) or a sturdy, continuous horizontal surface (such as a floor), or a point of access. Exception: For plastering and lathing operations the horizontal threshold distance is 18 inches (46 cm).

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

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

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

Overhand bricklaying means the process of laying bricks and masonry units such that the surface of the wall to be jointed is on the opposite side of the wall from the mason, requiring the mason to lean over the wall to complete the work. It includes mason tending and electrical installation incorporated into the brick wall during the overhand bricklaying process.

Personal fall arrest system means a system used to arrest an employee's fall. It consists of an anchorage, connectors, a body belt or body harness and may include a lanyard, deceleration device, lifeline, or combinations of these.

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

Pole scaffold (see definitions for "Single-pole scaffold" and "Double (independent) pole scaffold").

Power operated hoist means a hoist which is powered by other than human energy.

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

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

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

Repair bracket scaffold means a supported scaffold consisting of a platform supported by brackets which are secured in place around the circumference or perimeter of a chimney, stack, tank or other supporting structure by one or more wire ropes placed around the supporting structure.

Roof bracket scaffold means a rooftop supported scaffold consisting of a platform resting on angular-shaped supports.

Runner (ledger or ribbon) means the lengthwise horizontal spacing or bracing member which may support the bearers.

Scaffold means any temporary elevated platform (supported or suspended) and its supporting structure (including points of anchorage), used for supporting employees or materials or both.

Self-contained adjustable scaffold means a combination supported and suspension scaffold consisting of an adjustable platform(s) mounted on an independent supporting frame(s) not a part of the object being worked on, and which is equipped with a means to permit the raising and lowering of the platform(s). Such systems include rolling roof rigs, rolling outrigger systems, and some masons' adjustable supported scaffolds.

Shore scaffold means a supported scaffold which is placed against a building or structure and held in place with props.

Single-point adjustable suspension scaffold means a suspension scaffold consisting of a platform suspended by one rope from an overhead support and equipped with means to permit the movement of the platform to desired work levels.

Single-pole scaffold means a supported scaffold consisting of a platform(s) resting on bearers, the outside ends of which are supported on runners secured to a single row of posts or uprights, and the inner ends of which are supported on or in a structure or building wall.

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

Stall load means the load at which the prime-mover of a power-operated hoist stalls or the power to the prime-mover is automatically disconnected.

Step, platform, and trestle ladder scaffold means a platform resting directly on the rungs of step ladders or trestle ladders.

Stilts means a pair of poles or similar supports with raised footrests, used to permit walking above the ground or working surface.

Stonesetters' multi-point adjustable suspension scaffold means a continuous run suspension scaffold designed and used for stonesetters' operations.

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

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

System scaffold means a scaffold consisting of posts with fixed connection points that accept runners, bearers, and diagonals that can be interconnected at predetermined levels.

Tank builders' scaffold means a supported scaffold consisting of a platform resting on brackets that are either directly attached to a cylindrical tank or attached to devices that are attached to such a tank.

Top plate bracket scaffold means a scaffold supported by brackets that hook over or are attached to the top of a wall. This type of scaffold is similar to carpenters' bracket scaffolds and form scaffolds and is used in residential construction for setting trusses.

Tube and coupler scaffold means a supported or suspended scaffold consisting of a platform(s) supported by tubing, erected with coupling devices connecting uprights, braces, bearers, and runners.

Tubular welded frame scaffold (see "Fabricated frame scaffold").

Two-point suspension scaffold (swing stage) means a suspension scaffold consisting of a platform supported by hangers (stirrups) suspended by two ropes from overhead supports and equipped with means to permit the raising and lowering of the platform to desired work levels.

Unstable objects means items whose strength, configuration, or lack of stability may allow them to become dislocated and shift and therefore may not properly support the loads imposed on them. Unstable objects do not constitute a safe base support for scaffolds, platforms, or employees. Examples include, but are not limited to, barrels, boxes, loose brick, and concrete blocks.

Vertical pickup means a rope used to support the horizontal rope in catenary scaffolds.

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

Window jack scaffold means a platform resting on a bracket or jack which projects through a window opening.

SAFE PRACTICES

- Stationary scaffolds over 125 feet in height and rolling scaffolds over 60 feet in height will be designed by a professional engineer
- An inspection of the scaffold must be conducted by a competent person and deemed safe prior to being used
- Damaged or deteriorated equipment will not be used
- All scaffolding systems, components, and fall protection systems used will be inspected by Corporate EH&S Manager Mike Dahl prior to use, before each work shift begins, after erecting or moving, and periodically through the work day to ensure the system is erected properly, that there is no damage to components of the system, and that the system is being used properly and safely
- Modifications of scaffold by non-qualified employees is prohibited. Only qualified and competent personnel are allowed to modify scaffolding systems. Disciplinary action for non-qualified modifications will be enforced
- Any system or component of a system which is found to have a defect in manufacturing or design, damage, excessive wear, weathering, or corrosion, will be immediately removed from service and tagged to indicate that it is not to be used with a prominent tag, as shown below, which states:

- Any repairs or modifications to a scaffold system or component of a system must be approved by Corporate EH&S Manager Mike Dahl prior to implementation
- Any violation of the above policy, misuse of scaffolds, or misconduct while working on scaffolds will be subject to disciplinary action within the scope of Company policy, up to and including termination of employment

CAPACITY/LOADS

Each scaffold and scaffold component will be capable of supporting, without failure, its own weight and at least four times the maximum intended load applied or transmitted to it.

PLATFORMS

Each platform on all working levels of scaffolds will be fully planked or decked between the front uprights and the guardrail supports as follows;

- Platforms will be entirely planked and decked with space not more than one inch wide between the platforms and uprights
- The platform will not deflect more than 1/60 of the span when loaded
- All platforms will be kept clear of debris or other obstructions
- Wood planks will be inspected to see that there are graded for scaffold use, are sound and in good condition, straight grained, free from saw cuts, splits and holes
- Platforms and walkways will be at least 18 inches in width. When the work area is less than 18 inches wide, guardrails and/or personal fall arrest systems will be used
- Where platforms are overlapped to create a long platform, the overlap will occur only over supports, and will not be less than 12 inches unless the platforms are nailed
- The front edge of all platforms will not be more than fourteen inches from the face of the work without guardrails or PFAS
- A platform greater than 10 feet in length will not extend over its support more than 18 inches, unless it is designed and installed so that the cantilevered portion of the platform is able to support employees without tipping, or has guardrails which block employee access to the cantilevered end
- Don’t cover wood with opaque finishes, other than the edges for making identification
- Coatings will not obscure the top or bottom wood surfaces
- Each end of the platform, unless cleated or otherwise restrained by hooks or equivalent means, will extend over the centerline of its support at least six inches
- Scaffold components manufactured by different manufacturers will not be intermixed unless the components fit together without force and the scaffold's structural integrity is maintained. Scaffold components made of dissimilar metals will not be used together unless a competent person has determined that galvanic action will not reduce the strength of any component

SUPPORT SCAFFOLDS

Supported scaffolds are platforms supported by legs, outriggers beams, brackets, poles, uprights, posts, frames, or similar rigid support. The structural members, poles, legs. posts, frames, and uprights, must be plumb and braced to prevent swaying and displacement.

Supported scaffolds with a height to base width ratio of more than 4:1 must be restrained by guying, tying, bracing or an equivalent means.

The following placements must be used for guys, ties, and braces;

- Install guys, ties, or braces at the closest horizontal member to the 4:1 height and repeat vertically with the top restraint no further than 4:1 height from the top
- Vertically – every 20 feet or less for scaffolds less than three feet wide and every twenty-six feet or less for scaffolds more than three feet wide
- Horizontally – at each end; at intervals not to exceed 30 feet from one end

Supported scaffold poles, legs, posts, frames, and uprights will bear on base plates and mud sills or other adequate firm foundation and will include the following;

- Footings will be level, sound, rigid, and capable of supporting the loaded scaffold without settling or displacement
- Unstable objects will not be used to support working platforms
- Front-end loaders and similar pieces of equipment will not be used to support scaffold platforms unless specifically designed by the manufacturer for such use
- Forklifts will not be used to support scaffold platforms unless the platform is attached to the fork and the fork-lift is not moved horizontally while the platform is occupied

Supported scaffold poles, legs, posts, frames, and uprights will be plumb and braced to prevent swaying and displacement.

SUSPENDED SCAFFOLDS

A suspension scaffold contains one or more platforms suspended by ropes or other non-rigid means from an overhead structure, 1926.450(b), such as the following scaffolds: single-point, multi-point, multi-level, two-point, adjustable, boatswain's chair, catenary, chimney hoist, continuous run, elevator false car, go-devils, interior hung, masons', and stone setters'.

- All support devices must rest on surfaces that can support four times the scaffold load when operating at the rated load of the hoist, or at least one-and-a-half times the load imposed on them by the scaffold at the stall capacity of the hoist, whichever is greater
- A competent person must evaluate all direct connections prior to use to confirm that the supporting surfaces are able to support the imposed load
- Suspension scaffolds must be secured to prevent them from swaying
- Guardrails, a personal fall-arrest system, or both must protect each employee more than 10 feet (3.1 m) above a lower level from falling

- A competent person must inspect ropes for defects prior to each workshift and after every occurrence that could affect a rope's integrity
- When scaffold platforms are more than 24 inches (61 cm) above or below a point of access, ladders, ramps, walkways, or similar surfaces must be used
- When using direct access, the surface must not be more than 24 inches (61 cm) above or 14 inches (36 cm) horizontally from the surface
- When lanyards are connected to horizontal lifelines or structural members on single-point or two-point adjustable scaffolds, the scaffold must have additional independent support lines equal to the suspension lines and have automatic locking devices
- Outrigger beams must be placed perpendicular to their bearing support
- Emergency escape and rescue devices must not be used as working platforms, unless designed to function as suspension scaffolds and emergency systems.
- Tiebacks must be secured to a structurally sound anchorage on the building or structure. Sound anchorages do not include standpipes, vents, other piping systems, or electrical conduit. A single tieback must be installed perpendicular to the face of the building or structure. Two tie-backs installed at opposing angles are required when a perpendicular tieback cannot be installed
- Only those items specifically designed as counterweights must be used
- Counterweights must be secured by mechanical means to the outrigger beams
- Vertical lifelines must not be fastened to counterweight
- Sand, masonry units, or rolls of roofing felt may not be used for counterweights
- The suspension ropes must be long enough to allow the scaffold to be lowered to the level below without the rope passing through the hoist, or the end of the rope configured to prevent the end from passing through the hoist
- Repaired wire may not be used
- Drum hoists must contain no less than four wraps of the rope at the lowest point
- Employers must replace wire rope when the following conditions exist: kinks; six randomly broken wires in one rope lay or three broken wires in one strand in one lay; one third of the original diameter of the outside wires is lost; heat damage; evidence that the secondary brake has engaged the rope; and any other physical damage that impairs the function and strength of the rope
- Suspension ropes supporting adjustable suspension scaffolds must be a diameter large enough to provide sufficient surface area for the functioning of brake and hoist mechanisms
- Suspension ropes must be shielded from heat-producing processes
- Power-operated hoists used to raise or lower a suspended scaffold must be tested by a qualified testing laboratory
- The stall load of any scaffold hoist must not exceed three times its rated load
- The stall load is the load at which the prime-mover (motor or engine) of a power-operated hoist stalls or the power to the prime-mover is automatically disconnected
- Gasoline power-operated hoists or equipment are not permitted

- Drum hoists must contain no less than four wraps of suspension rope at the lowest point of scaffold travel
- Gears and brakes must be enclosed
- An automatic braking and locking device, in addition to the operating brake, must engage when a hoist makes instantaneous change in momentum or an accelerated overspeed.
- Manually operated hoists used to raise or lower a suspended scaffold must be tested an listed by a qualified testing laboratory
- These hoists require a positive crank force to descend

Welding can be done from suspended scaffolds when:

- A grounding conductor is connected from the scaffold to the structure and is at least the size of the welding lead
- The grounding conductor is not attached in series with the welding process or the work piece
- An insulating material covers the suspension wire rope and extends at least 4 feet (1.2 m) above the hoist
- Insulated protective covers cover the hoist
- The tail line is guided, retained, or both, so that it does not become grounded
- Each suspension rope and any other independent lines are insulated from grounding

ACCESS REQUIREMENTS

Access will be provided when scaffold platforms are more than 24 inches above or below the point of access. Direct access is acceptable when the scaffold is not more than 14 inches horizontally and not more than 24 inches vertically from the other surfaces. Crossbraces will not be used as a means of access.

