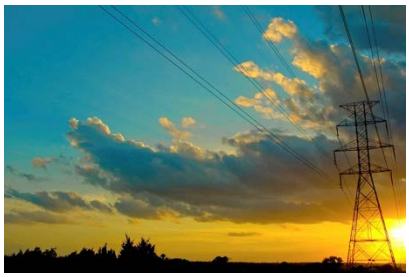
STRATEGIC
CONSTRUCTION SOLUTIONS

SAFETY MANUAL



November 2016

HSE MANUAL

Table of Contents

Revision 2.1_08NOV2016

Table of Contents

REVISION DATE	REVIEW DATE	REVISION NUMBER	REVISION COMMENTS	AUTHOR
22MAR16		1	created document	Bill Oswald
16AUG16		2	Adjust & Updated	Bill Oswald
09/09/2016	09/09/2016	2.1	Logo Change from SCS to Strategic Construction Solutions	Bill Oswald
11/08/2016		2.2	Addition of HSC019-025 policies	Bill Oswald

HSE MANUAL

SECTION #HS A001

Health and Safety
Management Commitment Policy

Revision 2_15SEP2016

I. SCOPE

1. Strategic Construction Solutions and its subsidiaries recognize the importance of establishing Policies that address the overall commitment the Company has to the health and well-being of all of its employees, the environment, and to the services provided to the Company's customers and clients. In order to achieve this, the Health and Safety Management Commitment Policy has been written to clearly define the commitment Strategic Construction Solutions has in this regard.
2. Workplace Health & Safety at Strategic Construction Solutions, is Top-Down Management led, requiring both a Team and Individual effort along with cohesively shared accountability and responsibility amongst all employees working for the company. Employee involvement is the key to making this work. Every employee's personal attitude and behavior must be dedicated to Safety performance excellence requiring continuous hazard awareness, situational awareness and low risk tolerance in all circumstances to minimize and/or eliminate the chance of incident.

II. RESPONSIBLITIES

1. Strategic Construction Solutions Commitment to Safe Work
    a. Strategic Construction Solutions is committed to meeting the highest standards of safe work. It is expected that all employees carry out their work in a safety conscious manner to protect the well-being of all persons on the worksite, including members of the public.
    b. Strategic Construction Solutions Management strives to ensure that the Company achieves superior Health & Safety performance while providing an enabling environment instilling a culture that allows all employees to participate and work collaboratively in developing, promoting, and improving Health & Safety values at work.
2. **Executive Management**
    a. Strategic Construction Solutions Executives, Directors are committed to Health & Safety through fundamental approaches that include, but are not limited to, those listed herein and below:
        i. Developing and ensuring implementation of the Company's overall Health & Safety Philosophies, Policies and Standards, within all lines of business.
        ii. Supporting continual enhancement of the Health & Safety Management System.
    b. Complete required Management Training:
        i. Shall have completed the OSHA 30 hour Outreach Training course.
        ii. Attend and complete the Strategic Construction Solutions Supervisors Safety Development Program.
        iii. Completed Strategic Constructions Solutions Project Management Manual training and review.
3. **Project Management**
    a. Acknowledgement and posting of the signed Strategic Construction Solutions Health, Safety Management Commitment Policy at all Strategic Construction Solutions locations.

b. Plan and execute all work to activities to comply with the stated objectives of the Strategic Construction Solutions Health, Safety Program.

a. Complete required Management Training:
   i. Shall have completed the OSHA 30 hour Outreach Training course.
   ii. Attend and complete the Strategic Construction Solutions Supervisors Safety Development Program.
   iii. Completed Strategic Constructions Solutions Project Management Manual training and review.

b. Review and qualify subcontractor prior to assigning them to the project. The sub-contractors will be selected using the Subcontractors Management policy HSA010

c. Authorized to assign and perform corrective action of unsafe acts and/or substandard conditions.

d. Provide employees with personal protective equipment following the Strategic Constructions Solutions PPE Policy HSC010

e. Identify and provide training and personal protective equipment to employees for any hazardous conditions or material.

f. Enforce compliance with all applicable Federal, State, Client, and Strategic Constructions Solutions Standards.

g. Participate in Incident and investigation and review all accidents and institute corrective action to prevent recurrence.

h. Review Remediation of unsafe acts or conditions.

i. Establishing, documenting, and communicating to employees and contractors clear Health & Safety goals that are attainable and measurable, objectives that are relevant to workplace hazard awareness, analysis and loss prevention control, and the policies and procedures established to accomplish these objectives in order to meet the goals.

j. Establishing lines of communication with employees and allowing for reasonable employee access to top management at the worksite, fixed facility, or client project site.

k. Instilling leadership by example by following the rules, enforcing the rules, wearing any required personal protective equipment, reporting hazards, reporting injuries and illnesses, and basically doing anything expected of a subordinate tier employee.

l. Holding all Construction Mangers