Type of accesses which are permitted: portable ladders tied off to the structure; hook-on ladders; attachable ladders; stairways; stair towers; ramps and walkways; or integral prefabricated frames.

When erecting or dismantling supported scaffolds, a safe means of access will be provided when a competent person has determined the feasibility and analyzed the site conditions.

FALL PROTECTION

Fall protection includes guardrail systems and personal fall arrest systems.

GUARDRAILS

All scaffolds more than six feet above the lower level will protect employees with guardrails on each open side of the scaffold. Guardrails will be installed along the open sides and ends before releasing the scaffold for use by the employees, other than erection or dismantling crews.

Guardrails are not required when:

- The front end of all platforms are less than 14 inches from the face of the work
- When employees are plastering and lathing 18 inches or less from the front edge

Materials such as steel or plastic banding will not be used for toprails or midrails.

FALL ARREST SYSTEMS

Personal fall arrest systems include harnesses, components of the harness/belt such as Dee-rings, and snap hooks, lifelines, and anchorage point. Employees working on scaffolds ten (10) feet or more above ground/floor level will use fall protection in accordance with Solomon Corporation's Fall Protection Program.

The following 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 a ¾ 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 scaffold	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

CLEARANCE DISTANCES BETWEEN SCAFFOLDS AND POWERLINES

The following table provides the clearance distances between scaffolds and powerlines, or any other conductive material, while being erected, used, dismantled, altered or moved.

Insulated Lines Voltage	Minimum Distance	Alternatives
Less than 300 volts	3 feet	
300 to 50 kv	10 feet	
More than 50 kv	10 feet plus 0.4 inches for each 1 kv over 50 kv	Two times the length of the line insulator, but never less than 10 feet
Uninsulated Lines Voltage	**Minimum Distance**	**Alternatives**
Less than 50 kv	10 feet	
More than 50 kv	10 feet plus General Rule: 0.4 inches for each 1 kv over 50 kv	Two times the length of the line insulator, but never less than 10 feet

However, scaffolds can be moved closer if it is necessary for the performance of work, provided the power lines are de-energized or protective coverings are installed to help prevent accidental contact.

POLICY

Solomon Corporation has adopted this policy to inform employees of the written Safety and Environment Management System (SEMS) Hazard Analysis (JSA) plan. This ensures the safety and health of the employees in the workplace pursuant to the following regulations.

REFERENCES

- 30 CFR 250.1911
- API RP75, Section 3
- API Recommended Practice 14J
- Solomon Corporation SEMS Hazard Analysis (Facility) policy
- Solomon Corporation Hazard Identification and Risk Assessment Policy

RESPONSIBILITIES

Solomon Corporation will have resources available to perform job safety analyses (JSA) at all offshore facilities that Solomon Corporation operates or provide contracted services to.

Corporate EH&S Manager Mike Dahl must conduct a Hazards Analysis (JSA) on each operation and task recognized in the SEMS. Such analysis must be appropriate to the complexity of the operation and must identify, evaluate, and manage the hazards involved in the operation and task identified in the SEMS Hazard Analysis (Facility)

Employees are responsible for knowing the policy and identifying operations and tasks that are potentially subject to this policy.

TRAINING

Corporate EH&S Manager Mike Dahl and Solomon Corporation employees must receive training (from an internal or external resource) to understand the JSA development process, be able to identify tasks that require a JSA and participate in development of JSAs.

PROCEDURES

JOB SAFETY ANALYSIS

Solomon Corporation requires a Job Safety Analysis (JSA) to be developed for each identified operation and task identified in the SEMS program.

A copy of each task's JSA is maintained on the job site and readily accessible to employees.

Corporate EH&S Manager Mike Dahl or a supervisor or person in charge (PIC) appointed by Corporate EH&S Manager Mike Dahl is responsible for approving JSA's prior to commencing work.

SAFETY AND HEALTH HAZARDS

Every JSA created by Solomon Corporation will identify, analyze and record existing or potential safety and health hazards associated with each step.

OUTLINE THE STEPS OR TASKS.

When beginning a Job Hazard Assessment, watch the employee perform the job and list each step as the worker takes it. Be sure to record enough information to describe each job action without getting overly detailed. Avoid making the breakdown of steps so detailed that it becomes unnecessarily long or so broad that it does not include basic steps. It is valuable to get input from other workers who have performed the same job. Later, review the job steps with the employee to make sure something was not omitted. Point out that the job itself is being evaluated, not the employee's job performance. Include the employee in all phases of the assessment, from reviewing the job steps and procedures to discussing uncontrolled hazards and recommended solutions.

RECOMMENDED ACTIONS

The JSA must identify, analyze, recommend, and record appropriate actions and countermeasures, effective in eliminating and reducing identified hazards.

HOW TO CORRECT OR PREVENT HAZARDS

After reviewing the list of hazards with the employee, consider what control methods will eliminate or reduce them. The most effective controls are engineering controls that physically change a machine or work environment to prevent employee exposure to the hazard. If this is not feasible, administrative controls may be appropriate.

This may involve changing how employees do their jobs. Discuss recommendations with all employees who perform the job and consider their responses carefully. If it is planned to introduce new or modified job procedures, be sure they understand what they are required to do and the reasons for the changes.

The order of precedence and effectiveness of hazard control is the following:

1. Elimination
2. Substitution
3. Isolation
4. Reduction / Engineering Controls
5. Information / Administrative Controls
6. Personal Protective Equipment

ENGINEERING CONTROLS INCLUDE THE FOLLOWING:

- Elimination/minimization of the hazard – Designing the facility, equipment, or process to remove the hazard, or substituting processes, equipment, materials, or other factors to lessen the hazard
- Enclosure of the hazard using enclosed cabs, enclosures for noisy equipment, or other means
- Isolation of the hazard with interlocks, machine guards, blast shields, welding curtains, or other means
- Removal or redirection of the hazard such as with local and exhaust ventilation

ADMINISTRATIVE CONTROLS INCLUDE THE FOLLOWING

- Written operating procedures, work permits, and safe work practices
- Exposure time limitations (used most commonly to control temperature extremes and ergonomic hazards)
- Monitoring the use of highly hazardous materials
- Alarms, signs, and warnings
- The “Buddy” system
- Training

PERSONAL PROTECTIVE EQUIPMENT

Protective equipment such as respirators, hearing protection, protective clothing, safety glasses, and hardhats is acceptable as a control method in the following circumstances:

- When engineering controls are not feasible or do not totally eliminate the hazard
- While engineering controls are being developed
- When safe work practices do not provide sufficient additional protection
- During emergencies when engineering controls may not be feasible

Use of one hazard control method over another higher in the control precedence may be appropriate for providing interim protection until the hazard is abated permanently. In reality, if the hazard cannot be eliminated entirely, the adopted control measures will likely be a combination of all three items instituted simultaneously.

APPROVAL

The supervisor of the person in charge of the task must approve the JSA prior to the commencement of the work.

REVISIONS

The job safety analyses (JSAs) must be updated when an internal audit is conducted to confirm that they are consistent with the current operations on the facility and when equipment or operations change.

POLICY

Solomon Corporation has adopted this policy for the investigation of all incidents with serious safety or environmental consequences and require investigation of incidents that are determined to possess the potential for serious safety or environmental consequences.

REFERENCES

- 30 CFR 250.1919
- API RP75, Section 11

RESPONSIBILITIES

Solomon Corporation will have emergency control plans in place and ready to implement.

Corporate EH&S Manager Mike Dahl is responsible for ensuring that the following policy for response and control, training, personal protective equipment, evidence gathering and the incident investigation policy is enforced.

Assigned Investigators are responsible for fulfilling their duties within the time frame established for the incident investigation. Assigned investigators should include personnel with knowledge of the process or procedure affected by the event.

TRAINING

Investigators will be trained in investigation techniques. They will be taught:

- Evidence gathering techniques and importance
- How to establish an event timeline
- Interviewing techniques
- Hazardous conditions and hazardous practices
- Causal factors
- Root causes

PROCEDURES

Incident investigations must be initiated as promptly as possible, with due regard for the necessity of securing the incident scene and protecting people and the environment. Incident investigations must be conducted by personnel knowledgeable in the process involved, investigation techniques, and other specialties that are relevant or necessary. Solomon Corporation will establish a corrective action program based on the findings of the investigation in order to analyze incidents for common root causes.

INVESTIGATING:

As part of the Incident Investigation part of its SEMS, Solomon Corporation will investigate all incidents with serious safety or environmental consequences in accordance with its procedures.

The incident investigations will be conducted by personnel knowledgeable in:

- Investigation techniques
- Processes involved
- Relevant specialties to the operation

COMPONENTS OF THE INCIDENT INVESTIGATION

The Incident Investigation part of Solomon Corporation will consist of, at the minimum:

- The nature of the incident
- Human or other contributing factors leading to the incident
- Recommended changes identified as a result of the investigation

CORRECTIVE ACTION PLAN

Solomon Corporation's SEMS Incident Investigation Plan includes a corrective action plan to follow all incident investigations, based on its results.

The investigation needs to be expedited, and findings and recommendations resolved in a timely manner.

Corrective action programs must analyze incidents for root causes, and must at least:

- Retain incident investigation findings for future hazard analysis or two years; whichever is greater
- Determine and document responses to findings to ensure corrective action plans are completed
- Implement a system to distribute incident investigation findings to appropriate personnel and/or similar facilities throughout the organization

POLICY

Solomon Corporation has adopted this policy to identify and control the hazards associated with changes, such as changes in equipment, procedures, materials or personnel. It establishes the changes that will trigger the formal MOC process, as well as the methods by which such formal changes will be initiated, tracked, completed and documented.

REFERENCES

- 30 CFR 250.1912
- API RP75, Section 4

RESPONSIBILITIES

Solomon Corporation will have emergency control plans in place and ready to implement.

Corporate EH&S Manager Mike Dahl must develop and implement written MOC procedures for changes in facilities, operating procedures and personnel

Assigned Investigators are responsible for fulfilling their duties within the time frame established for the incident investigation. Assigned investigators should include personnel with knowledge of the process or procedure affected by the event.

TRAINING

Investigators will be trained in investigation techniques: evidence gathering and importance; establishing an event timeline; interviewing; hazardous conditions and hazardous practices; causal factor; root causes.

PROCEDURES

MANAGEMENT OF CHANGE PROCESS

It is the policy of Solomon Corporation that the management of change process must be completed for all changes, except replacement in kind. Therefore the management of change process will be used for all permanent and temporary changes to Solomon Corporation*'s* work processes, equipment, facilities, revising operating procedures, safe work practices and training programs.

Management of Change policies and procedures will be utilized whenever there is a change in supervisors, operating procedures, safe work practices, and training programs.

PRE-PROJECT REVIEW

Before initiating any changes to facilities, equipment, or work processes, a review must be completed to ensure that the Health, Safety, and Environmental, and/or quality standards can be maintained while staying on budget.

PRE-STARTUP REVIEW

Before placing any changes in service to facilities, equipment, or work processes, a pre-startup review must be completed to ensure that all requirements outlined in the pre-project review have been addressed, and to ensure that any other possible hazardous conditions are assessed

Solomon Corporation will conduct a hazard assessment when a change occurs in the construction plan or external influences impact the manner in which the work will be conducted. This includes, but is not limited to:

- Changes in policy or objectives
- Operating licenses and permits, legal, and regulatory requirements
- Changes in procedures, practices, and rules
- Changes to controlled documentation
- Work processes or methods
- Any change other than exact replacement in kind to equipment, processes, hardware, or software
- Changes to operating boundaries (e.g. operating envelopes)
- Temporary changes that specify the period of time a change will be in effect

The management of change process covers all activities including the initial request, implementation, review, and closure of a change. Proposed changes will be managed by Corporate EH&S Manager Mike Dahl and forwarded to the Owner's management for approval or disapproval.

The following items will be included in the management of change proposal:

- Technical basis for the change
- Impact of the change on the health and safety of personnel
- Impact of change on the supplied tools and equipment
- Necessary modifications to existing or new operating procedures
- Methodology used to analyze the impact of the change
- Analysis of safety, health and environmental considerations
- Communicating the proposed change and consequences to the appropriate personnel

PARTICIPATION

Solomon Corporation will inform and train all interested parties whose job tasks are affected by a change in operations in the pre-project and pre-start-up reviews.

This may include, but is not limited to operations, engineering, information technology, sales/marketing, quality assurance, and health, safety and environmental.

POLICY

Solomon Corporation has adopted this program to ensure the signaler is fully qualified and suitably prepared to ensure the safety of employees.

REFERENCES

- §1926.1401 - Cranes & Derricks in Construction, Definitions
- §1926.1419 - Cranes & Derricks in Construction Signals, General Requirements
- §1926.1420 - Cranes & Derricks in Construction, Signals--radio, telephone or other electronic transmission of signals
- §1926.1428 - Cranes & Derricks in Construction, Signal Person Qualifications
- Policy for Assembly / Disassembly of Construction Cranes
- Policy for Crawler, Locomotive, and Truck Cranes

RESPONSIBILITIES

Solomon Corporation will ensure that a qualified signal person will be provided in each of the following situations:

- The point of operation, meaning the load travel or the area near or at load placement, is not in full view of the operator
- When the equipment is traveling, the view in the direction of travel is obstructed
- Due to site specific safety concerns, either the operator or the person handling the load determines that it is necessary

QUALIFIED SIGNAL PERSON

Solomon Corporation will ensure that each signal person is qualified. Each signal person must:

- Know and understand the type of signals used. If hand signals are used, the signal person must know and understand the Standard Method for hand signals
- Be competent in the application of the type of signals used
- Have a basic understanding of equipment operation and limitations, including the crane dynamics involved in swinging and stopping loads and boom deflection from hoisting loads
- Demonstrate that he/she meets the requirements through an oral or written test, and through a practical test that is given by a qualified evaluator:
  - *Third party qualified evaluator.* The signal person has documentation from a third party qualified evaluator showing that he or she meets the qualification requirements
  - *Employer's qualified evaluator* (not a third party). The *employer's qualified evaluator* assesses the individual, determines the individual meets the qualification requirements, and provides documentation of that determination. This assessment may not be relied on by other employers

SAFE PRACTICES

TYPES OF SIGNALS

It is the policy of Solomon Corporation that signals to operators must be by hand, voice, audible, or new signals.

When using hand signals, the Standard Method must be used.

- Exception: Where use of the Standard Method for hand signals is infeasible, or where an operation or use of an attachment is not covered in the Standard Method, non-standard hand signals may be used
- Suitability The signals used (hand, voice, audible, or new), and means of transmitting the signals to the operator (such as direct line of sight, video, radio, etc.), must be appropriate for the site conditions

COMMUNICATION

During operations requiring signals, the ability to transmit signals between the operator and signal person must be maintained. If that ability is interrupted at any time, the operator must safely stop operations requiring signals until it is reestablished and a proper signal is given and understood.

If the operator becomes aware of a safety problem and needs to communicate with the signal person, he/she must safely stop operations. Operations must not resume until the operator and signal person agree that the problem has been resolved.

All device(s) used to transmit signals must be tested on site before beginning operations to ensure that the signal transmission is effective, clear, and reliable.

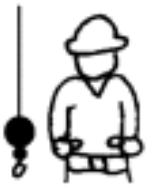
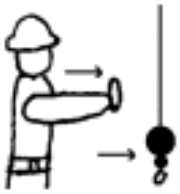
Signal transmission must be through a dedicated channel, except:

- Multiple cranes/derricks and one or more signal persons may share a dedicated channel for the purpose of coordinating operations
- Where a crane is being operated on or adjacent to railroad tracks, and the actions of the crane operator need to be coordinated with the movement of other equipment or trains on the same or adjacent tracks
- The operator's reception of signals must be by a hands-free system
- Stop Signals
- Only one person may give signals to a crane/derrick at a time. Anyone who becomes aware of a safety problem must alert the operator or signal person by giving the stop or emergency stop signal
- Operators are required to obey a stop or emergency stop signal
- Operators are required to obey a stop or emergency stop signal

STOP SIGNALS

Only one person may give signals to a crane/derrick at a time. Anyone who becomes aware of a safety hazard must alert the operator or signal person by giving the stop or emergency stop signal.

STANDARD SIGNALS

STOP – With arm extended horizontally to the side, palm down, arm is swung back and forth.	**EMERGENCY STOP** – With both arms extended horizontally to the side, palms down, arms are swung back and forth.	**HOIST** – With upper arm extended to the side, forearm and index finger pointing straight up, hand and finger make small circles.
RAISE BOOM – With arm extended horizontally to the side, thumb points up with other fingers closed.	**SWING** – With arm extended horizontally, index finger points in direction that boom is to swing.	 **RETRACT TELESCOPING BOOM** – With hands to the front at waist level, thumbs point at each other with other fingers closed.
RAISE THE BOOM AND LOWER THE LOAD – With arm extended horizontally to the side and thumb pointing up, fingers open and close while load movement is desired.	**DOG EVERYTHING** – Hands held together at waist level.	**LOWER** – With arm and index finger pointing down, hand and finger make small circles.
LOWER BOOM – With arm extended horizontally to the side, thumb points down with other fingers closed.	**EXTEND TELESCOPING BOOM** – With hands to the front at waist level, thumbs point outward with other fingers closed.	 **TRAVEL/TOWER TRAVEL** – With all fingers pointing up, arm is extended horizontally out and back to make a pushing motion in the direction of travel.

POLICY

Solomon Corporation has adopted this policy to inform employees of the Stop Work Authority. This ensures the safety and health of the employees.

RESPONSIBILITIES

Corporate EH&S Manager Mike Dahl is responsible for ensuring that the following policy is enforced.

TRAINING

It is the determination of Solomon Corporation to ensure that employees will receive Stop Work Authority training before initial assignment. The training will be documented, including the employee name, the dates of training and subject.

PROCEDURES

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

It is the policy of Solomon Corporation that no work will resume until all stop work issues and concerns have been adequately addressed.

STOP WORK INTERVENTION

Solomon Corporation ensures that employees will not be reprimanded for issuing a stop work intervention.

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

ROLES AND RESPONSIBILITIES

All employees of Solomon Corporation are responsible to initiate a Stop Work Intervention when warranted and management is responsible to create a culture where Stop Work Authority is exercised freely.

STOP WORK AUTHORITY STEPS

The steps to a Stop Work Authority for Solomon Corporation include: stop, notify, correct, and resume.

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

DOCUMENTATION

It is the policy of Solomon Corporation that all Stop Work Interventions will be documented for lessons learned and corrective measures to be put in place.

STOP WORK REPORTS

Solomon Corporation ensures that Stop Work reports will be reviewed by supervision in order to:

- Measure participation
- Determine quality of interventions and follow-up
- Trend common issues
- Identify opportunities for improvement
- Facilitate sharing of learning's

FOLLOW UP IMPORTANCE

It is of high importance of Solomon Corporation to conduct a follow-up after a Stop Work Intervention has been initiated and closed.

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

RECORD OF EMPLOYEE TRAINING

Employees have been made aware of the procedure for Stop Work Intervention and have been trained in the appropriate actions as defined in the procedures of this program. The following is a list of employees who have received training on Stop Work Authority procedures.

Topics in this training include: Identification, stop work authority, resumption of work, reports review, roles & responsibilities, stop work intervention steps, documentation, follow-up.

Printed Name	Signature	Date

POLICY

Solomon Corporation has adopted this policy for Subcontractor Management from industry standards and best practices.

RESPONSIBILITIES

Corporate EH&S Manager Mike Dahl is the assigned Company Supervisor responsible for ensuring the following procedures, practices, and rules are implemented and enforced.

PROCEDURES

PREQUALIFICATION

Corporate EH&S Manager Mike Dahl will ensure that all prospective subcontractors be pre-qualified through the review of their safety programs, safety training documents, and safety statistics. Proposed subcontractors will complete and submit a Contractors Prequalification Form from which a Subcontractor/Supplier Quality Rating Report will be completed. The Contractor's Prequalification Form must be complete and all requested attachments provided.

SELECTION

Corporate EH&S Manager Mike Dahl will utilize acceptable safety matrixes to be used as a criteria for selecting subcontractors and will be based upon several considerations including but not limited to:

- Prior working relationships
- Quality Rating Report scores such as: TRIR, EMR, DART
- Audits of current work in progress
- Availability of contractors in the area

The contractor that receives the best overall review will be forwarded to the Owner's representative for review and approval.

PRE-JOB

The selected subcontractor will provide a training matrix with individual employee names and the areas of completed training for employees. The subcontractor will also identify Competent Persons and the areas of their competency. The subcontractor will be included in pre-job meetings or kick-off meetings, and safety orientations.

ON-SITE

The subcontractor will notify Solomon Corporation Site Safety a minimum of 24 hours prior to the arrival of new employees on-site so that arrangements can be made to provide the required orientations. Employees must meet all of the requirements of the Site Safety Plan, including the training and orientation.

The Subcontractor will be required to meet all hazard analysis requirements and request the safe work permits as required by this plan. The subcontractor will be included in the audits and inspections on-site and are expected to immediately correct any “At Risk” behaviors or hazards identified that are within the subcontractor’s scope of work and ability to correct. Employees of subcontractors have the right to refuse any work they deem to be hazardous.

All subcontractors will be included in tailgate safety meetings, job safety analysis or hazard assessments, and on-the-job safety inspections.

The subcontractor will be required to adjust their “Safe Work Practices” in order to prevent excessive Near Hits and/or Near Misses. If the subcontractor is unable to perform their scope of work without “At Risk” behavior or creating hazardous working conditions on the site, the subcontractor’s working element will be required to leave the site until an abatement plan can be prepared and agreed upon.

POST-CONTRACT

Upon completion of the work, a post-job subcontractor safety performance review and evaluation will be completed to determine the safety performance of the subcontractor and provide reference for future job consideration.

MANAGEMENT OF CHANGE

Solomon Corporation will conduct a hazard assessment when a change occurs in the construction plan or external influences impact the manner in which the work will be conducted. This includes, but is not limited to:

- Changes in policy or objectives
- Operating licenses and permits, legal, and regulatory requirements
- Changes in procedures, practices, and rules
- Changes to controlled documentation
- Work processes or methods
- Any change other than exact replacement in kind to equipment, processes, hardware, or software
- Changes to operating boundaries; e.g. operating envelopes
- Temporary changes that specify the period of time a change will be in effect

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The following items will be included in the management of change proposal:

- Technical basis for the change
- Impact of the change on the health and safety of personnel
- Impact of change on the supplied tools and equipment
- Necessary modifications to existing or new operating procedures
- Methodology used to analyze the impact of the change

Open Letter to All Subcontractors

Date: _____

Greetings Prospective Subcontractor:

As part of Solomon Corporation's continuing commitment to safety, we are assessing our potential subcontractors' compliance with all applicable safety requirements. Enclosed are the materials you will need to complete this process, including a questionnaire that will assist us in assessing your safety programs. We are asking all subcontractors "Invited to Bid" to complete the attached questionnaire. The matrix included in this package is designed to assist you in determining which programs are applicable to your operations.

Please contact me _____

or _____ with any questions or concerns.

I am in and out of the office so please leave me a voice mail and I will get back to you when I return.

Please forward the completed forms and attach a copy of your safety manual by: _____

TO:

Company: _____

Attn: _____

Address: _____

City/State/Zip: _____

Phone: _____

FAX: _____

E-mail: _____

Regards,

_____

Construction Manager

Subcontractor Safety & Health Questionnaire

Date: _____

Company Name: _____ Number of Employees: ____

Address: _____

City, State, and Zip Code: _____

Company Contact: _____ Title: _____

Telephone #: ( ) _____ FAX #: ( ) _____

Form Completed By: _____

Officer Name & Signature: _____

Please describe the services that your Company provides:

_____

_____

1. Has your Company received any inspections from a regulatory agency in the last three (3) years? ___ yes ___ no

If yes, provide details: _____

_____

_____

2. Has your Company received any citations from a regulatory agency during the last three (3) years? ___ yes ___ no
3. Does your Company have regularly scheduled, documented employee safety meetings? (Tailgate/Toolbox) ___ yes ___no

If yes, how often? _____

What is covered at safety meetings? _____

_____

_____

4. Does your Company perform equipment checks on all equipment? ___ yes ___no

If yes, are records maintained? ___ yes ___ no

5. Does your Company perform Job Hazard Analysis (JHA)? ___ yes ___no

6. Does your Company provide & require employees to use the following Personal Protective Equipment (PPE)?

Personal Protective Equipment	Yes	No
Hard Hats		
Safety Shoes/Boots		
Eye & Face Protection		
Hand Protection		
Hearing Protection		
Fall Protection		
Respiratory Protection		

7. In addition to regulatory required Personal Protective Equipment, what other PPE is required or supplied? If any, please list:

_____

8. Indicate the circumstances in which your Company's employees may be subject to alcohol/drug screening:

___ Never ___ Reasonable Cause/Suspicion ___ Periodic

___ Random ___ Post Accident ___ Follow-Up

___ Return to Duty ___ Other: _____

Do you have a documented Substance Abuse Prevention Program available for review?

___ yes ___ no

9. Does your Company have a policy requiring written accident/incident reports (injuries, property damage, etc.)? ___ yes ___ no
10. Does your Company document, investigate, and discuss "Near Miss Incidents"? ___ yes ___ no

12. Please respond to all items below with YES, NO, or N/A (not applicable). Do not leave any items unanswered.

OSHA Programs/Training	Program Written & Documented?	Training Conducted By (In-House or Outsourced)	Frequency of Employee Training	Documented Individual Employee Training?
OSHA Programs				
Confined Spaces				
Electrical Safety (qualified)				
Electrical Safety (non-qualified)				
Excavation & Shoring				
Fire Protection & Prevention				
Fall Protection				
First Aid/CPR				
HAZCOM				
Heat Stress Prevention				
Lifting/Mobile Equipment				
Lockout/Tagout				
Noise/Hearing Conservation				
PPE				
Respiratory				
Scaffolds/Ladders				
Trenching/Shoring				
Welding, Cutting, & Hot Work				

13. Please provide any additional information on other industry-specific programs or training, including written procedures, which your Company provides to employees:

_____

_____

_____

14. Does your Company have a Safety & Health Program with clearly written safety policy that is endorsed & enforced by upper management? ___ yes ___ no
15. Does your Company perform documented safety audits/reviews? ___ yes ___ no
16. Who in your Company is responsible for coordinating your health, safety, and environmental program?
17. If your Company has more than ten (10) employees, please attach with this questionnaire your Company's OSHA 300 Log for the last three (3) years.
18. Does your Company use subcontractors? ___ yes ___ no

    If yes, explain: _____

    _____

    Are your Subcontractor's written safety programs and procedures available for review?

    ___ yes ___ no

19. Are all documents & records pertaining to this questionnaire available for audit? ___ yes ___ no
    If no, please explain:

    _____

    _____

20. Please attach your current/completed Health and Safety Program along with other written safety programs for review. A disk or CD-ROM is acceptable.
21. Comments:

    _____

    _____

    _____

    _____

    _____

    _____

    _____

    _____

Safety Contract

Following are Safety Requirements as stated in your subcontract agreement: Subcontractor agrees to comply with prevailing safety regulations, whether OSHA, Contractor Policies, Owner Policies, or otherwise imposed while working on the project. Subcontractor also agrees to be bound by any rule or regulation needed during the course of the project. Subcontractor further agrees:

- To provide a safe work area to all his employees by providing, and requiring the use of, the required Personal Protective Equipment such as: hard hats, safety glasses, respirators, dust masks, face shields, etc
- Subcontractor's employees shall wear long or short sleeve shirts, long pants, and sturdy work shoes, boots, or when required, steel-toed boots
- To provide this Contractor with proper documentation on employee training for specific tools and equipment such as powder actuated tools, air guns (nail guns), forklifts, scaffolding, scissors lifts, boom lifts, and any safety plan applicable to their scope of work
- Be responsible for implementing and administering their safety program and must provide a copy of said program to this Contractor including a Job Hazard Analysis (inspections) and documentation on weekly job site safety meetings with its employees
- To implement daily hazard recognition for its employees by using a Pre-Task Planner form for their daily scope of work
- To provide its employees with safe tools and equipment and to safely perform the work under this agreement with high regard for the safety of its employees and others
- To provide a designated person for a weekly contractor safety coordination meeting

Subcontractor shall:

- Immediately report to this Contractor in writing and remedy any accidents/illness, near misses, or unsafe conditions brought to its attention or discovered by subcontractor employees, involving its work and/or posing a danger to persons or property
- Not permit its employees at the project to use publicly audible radios or to wear headsets except as are used for job site communications
- Prior to bringing on site a substance or material for which a Safety Data Sheet (SDS) is required by federal, state, and local regulations, subcontractor shall provide said SDS to Contractor

This Contractor is a Drug-free Company & provides such a workplace for its employees.

Subcontractor shall provide this Contractor, prior to beginning scope of work, with current documentation of subcontractor's drug testing policy or program (i.e. pre-hire and random testing). The subcontractor will conduct random drug testing for all of their employees throughout the course of the project. All subcontractors' employees shall attend a Project Safety Orientation on the first day of work on the job site.

_____	_____	_____	_____
Subcontractor Name	Signature	Title	Date

POLICY

Solomon Corporation has adopted this program for the safety of employees when working in or around trenches and excavations

REFERENCES

- *§1926.651* – Specific Excavation Requirements
- §1926.652 – Requirements for Protective Systems

RESPONSIBILITIES

Solomon Corporation will provide the resources necessary for the implementation of this program. Solomon Corporation will implement and enforce the engineering controls, procedures, and work practices to ensure that no employee is exposed to hazards from excavations being performed or existing at the jobsite.

Corporate EH&S Manager Mike Dahl is designated as the Competent Person for Solomon Corporation in authority over all excavation operations. Corporate EH&S Manager Mike Dahl will ensure all safety measures and systems are in place and correctly installed, all safety procedures are adhered to, and make regular inspections of excavations, trenches, and the general work site.

COMPETENT PERSON RESPONSIBILITIES

- Will maintain a copy of 29 CFR 1926- Subpart "P" and have a comprehensive knowledge of OSHA's Excavation Standards. In addition, competent persons will have a general knowledge of all applicable construction standards
- Conduct pre-job site review to develop a job plan that ensures a safe, efficient job process. A competent person will evaluate difficult sloping and shoring problems (i.e. manholes, etc) prior to commencing the work
- Perform daily inspections of equipment and trench conditions at the start of each shift or as needed by changing conditions
- Competent person has the duty and responsibility to remove all employees from hazardous condition and effect all changes necessary to ensure safety
- Categorize soil conditions and conduct visual and manual tests to determine stability of soil and surrounding trench conditions. NOTE: If visual and manual tests are not performed, soils will be classified as type "C"
- Maintain on-site records of protection systems
- Determine the appropriate protection system to be used and oversee installation
- Verify that a competent person designs ramps and walkways for employee use in accordance with OSHA standards

- Competent person will verify proper design of structural equipment ramps and walkways, or will contact an RPE to design structural equipment ramps and walkways
- Hold tailgate safety meetings with all crew members prior to trenching and shoring operations. Subsequent meeting will be held as conditions warrant
- A competent person will be on-site at all times during excavation/trenching operations
- Assure that appropriate emergency rescue equipment is available to meet existing or potential conditions
- Monitor use of water removal equipment
- Test for oxygen presence and air quality in excavations as necessary. Competent persons will be qualified in identifying confined/hazardous spaces due to the presence of flammable/combustible gases, toxics, oxygen deficiency and oxygen enriched environments
- Competent person will consult with RPE for trenches over 20', specially designed shoring bracing or underpinning or when excavation endangers nearby structures

NOTE: Competent persons will ensure that all trenches are properly classified, sloped, or shored in accordance with the appendices of 29 CFR 1926- Subpart "P", or in accordance with manufactures tabulated data. Furthermore, competent persons will consult with a registered professional engineer (RPE) obtaining written guidance whenever the work exceeds 20 feet in depth, or the work will require control measures not specified in the standard.

SUPERVISORS ARE RESPONSIBLE FOR:

- Establishing and maintaining safe and healthful working conditions
- Being familiar with excavation safety and health hazards to which their employees are exposed, how to recognize them, the potential effects these hazards have on the employees, and rules, procedures and work practices for controlling exposure to those hazards
- Setting good examples, instructing their employees, making sure they fully understand and follow safe procedures

EMPLOYEES:

- No employee is expected to undertake a job until he/she has received instructions on how to do it properly and safely, and is authorized to perform the job
- No employees should undertake a job that appears to be unsafe
- Mechanical safeguards must always be in place and kept in place
- Employees are to report to a superior or designated individual all unsafe conditions encountered during work
- Personal protective equipment must be used when and where required, and properly maintained

TRAINING

Employees who are involved in the excavation operation and exposed to excavation operation hazards will be trained in the excavator notification and excavation practices. When Solomon Corporation has reason to believe that an employee lacks the skill or understanding needed for safe work involving excavation practices, Corporate EH&S Manager Mike Dahl will retrain each such employee so that the requisite proficiency is regained. Retraining is required in at least the following situations:

- Where changes at the worksite present a hazard about which an employee has not been previously trained
- Where inadequacies in an affected employee's work involving excavations indicate that the employee has not retained the requisite proficiency

The employer will document that each employee has received the training. This documentation will be made when the employee demonstrates proficiency in the work practices involved and will be maintained for the duration of the employee’s employment. The documentation will contain the content of the training, each employee’s name, and dates of training.

SAFE PRACTICES

Solomon Corporation will implement and enforce the following engineering controls, procedures, and work practices to ensure that no employee is exposed to hazards from excavations being performed or existing at the jobsite:

- Corporate EH&S Manager Mike Dahl will ensure that all employees are trained in and familiar with required work practices and excavation procedures to safeguard personnel involved in trenching operations or who work in the vicinity of excavation operations
- Employees conducting trenching and excavation operations will be protected from cave-in hazards through benching, sloping, shoring, scaling loose material, or trench shields/boxes
- Utility operators will be contacted at least 48 hours before work is to begin and underground installations located prior to the commencement of any excavation work. When excavations are approaching any located utility line, equipment operations will be stopped no closer than 3 feet from the suspected location, and the utility will be positively located by careful hand digging, prior to the resumption of machine operations
- Any utilities which are uncovered as a result of excavation operations will be protected and suitably supported during work progress, prominently marked for location and hazard, and will be carefully backfilled as soon as possible
- Trench excavations will have access and egress ladders, ramps, or stairs provided for employees on any excavation that is 4 feet or more in depth. Ladders will be located within 25 feet of the workers and will extend to a height of at least 3 feet above the excavation. Lateral travel along the wall of a trench to a ladder or other means of egress will not exceed 25 feet
- Walkways will be provided where employees or equipment are required or permitted to cross over excavations. Regulation guardrails will be installed where walkways are elevated 6 feet or more above lower levels

- Employees are not permitted underneath loads handled by lifting or digging equipment. Personnel will be required to stand away from any vehicle being loaded or unloaded to avoid being struck by any equipment, spillage, or falling materials. Operators may remain in the cabs of vehicles being loaded or unloaded when the vehicles are equipped with adequate overhead protection for the operator during loading and unloading operations
- Tests will be conducted for hazardous atmospheres and air contaminants (oxygen, flammable gases, etc.) and provide ventilation where necessary
- In excavations where a hazardous atmosphere, to include an oxygen deficient atmosphere, exists or could reasonably be expected to exist, such as in excavations in landfill areas or excavations in areas where hazardous substances are stored nearby, the atmospheres in the excavation will be tested before employees enter excavations greater than 4 feet in depth
- Proper respiratory protection will be provided where necessary for personnel exposed to hazardous atmospheres above Permissible Exposure Limits (PEL). Where ventilation is used to control exposure to hazardous atmospheres, continued testing will be used to monitor levels of hazardous atmospheres
- Employees are not permitted to work in excavations in which there is accumulated water, or in excavations in which water is accumulating, unless adequate precautions such as special support or shield systems to protect from cave-ins, water removal to control the level of accumulating water, or use of a safety harness and lifeline have been taken to protect employees against the hazards posed by water accumulation
- An adequate system of shoring, benching, or sloping in accordance with specifications in §1926.652 and appendices A and C of OSHA standards for excavation operations will be provided for any excavation over 5 feet in depth, or any excavation which has been inspected and is believed unsafe to enter without a protective system. Inspections and determination of the type of protective system used will be done by Corporate EH&S Manager Mike Dahl and based on soil type, density, moisture content, and other factors which might affect the performance of protective systems
- Protection of employees with regard to soil classifications includes:
  - The determination of soil types and special considerations will be done in specific measures
  - Shoring, sloping, shield, and excavation will be installed as needed
  - Shoring equipment will not be subjected to excessive forces and be installed to protect employees from lateral loads
  - Timber shoring or aluminum hydraulic shoring will be determined according to appendices A & C of the OSHA standard
  - The devices used will be properly maintained and in good repair. If inspection reveals damage or defect, shoring equipment will be tagged and immediately removed from service
  - Employees will be protected from hazards of falling, rolling, or sliding materials or equipment
  - Personnel are prohibited from being within the shield when installing or removing the shield.
  - All shields used will be designed to resist calculated trench forces

INSPECTIONS

- A competent person designated by Corporate EH&S Manager Mike Dahl will conduct an inspection of worksites daily, prior to any employee entering an excavation to ensure that safety measures are in place and proper procedures for safety are being observed. Inspections of the excavation site will be made daily prior to commencement of work, regularly during work operations, in the event an occurrence takes place (such as inclement weather) which might pose a hazard to commencing, and at the cessation of work to ensure barricades and appropriate safety measures are in place before leaving the site
- In the event an inspection reveals the possibility of a cave-in, failure of a protective system, hazardous atmosphere, or any threat to the safety of personnel, the excavation will immediately be evacuated until corrections are made to the satisfaction of Corporate EH&S Manager Mike Dahl

LOCATING UNDERGROUND UTILITY INSTALLATIONS

- Solomon Corporation will not excavate in a street, highway, public place, a private easement of a public utility, or near the location of a public utility facility owned, maintained, or installed on a customer's premises, without having first ascertained the location of all underground facilities of a public or private utility in the proposed area of excavation
- Upon receiving the information from the public utility, Solomon Corporation personnel will exercise reasonable care when working in close proximity to the underground utilities. If the utilities are or likely to be exposed, only hand digging will be employed in such circumstances and any support reasonably necessary for protection of the utilities will be provided on the construction site.
- When any contact with or damage to any pipe, cable, or any other underground utility occurs, Solomon Corporation will immediately notify the utility company. If an energized electrical cable is severed, an energized conductor is exposed, or dangerous fluids or gases are escaping from a broken line, Corporate EH&S Manager Mike Dahl will evacuate personnel from the immediate area until the utility company representative arrives
- While an excavation is open, underground utilities will be protected, supported, or removed as necessary to safeguard employees

SURFACE ENCUMBRANCES

- All surface encumbrances such as trees, boulders, rock fragments, or other obstructions whose movement could cause injury to an employee will be removed or supported
- Excavations that personnel are required to enter will have spoil piles and other material stored and retained not less than 2 feet from the excavation edge
- When a shoring system is used, the system will be designed and used to resist the added pressure when heavy equipment, material handling equipment, or material is located near an excavation
- When mobile equipment is utilized or permitted adjacent to an excavation where the operator's vision is restricted, stop logs, barricades, or a signal person will be used

ACCESS AND EGRESS

- Lateral travel along the wall of a trench to a ladder or other means of egress will not exceed 25 feet
- An excavation four feet or more in depth and occupied by an employee will be provided with either a ladder extending not less than 3 feet above the top as a means of access or with a ramp meeting the following requirements:
  - Structural ramps that are used solely by employees as a means of access or egress from excavations will be designed by a competent person. Structural ramps used for access or egress of equipment will be designed by a competent person qualified in structural design, and will be constructed in accordance with the design
  - Ramps and runways constructed of two or more structural members will have the members connected together to prevent displacement. Structural members used for ramps and runways will be of uniform thickness
  - Cleats or other appropriate means used to connect runway structural members will be attached to the bottom of the runway or will be attached in a manner to prevent tripping
  - Structural ramps used in lieu of steps will be provided with cleats or other surface treatments on the top surface to prevent slipping
- An earth ramp may be used in place of a ladder if:
  - The ramp material will be stable
  - The sides of the excavation above the ramp will be maintained to the maximum allowable slope or sheeted or shored along the means of egress
  - The degree of angle of the ramp will not be more than 45 degrees
  - Vertical height between the floor of the trench and the toe of the ramp will not exceed 30 inches

EXPOSURE TO VEHICLE TRAFFIC

- Employees exposed to public vehicular traffic will be provided with, and be required to, warning vests or other suitable garments marked with or made of reflectorized or high-visibility material
- A sidewalk will not be undermined unless it is shored to support a live load of at least 125 pounds per square foot
- Employees who are routed from a sidewalk or walkway into a roadway to detour excavations will be protected on all sides by regulation guardrails or barricades
- If an employee or equipment is required or permitted to cross a trench or ditch, a walkway, ramp, or bridge will be provided and will have a designed capacity of not less than 3 times the imposed load. Regulation guardrails will be installed
- If equipment is routed across or onto a roadway, protection will be provided using regulation signals, signs, or barricades
- An open cut into a roadway will be provided with a regulation barricade on all sides. Warning lights will be provided during hours of darkness

WALKWAYS

- Walkways will be provided where employees or equipment are required or permitted to cross over excavations. Regulation guardrails will be provided where walkways are 6 feet or more above lower levels
- A walkway or sidewalk will be kept clear of excavated material and other obstructions
- The walkways and sidewalks will be lighted if used during hours of darkness
- A walkway or sidewalk that is adjacent to an excavation will be separated from the excavation and protected by an appropriate guardrail

EXPOSURE TO FALLING LOADS

Personnel will not be permitted under loads handled by lifting or digging equipment. Employees will be required to stand away from any vehicle being loaded or unloaded to avoid being struck by any spillage or falling materials. Operators may remain in the cabs of vehicles being loaded or unloaded when the vehicles are equipped with regulation protection for the operator during loading and unloading operations.

MOBILE EQUIPMENT WARNING SYSTEMS

When mobile equipment is operated adjacent to an excavation, or when such equipment is required to approach the edge of an excavation, and the operator does not have a clear and direct view of the edge of the excavation, a warning system will be utilized such as barricades, hand or mechanical signals, or stop logs. If possible, the grade should be away from the excavation.

HAZARDOUS ATMOSPHERES

To prevent exposure to hazardous atmospheres and to assure acceptable breathing conditions, all of the following requirements will apply:

- Where an oxygen deficiency or a hazardous atmosphere exists, the atmosphere will be tested before employees enter excavations that are more than 4 feet deep
- Precautions will be taken to prevent employee exposure to atmospheres that contain less than 19.5% oxygen and any other hazardous atmosphere. These precautions include providing regulation respiratory protection or ventilation
- Precautions will be taken, such as providing ventilation, to prevent employee exposure to an atmosphere that contains a concentration of a flammable gas in excess of 20% of the lower flammable limit of the gas
- When using controls intending to reduce levels of atmospheric contaminants to acceptable PEL, testing will be conducted as often as necessary to ensure that breathing air remains safe
- Emergency rescue equipment will be readily available and attended where atmospheric conditions exist or could develop
- Employees entering bell-bottom pier holes, or other similar deep and confined footing excavations, will wear a harness with a lifeline securely attached to it. The lifeline will be separate from any line used to handle materials, and will be individually attended at all times while employee wearing it is in the excavation

PROTECTION FROM WATER ACCUMULATION HAZARDS

- Employees will not work in excavations where water has or is accumulating, unless adequate precautions have been taken to protect employees against the hazards posed by such water accumulation including support and shield systems, water removal, and safety harnesses and lifeline
- If water is controlled or prevented from accumulating by the use of water pumps, the pumping equipment and operations will be monitored by a competent person to ensure proper operation
- If excavation work interrupts the natural drainage of surface water (such as streams), diversion ditches, dikes, or other suitable means will be used to prevent surface water from entering the excavation and to provide adequate drainage of the area adjacent to the excavation
- Excavations subject to runoff from heavy rains will require an inspection by a competent person
- An ongoing inspection of an excavation or trench will be made by a qualified person. After every rainstorm or other hazard-producing occurrence, an inspection will be made by a competent person for evidence of possible slides or cave-ins. Where these conditions are found, all work will cease until additional precautions, such as additional shoring or reducing the slope, have been accomplished

STABILITY OF ADJACENT STRUCTURES

- Excavation below the level of the base or footing of any foundation or retaining wall that could be reasonably expected to pose a hazard to employees will not be permitted except when:
  - A support system, such as shoring, bracing, or underpinning, is provided to ensure the safety of employees and the stability of the structure
  - The excavation is in stable rock
  - A registered professional engineer has approved the determination that the structure is sufficiently removed from the excavation so as to be unaffected by the excavation activity or that such excavation work will not pose a hazard to employees
- Sidewalks, pavements, and appurtenant structure will not be undermined unless a support system or another method of protection is provided to protect employees from the possible collapse of such structures
- The shoring, bracing, and underpinning will be inspected daily or more often, as conditions warrant, by a competent person

EMPLOYEE PROTECTION FROM LOOSE ROCK OR SOILS

- Adequate protection will be provided to protect employees from loose rock or soil that could pose a hazard by falling or rolling from an excavation face. Such protection will consist of scaling to remove loose material; installation of protective barricades at intervals as necessary on the face to stop and contain falling material or other means that provide equivalent protection
- Employees will be protected from excavated or other materials or equipment that could pose a hazard by falling or rolling into excavations. Protection will be provided by placing and keeping such materials or equipment at least 2 feet from the edge of excavations, or by the use of retaining devices that are sufficient to prevent materials or equipment from falling or rolling into excavations, or by a combination of both if necessary
- If different textured soils are encountered in the side of an excavation, each soil type of the excavation will be cut to the proper maximum allowable slope, except that the slope will not steepen between the toe of the slope and the ground level where soft clay or running soil is encountered in the lower cut
- If the excavation is a trench, a trench shoring system will be used or the sides will be properly benched or sloped to protect against a cave-in
- An excavation that is cut into a rock formation will be scaled to remove loose material
- When installed forms, walls, or similar structures create a trench between the form, wall, or structure and the side of the excavation, it will be treated as a trench

GENERAL CLASSIFICATION OF SOIL AND ROCK DEPOSITS

- Each soil and rock deposit will be classified by a competent person as Stable Rock, Type A, Type B, or Type C in accordance with OSHA definitions
- The classification of the deposits will be made based on the results of at least one visual and at least one manual analysis. Such analyses will be conducted by a competent person using approved methods of soil classification and testing
- The visual and manual analyses will be designed and conducted to provide sufficient quantitative and qualitative information as may be necessary to identify properly the properties, factors, and conditions affecting the classification of the deposits
- Layered systems will be classified according to its weakest layer. However, each layer may be classified individually where a more stable layer lies under a less stable layer
- If after classifying a deposit, the properties, factors, or conditions affecting its classification change in any way, the changes will be evaluated by a competent person. The deposit will be reclassified as necessary to reflect the changed circumstances

PROTECTION OF EMPLOYEES IN EXCAVATIONS

- Employees in an excavation will be protected from cave-ins by an adequate protective system designed in accordance with OSHA requirements, except when: excavations are made entirely in stable rock; excavations are less than 5 feet deep and examination of the ground by a competent person provides no indication of a potential cave-in
- Protective systems will have the capacity to resist without failure all loads that are intended or could reasonably be expected to be applied or transmitted to the system
- The slopes and configurations of sloping and benching systems will be selected and constructed by Solomon Corporation and will be in accordance with OSHA requirements, or the following alternative options

Option 1 - Allowable configurations and slopes.

- Excavations will be sloped at an angle not steeper than one and one-half horizontal to one vertical (34 degrees measured from the horizontal), unless Solomon Corporation uses one of the other options listed below
- Specified slopes will be excavated to form configurations that are in accordance with the slopes shown for Type C soil.

Option 2 - Maximum allowable slopes, and allowable configurations for sloping and benching systems, will be determined in accordance with the conditions and requirements set forth in §1926 Subpart P – Appendices A and B.

Option 3 - Designs using other tabulated data.

- Designs of sloping or benching systems will be selected from and in accordance with tabulated data, such as tables and charts
- The tabulated data will be in written form and will include all of the following:
  - Identification of the parameters that affect the selection of a sloping or benching system drawn from such data
  - Identification of the limits of use of the data, to include the magnitude and configuration of slopes determined to be safe
  - Explanatory information as may be necessary to aid the user in making a correct selection of a protective system from the data
  - At least one copy of the tabulated data which identifies the registered professional engineer who approved the data, will be maintained at the jobsite during construction of the protective system. After that time the data may be stored off the jobsite, but a copy of the data will be made available to OSHA upon request

Option 4 - Design by a registered professional engineer.

- Sloping and benching systems not utilizing previous Options 1, 2, or 3 will be approved by a registered professional engineer
- Designs will be in written form and will include at least the following:
  - The magnitude of the slopes that were determined to be safe for the particular project
  - The configurations that were determined to be safe for the particular project
  - The identity of the registered professional engineer approving the design
- At least one copy of the design will be maintained at the jobsite while the slope is being constructed. After that time the design need not be at the jobsite, but a copy will be made available to OSHA upon request

DESIGN OF SUPPORT SYSTEMS

Designs of support systems, shield systems, and other protective systems will be selected and constructed by Solomon Corporation and will be in accordance with OSHA requirements., or the following alternative options:

Option 1 - Designs for timber shoring in trenches will be determined in accordance with the conditions and requirements set forth in §1926 Subpart P – Appendices A and C. Designs for aluminum hydraulic shoring will be in accordance with Option 2 below, but if manufacturer's tabulated data cannot be utilized, designs will be in accordance with Appendix D.

Option 2 - Designs Using Manufacturer's Tabulated Data.

Design of support systems, shield systems, or other protective systems that are drawn from manufacturer's tabulated data will be in accordance with all specifications, recommendations, and limitations issued or made by the manufacturer.

Deviation from the specifications, recommendations, and limitations issued or made by the manufacturer will only be allowed after the manufacturer issues specific written approval.

Manufacturer's specifications, recommendations, and limitations, and manufacturer's approval to deviate from the specifications, recommendations, and limitations will be in written form at the jobsite during construction of the protective system. After that time this data may be stored off the jobsite, but a copy will be made available to the Secretary upon request.

Option 3 - Designs using other tabulated data.

Designs of support systems, shield systems, or other protective systems will be selected from and be in accordance with tabulated data, such as tables and charts.

The tabulated data will be in written form and include all of the following:

- Identification of the parameters that affect the selection of a protective system drawn from such data
- Identification of the limits of use of the data
- Explanatory information as may be necessary to aid the user in making a correct selection of a protective system from the data
- At least one copy of the tabulated data, which identifies the registered professional engineer who approved the data, will be maintained at the jobsite during construction of the protective system. After that time the data may be stored off the jobsite, but a copy of the data will be made available to OSHA upon request

Option 4 - Design by a registered professional engineer.

Support systems, shield systems, and other protective systems not utilizing previous Options 1, 2, or 3 will be approved by a registered professional engineer.

Designs will be in written form and will include the following:

- A plan indicating the sizes, types, and configurations of the materials to be used in the protective system
- The identity of the registered professional engineer approving the design

At least one copy of the design will be maintained at the jobsite during construction of the protective system. After that time, the design may be stored off the jobsite, but a copy of the design will be made available to OSHA upon request.

PROTECTIVE SYSTEMS MATERIALS AND EQUIPMENT.

- Materials and equipment used for protective systems will be free from damage or defects that might impair their proper function
- Manufactured materials and equipment used for protective systems will be used and maintained in a manner that is consistent with the recommendations of the manufacturer, and in a manner that will prevent employee exposure to hazards
- When equipment used for protective systems is damaged, a competent person will examine the equipment and evaluate its suitability for continued use. If the competent person cannot assure the equipment is able to support the intended loads or is otherwise suitable for safe use, then equipment will be removed from service be evaluated and approved by a registered professional engineer before being returned to service

- General installation and removal of support systems:
  - Members of support systems will be securely connected together to prevent sliding, falling, kickouts, or other predictable failure
  - Support systems will be installed and removed in a manner that protects employees from cave-ins, structural collapses, or from being struck by members of the support system
  - Individual members of support systems will not be subjected to loads exceeding those which those members were designed to withstand
- Excavation of material to a level no greater than 2 feet below the bottom of the members of a support system will be permitted, but only if the system is designed to resist the forces calculated for the full depth of the trench, and there are no indications while the trench is open of a possible loss of soil from behind or below the bottom of the support system
- Installation of a support system will be closely coordinated with the excavation of trenches
- Before temporary removal of individual members begins, additional precautions will be taken to ensure the safety of employees, such as installing other structural members to carry the loads imposed on the support system
- Loads will be released slowly so as to note any indication of possible failure of the remaining members of the structure or possible cave-in of the sides of the excavation
- Backfilling will progress together with the removal of support systems from excavations
- Employees will not be permitted to work on the faces of sloped or benched excavations at levels above other employees except when employees at the lower levels are adequately protected from the hazard of falling, rolling, or sliding material or equipment
- General shield systems requirements:
  - Shield systems will not be subjected to loads exceeding those which the system was designed to withstand
  - Shields will be installed in a manner to restrict lateral or other hazardous movement of the shield in the event of the application of sudden lateral loads
  - Employees will be protected from the hazard of cave-ins when entering or exiting the areas protected by shields
  - Employees will not be allowed in shields when shields are being installed, removed, or moved vertically
  - Excavations of earth material to a level not greater than 2 feet below the bottom of a shield will be permitted, but only if the shield is designed to resist the forces calculated for the full depth of the trench, and there are no indications while the trench is open of a possible loss of soil from behind or below the bottom of the shield
- Regulation guardrails or barricades will be provided at all remotely located excavations. All wells, pits, and shafts, temporary or otherwise, will be barricaded or covered. Temporary wells, pits, and shafts will be backfilled when exploration and similar operations are completed.

POLICY

Solomon Corporation has adopted this policy for the prevention of employee exposure to hazards resulting either directly or indirectly from “Hot Work” (welding, cutting, and brazing) in the workplace from the following OSHA regulations:

REFERENCES

- §1910.252 – General Requirements
- §1910.253 – Oxygen-fuel Gas Welding and Cutting
- §1910.254 – Arc Welding and Cutting

RESPONSIBILITIES

Corporate EH&S Manager Mike Dahl is the supervisor responsible for ensuring the following engineering controls, work practices, and safety procedures are enforced

TRAINING

Solomon Corporation has implemented this policy to ensure that employees are properly trained, aware of hazards associated with hot work, and correctly informed of Company policies, practices, and procedures to prevent, or if possible, eliminate these hazards.

SAFE PRACTICES

Corporate EH&S Manager Mike Dahl will ensure that welders, cutters, and their supervisors involved in the performance of hot work operations is properly trained in the safe operations of any equipment required, the safe use of the process, proper Personal Protective Equipment (PPE), and safety procedures which will be followed.

Before cutting or welding processes are permitted, the area will be inspected and cleared by Corporate EH&S Manager Mike Dahl before authorization to proceed is granted. Written “Hot Work” permits will be utilized to ensure appropriate safe work practices are observed.

Operators will report any equipment defect or safety hazard to his supervisor and the use of the equipment will be discontinued until its safety has been assured. Repairs will be performed only by qualified personnel.

Where possible, all hot work operations will be performed outside of buildings or structures, clear of any foreseeable fire hazards. If the object to be welded or cut cannot readily be moved, all moveable fire hazards will be removed.

Where hot work must be performed indoors or in the vicinity of fire hazards, the area will be cleared, if possible, of any and all material and equipment which may present a hazard of fire or explosion from flame, sparks, arcs, or slag.

Where fire hazards exist in the area of hot work operations that cannot be removed, they will be guarded to prevent fire, and the hot work operation will be shielded to confine the heat sparks and slag and to protect the immovable fire hazards and prevent hot materials from falling to a lower level. Fire watchers will have fire extinguishers readily available. A fire watch will be maintained for at least a half hour after the welding or cutting operation is completed to prevent or extinguish any fire resulting from these operations.

The employee(s) assigned to fire watch will be trained in the proper use of fire extinguishers and fire prevention measures, ensure that appropriate fire-fighting equipment and fire extinguishers are readily available, and be responsible for sounding of fire alarms in the event of a fire which is not readily extinguishable. All arc welding operations in occupied areas will be screened to prevent other personnel from being exposed to flash hazards.

Solomon Corporation will be responsible for inspecting work areas prior to any hot work being performed, designate precautions to be followed prior to work commencing, and assign a fire watch where advisable or required when any of the following conditions exist:

- Locations where other than a minor fire might develop
- Appreciable combustible material, in building construction or contents, closer than 35 feet to the point of operation
- Appreciable combustibles are more than 35 feet away, but are easily ignited by sparks
- Wall or floor openings within a 35-foot radius that expose combustible material in adjacent areas including concealed spaces in walls or floors
- Combustible materials are adjacent to the opposite side of metal partitions, walls, ceilings, or roofs and are likely to be ignited by conduction or radiation

If the requirements for fire hazards and guarding as stated above cannot be fully met, Solomon Corporation personnel will not perform the welding and cutting operations until hazardous conditions are fully resolved. Any hot work to be performed in confined spaces will conform to Permit-required Confined Space procedures and the following requirements:

- Adequate ventilation is a prerequisite to work in confined spaces
- When welding or cutting is being performed in any confined spaces the gas cylinders and welding machines will kept outside of the space. Before operations are started, gas cylinders will be secured, heavy portable equipment mounted on wheels will be securely blocked to prevent accidental movement, and warning signs will be posted
- Where a welder must enter a confined space through a manhole or other small opening, means will be provided for quickly removing him in case of emergency. When safety belts and lifelines are used for this purpose they will be so attached to the welder’s body that his body cannot be jammed in a small exit opening. An attendant with a preplanned rescue procedure will be stationed outside to observe the welder at all times and be capable of putting rescue operations into effect

- When arc welding is to be suspended for any substantial period of time, such as during lunch or overnight, all electrodes will be removed from the holders and the holders stored so that accidental contact cannot occur and the machine disconnected from the power source
- In order to eliminate the possibility of gas escaping through leaks of improperly closed valves when gas welding or cutting, the torch valves will be closed and the fuel-gas and oxygen supply to the torch positively shut off at some point outside the confined area, whenever the torch is not to be used for a substantial period of time, such as during lunch hour or overnight. Where practicable, the torch and hose will also be removed from the confined space

Any welding or brazing materials used in hot work which might possibly generate hazardous fumes, gases, or dust to the metals involved will be suitably labeled to indicated the hazard, and appropriate measures for ventilation or respiratory protection provided to ensure that no employee is exposed to higher than permissible levels of hazardous fumes.

Welding, cutting, or burning of metals containing lead, zinc, cadmium, mercury, beryllium, or other exotic metals, paints, coatings, or preservatives will require that regulation ventilation or respiratory protection be utilized.

After welding or cutting operations are completed, the welder will mark the hot metal or provide some other means of warning other workers.

First aid kits and equipment are readily available at all times for employee use during welding and cutting operations. First aid kits are kept in all company vehicles and are regularly inspected by Corporate EH&S Manager Mike Dahl to ensure that contents are kept fully stocked and that the appropriate items are available.

Personnel in charge of fuel-gas and oxygen supply equipment (including distribution piping systems and generators) will be fully instructed and determined competent for handling, use, and storage of compressed gas cylinders and related equipment.

The manufacturer’s recommendations covering the operation and maintenance of oxygen or fuel-gas supply equipment including generators, and oxygen or fuel-gas distribution piping systems will be followed and readily available to employees.

Fuel gas and oxygen cylinders must be transported, moved, stored, and used in an upright position, secured to prevent tipping, and located to prevent accidental collision with the cylinders. Cylinders must be kept away from any heat or combustion sources, and at least 20 feet from any flammable gases or petroleum products. When not in use, cylinders must have their valves closed, any regulators or attachments removed, and their valve covers in place.

Personnel assigned to operate or maintain arc welding equipment will be properly trained & qualified to operate such equipment and in safety procedures and familiar with OSHA §1910.252(a)(b) & (c) and §1910.254 requirements for arc welding and equipment handling to include the following areas: machine hook up; grounding; electric shock; switches; manufacturers' instructions; electrode holders.

There shall be no leaks of cooling water, shielding, gas, or engine fuel.

If gas shielded arc welding operations are being performed, operators will be familiar with the American Welding Society Standard A6-1-1966.

Machines that have become wet will be thoroughly dried and tested before being used.

Cables with damaged insulation or exposed bare conductors will be replaced. Joining lengths of work and electrode cables will be done by the use of connecting means specifically intended for the purpose. The connecting means will have insulation adequate for the service conditions.

The above policies and procedures will be enforced at Solomon Corporation

Hot Work Safety Checklist/Permit

Hazard Assessment must be completed and resolved before commencing welding, cutting, or heating operations. The Authorized Supervisor must sign off on this permit.

Hot Work Location: _____

Y N

☐ ☐ Is appropriate fire-extinguishing equipment ready for use?

☐ ☐ Is all flammable material moved away from work zone or properly shielded?

☐ ☐ Are drums, barrels, tanks, or other containers cleansed of flammable, explosive, or toxic residue that could react to heat?

☐ ☐ Are containers tested prior to and frequently during welding, torching, abrasive cutting, or other hot works to ensure that the containers are free of flammable or toxic vapors?

☐ ☐ Are shaded goggles or other suitable eye protection used when gas welding or oxygen cutting?

☐ ☐ Are transparent face shields or goggles used when resistance welding or resistance brazing?

☐ ☐ Do all welding helpers and equipment attendants use face or eye protection?

☐ ☐ Are helmets and hand shields worn to protect the face, neck, and ears when arc welding?

☐ ☐ Do lenses have permanent markings to show the source and shade?

☐ ☐ Do all employees wear PPE when exposed to the hazards created by welding, cutting, or brazing?

☐ ☐ Is clothing that is easily ignited or highly flammable, such as that made from synthetic materials, prohibited while welding, cutting, or brazing?

☐ ☐ Are all electrodes removed from the holders and the machine turned off when arc welding is stopped for lunch or overnight?

☐ ☐ Are the torch valves closed when gas welding or cutting is stopped for lunch or overnight?

☐ ☐ Are only approved apparatus such as torches, regulators, or pressure-reducing valves used?

☐ ☐ Are all compressed-gas cylinders legibly marked to identify the gas content?

☐ ☐ Are all compressed-gas cylinders stored away from radiators and other sources of heat?

☐ ☐ Do all compressed-gas cylinders have valve protection caps in place, hand- tight when not in use?

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☐ ☐ Are all compressed-gas cylinders securely lashed in place to prevent them from falling?

☐ ☐ Are oxygen and fuel-gas cylinders stored separately by at least 20 feet or by a noncombustible barrier at least five feet high with a fire-resistance rating of at least one-half hour?

☐ ☐ Are there signs in fuel-gas storage areas that read “DANGER – NO SMOKING, MATCHES OR OPEN LIGHTS” or equivalent wording?

☐ ☐ Are regulators with cracked, broken, or defective parts removed from service?

☐ ☐ Are approved back-flow valves or flash-back valves installed between the blowpipe or torch and the hoses?

☐ ☐ Are arc welder lead cables or electrode lead cables with damaged insulation or exposed conductors removed from service?

Hot Work Permit Observations

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Assessor Name Signature Date

_____ _____

Supervisor Name Signature Date

POLICY

Solomon Corporation has implemented this policy to inform workers of the written Live-Line Barehand Work Near Overhead Lines Program in the workplace. This ensures the safety and health of the employees on the job site.

REFERENCES

- Subpart V—Electric Power Transmission and Distribution
- *§* 1926.964 Live–Line Barehand Work Near Overhead Lines
- *§* 1926.950 General
- *§* 1926.952 Job Briefing
- §1926.952 – Aerial Devices Working Near Energized Lines or Equipment
- Appendix D to Subpart V of Part 1926—Methods of Inspecting and Testing Wood Poles
- 40. Elevated Work Platforms and Aerial Devices

RESPONSIBILITIES

Solomon Corporation is responsible for providing the resources (training, equipment, and qualified personnel) to successfully implement this policy.

Corporate EH&S Manager Mike Dahl is the supervisor responsible for ensuring the following policy for controls, training, personal protective equipment, and safe work practices is enforced.

Supervisor/foreman is responsible for:

- Compliance with this policy during field activities
- Stopping work if the conditions of the planned work changes
- Notifying Corporate EH&S Manager Mike Dahl of work stoppage and reason
- Re-briefing the work crew if the changes to planned work allow the job to proceed safely

Qualified personnel are responsible for:

- Attending all scheduled training
- Performing work in compliance with the live-line barehand work near overhead lines policy

Unqualified personnel are responsible for:

- Performing this work only when being trained by a qualified person or trainer
- Under the direct supervision of a qualified person or trainer

TRAINING

Corporate EH&S Manager Mike Dahl will ensure each employee shall be trained in, and familiar with, the safety-related work practices, safety procedures, and other safety requirements in this policy that pertain to his or her job assignments.

- The requirements of 29 CFR 1926.964 (Overhead lines and live-line barehand work)
- Training conforming to § 1926.950(b) in the technique and in the safety requirements of paragraph (c) of this section
- The skills and techniques necessary to distinguish exposed live parts from other parts of electric equipment
- The skills and techniques necessary to determine the nominal voltage of exposed live parts
- Be trained and certified in, and observed (at least annually) to be complying with, safety–related work practices and procedures (including emergency procedures)
- Be trained in first aid and cardiopulmonary resuscitation CPR
  - *Field work.* For field work involving two or more employees at a work location, at least two trained persons shall be available
  - *Fixed work locations.* For fixed work locations such as substations, the number of trained persons available shall be sufficient to ensure that each employee exposed to electric shock can be reached within 4 minutes by a trained person. However, where the existing number of employees is insufficient to meet this requirement (at a remote substation, for example), each employee at the work location shall be a trained employee

The required training will administered in a classroom and/or on the job. The degree of training provided will be determined by the risk to the employee based upon the 1926.964 standard.

- Solomon Corporation requires employees to be trained in the technique and safety requirements of live line bare hand work on energized circuits before they are allowed to conduct or supervise live line bare-hand work
- Employees will also receive regular refresher training
- *Corporate EH&S Manager Mike Dahl* shall ensure that each employee has demonstrated proficiency in the work practices involved before that employee is considered as having completed the training required
- *Additional training.* An employee shall receive additional training (or retraining) under any of the following conditions:
  - the use of safety-related work practices that are different from those which If the supervision or annual inspections indicate that the employee is not complying with the safety-related work practices required by this policy, or
  - If new technology, new types of equipment, or changes in procedures necessitate the employee would normally use, or
  - If he or she must employ safety-related work practices that are not normally used during his or her regular job duties

SAFE PRACTICES

PERSONAL PROTECTIVE EQUIPMENT/CLOTHING

- Each employee working from an aerial lift shall use a fall restraint system or a personal fall arrest system
- *Flame-resistant clothing.* The employer shall ensure that the outer layer of clothing worn by an employee is flame resistant under any of the following conditions:
  - The employee is exposed to contact with energized circuit parts operating at more than 600 volts
  - An electric arc could ignite flammable material in the work area that, in turn, could ignite the employee's clothing
  - Molten metal or electric arcs from faulted conductors in the work area could ignite the employee's clothing, or NOTE This does not apply to conductors that are capable of carrying, without failure, the maximum available fault current for the time the circuit protective devices take to interrupt the fault
  - The incident heat energy estimated under paragraph (g)(2) of this section exceeds 2.0 cal/cm^2
- Employees may not wear flammable clothing in conjunction with flame-resistant clothing if the flammable clothing poses an ignition hazard. Although outer flame-resistant layers may not have openings that expose flammable inner layers, when an outer flame-resistant layer would be unable to resist breakopen, the next (inner) layer must be flame-resistant if it could ignite. NOTE: Undergarments shall be made of natural fibers (cotton, wool, or silk with no screenprinting)

GENERAL

- *Checking structure before climbing* Before allowing employees to subject elevated structures, such as poles or towers, to such stresses as climbing or the installation or removal of equipment may impose, the employer shall ascertain that the structures are capable of sustaining the additional or unbalanced stresses. If the pole or other structure cannot withstand the expected loads, Corporate EH&S Manager Mike Dahl shall brace or otherwise support the pole or structure so as to prevent failure
- ***SETTING AND MOVING POLES*** When a pole is set, moved, or removed near an exposed energized overhead conductor, the pole may not contact the conductor. When a pole is set, moved, or removed near an exposed energized overhead conductor, Corporate EH&S Manager Mike Dahl shall ensure that each employee wears electrical protective equipment or uses insulated devices when handling the pole and that no employee contacts the pole with uninsulated parts of his or her body. To protect employees from falling into holes used for placing poles, the employer shall physically guard the holes, or ensure that employees attend the holes, whenever anyone is working nearby

COMMUNICATIONS

The supervisor will ensure employees maintain reliable communications, through two-way radios or other equivalent means, between the reel tender and the pulling rig operator.

ADVERSE WEATHER CONDITIONS

Corporate EH&S Manager Mike Dahl will ensure employees do not perform work when adverse weather conditions would make the work hazardous even after the Solomon Corporation implements the work practices to perform the work safely. Additionally, employees may not perform work when winds reduce the phase-to-phase or phase-to-ground clearances at the work location below the minimum approach distances specified in paragraph (c)(13) of this section, unless insulating guards cover the grounded objects and other lines and equipment.

NOTE: Thunderstorms in the vicinity, high winds, snow storms, and ice storms are examples of adverse weather conditions that make live-line barehand work too hazardous to perform safely, even after the employer implements the work practices to perform this work.

BUCKET LINERS AND ELECTROSTATIC SHIELDING

Solomon Corporation will provide, and ensure employees use, a conductive bucket liner or other conductive device for bonding the insulated aerial device to the energized line or equipment.

The employee will be connected to the bucket liner or other conductive device by the use of conductive shoes, leg clips, or other means.

Where differences in potentials at the worksite pose a hazard to employees, Corporate EH&S Manager Mike Dahl will provide electrostatic shielding designed for the voltage being worked.

BONDING THE EMPLOYEE TO THE ENERGIZED PART

The supervisor/foreman will ensure that, before the employee contacts the energized part, the employee bonds the conductive bucket liner or other conductive device to the energized conductor by means of a positive connection. This connection will remain attached to the energized conductor until the employee completes the work on the energized circuit.

INSTALLING AND REMOVING OVERHEAD LINES

The following provisions apply to the installation and removal of overhead conductors or cable (overhead lines):

Tension stringing method. When lines that employees are installing or removing can contact energized parts, Corporate EH&S Manager Mike Dahl will use the tension stringing method, barriers, or other equivalent measures to minimize the possibility that conductors and cables the employees are installing or removing will contact energized power lines or equipment.

Conductors, cables, and pulling and tensioning equipment. For conductors, cables, and pulling and tensioning equipment, the employer will provide the protective measures required by § 1926.959(d)(3) when employees are installing or removing a conductor or cable close enough to energized conductors that any of the following failures could energize the pulling or tensioning equipment or the conductor or cable being installed or removed: failure of the pulling or tensioning equipment, failure of the conductor or cable being pulled, or failure of the previously installed lines or equipment.

Disable automatic-reclosing feature. If the conductors that employees are installing or removing cross over energized conductors in excess of 600 volts and if the design of the circuit-interrupting devices protecting the lines so permits, Solomon Corporation shall render inoperable the automatic-reclosing feature of these devices.

SAFE OPERATING CONDITION

Reel handling equipment, including pulling and tensioning devices, will be in safe operating condition and shall be leveled and aligned.

LOAD RATING

Employees will not exceed load ratings of stringing lines, pulling lines, conductor grips, load-bearing hardware and accessories, rigging, and hoists.

DEFECTIVE PULLING LINES

Corporate EH&S Manager Mike Dahl will repair or replace defective pulling lines and accessories shall repair or replace defective pulling lines and accessories

CONDUCTOR GRIPS

Employees will not use conductor grips on wire rope unless the manufacturer specifically designed the grip for this application

OPERATION OF PULLING RIG

Employees may operate the pulling rig only when it is safe to do so.

NOTE: Examples of unsafe conditions include: employees in locations prohibited by working under overhead operations, conductor and pulling line hangups, and slipping of the conductor grip.

WORKING UNDER OVERHEAD OPERATIONS

While a power-driven device is pulling the conductor or pulling line and the conductor or pulling line is in motion, the employer will ensure employees are not directly under overhead operations or on the crossarm, except as necessary for the employees to guide the stringing sock or board over or through the stringing sheave.

LIVE-LINE BAREHAND WORK

Existing conditions. Before any employee uses the live-line barehand technique on energized high-voltage conductors or parts, the employer will ascertain the following information in addition to information about other existing conditions required by § 1926.950(d):

The nominal voltage rating of the circuit on which employees will perform the work,

The clearances to ground of lines and other energized parts on which employees will perform the work, and

The voltage limitations of equipment employees will use.

INSULATED TOOLS AND EQUIPMENT

Corporate EH&S Manager Mike Dahl will ensure the insulated equipment, insulated tools, and aerial devices and platforms used by employees are designed, tested, and made for live-line barehand work.

The supervisor/foreman will ensure that employees keep tools and equipment clean and dry while they are in use.

DISABLE AUTOMATIC-RECLOSING FEATURE

Corporate EH&S Manager Mike Dahl will render inoperable the automatic-reclosing feature of circuit-interrupting devices protecting the lines if the design of the devices permits.

AERIAL-LIFT CONTROLS

Aerial lifts used for live-line barehand work will have dual controls (lower and upper) as follows:

The upper controls will be within easy reach of the employee in the bucket. On a two-bucket-type lift, access to the controls will be within easy reach of both buckets.

The lower set of controls will be near the base of the boom and shall be designed so that they can override operation of the equipment at any time.

Operation of lower controls. Lower (ground-level) lift controls may not be operated with an employee in the lift except in case of emergency.

Check controls. The supervisor/foreman will ensure that, before employees elevate an aerial lift into the work position, the employees check all controls (ground level and bucket) to determine that they are in proper working condition.

BODY OF AERIAL LIFT TRUCK

The employer will ensure that, before employees elevate the boom of an aerial lift, the employees ground the body of the truck or barricade the body of the truck and treat it as energized.

BOOM-CURRENT TEST

The foreman/supervisor will ensure employees perform a boom-current test before starting work each day, each time during the day when they encounter a higher voltage, and when changed conditions indicate a need for an additional test.

This test will consist of placing the bucket in contact with an energized source equal to the voltage to be encountered for a minimum of 3 minutes.

The leakage current may not exceed 1 microampere per kilovolt of nominal phase-to-ground voltage.

The employee will immediately stop work and report malfunction in the equipment to the foreman/supervisor

The foreman/supervisor will immediately suspend work from the aerial lift when there is any indication of a malfunction in the equipment.

MINIMUM APPROACH DISTANCE (MAD)

The foreman/supervisor will ensure employees maintain the minimum approach distances, established by Corporate EH&S Manager Mike Dahl, from all grounded objects and from lines and equipment at a potential different from that to which the live-line barehand equipment is bonded, unless insulating guards cover such grounded objects and other lines and equipment.

Corporate EH&S Manager Mike Dahl will calculate the MAD for the work scheduled. The OSHA calculator to determine MAD can be found on OSHA's website at the following URL: https://www.osha.gov/dsg/mad_calculator/mad_calculator.html

APPROACHING, LEAVING, AND BONDING TO ENERGIZED PART

The supervisor/foreman will ensure that, while an employee is approaching, leaving, or bonding to an energized circuit, the employee maintains the minimum approach distances, established by Corporate EH&S Manager Mike Dahl, between the employee and any grounded parts, including the lower boom and portions of the truck and between the employee and conductive objects energized at different potentials.

POSITIONING BUCKET NEAR ENERGIZED BUSHING OR INSULATOR STRING

While the bucket is alongside an energized bushing or insulator string, the employer will ensure employees maintain the phase-to-ground minimum approach distances, established by Corporate EH&S Manager Mike Dahl, between all parts of the bucket and the grounded end of the bushing or insulator string or any other grounded surface.

HANDLINES

The supervisor/foreman will ensure employees do not use handlines between the bucket and the boom or between the bucket and the ground. However, employees may use nonconductive-type handlines from conductor to ground if not supported from the bucket. The employer will ensure no one uses ropes used for live-line barehand work for other purposes.

PASSING OBJECTS TO EMPLOYEE

The supervisor/foreman will ensure employees do not pass uninsulated equipment or material between a pole or structure and an aerial lift while an employee working from the bucket is bonded to an energized part.

NONCONDUCTIVE MEASURING DEVICE

A nonconductive measuring device will be readily accessible to employees performing live-line barehand work to assist them in maintaining the required minimum approach distance.

TOWERS AND STRUCTURES

Working beneath towers and structures. The employer will ensure no employee is under a tower or structure while work is in progress, except when the employer can demonstrate that such a working position is necessary to assist employees working above.

Tag lines. The employer will ensure employees use tag lines or other similar devices to maintain control of tower sections being raised or positioned, unless the employer can demonstrate that the use of such devices would create a greater hazard to employees.

Disconnecting load lines. The employer will ensure employees do not detach the loadline from a member or section until they safely secure the load.

ATTACHMENT

- Methods of Inspecting and Testing Wood Poles

METHODS OF INSPECTING AND TESTING WOOD POLES

INTRODUCTION

When employees are to perform work on a wood pole, it is important to determine the condition of the pole before employees climb it. The weight of the employee, the weight of equipment to be installed, and other working stresses (such as the removal or re-tensioning of conductors) can lead to the failure of a defective pole or a pole that is not designed to handle the additional stresses.[1] For these reasons, it is essential that, before an employee climbs a wood pole, the employer ascertain that the pole is capable of sustaining the stresses of the work. The determination that the pole is capable of sustaining these stresses includes an inspection of the condition of the pole.

A properly guyed pole in good condition should, at a minimum, be able to handle the weight of an employee climbing it.

If the employer finds the pole to be unsafe to climb or to work from, the employer must secure the pole so that it does not fail while an employee is on it. The employer can secure the pole by a line truck boom, by ropes or guys, or by lashing a new pole alongside it. If a new one is lashed alongside the defective pole, employees should work from the new one.

INSPECTING WOOD POLES

A qualified employee should inspect wood poles for the following conditions:[2] The presence of any of these conditions is an indication that the pole may not be safe to climb or to work from. The employee performing the inspection must be qualified to make a determination as to whether it is safe to perform the work without taking additional precautions.

- *General condition.* Buckling at the ground line or an unusual angle with respect to the ground may indicate that the pole has rotted or is broken
- *Cracks.* Horizontal cracks perpendicular to the grain of the wood may weaken the pole. Vertical cracks, although not normally considered to be a sign of a defective pole, can pose a hazard to the climber, and the employee should keep his or her gaffs away from them while climbing
- *Holes.* Hollow spots and woodpecker holes can reduce the strength of a wood pole
- *Shell rot and decay.* Rotting and decay are cutout hazards and possible indications of the age and internal condition of the pole
- *Knots.* One large knot or several smaller ones at the same height on the pole may be evidence of a weak point on the pole
- *Depth of setting.* Evidence of the existence of a former ground line substantially above the existing ground level may be an indication that the pole is no longer buried to a sufficient depth
- *Soil conditions.* Soft, wet, or loose soil around the base of the pole may indicate that the pole will not support any change in stress
- *Burn marks.* Burning from transformer failures or conductor faults could damage the pole so that it cannot withstand changes in mechanical stress

TESTING WOOD POLES

The following tests, which are from §1910.268(n)(3) of this chapter, are acceptable methods of testing wood poles:

- *Hammer test.* Rap the pole sharply with a hammer weighing about 1.4 kg (3 pounds), starting near the ground line and continuing upwards circumferentially around the pole to a height of approximately 1.8 meters (6 feet). The hammer will produce a clear sound and rebound sharply when striking sound wood. Decay pockets will be indicated by a dull sound or a less pronounced hammer rebound. Also, prod the pole as near the ground line as possible using a pole prod or a screwdriver with a blade at least 127 millimeters (5 inches) long. If substantial decay is present, the pole is unsafe
- *Rocking test.* Apply a horizontal force to the pole and attempt to rock it back and forth in a direction perpendicular to the line. Exercise caution to avoid causing power lines to swing together. Apply the force to the pole either by pushing it with a pike pole or pulling the pole with a rope. If the pole cracks during the test, it is unsafe

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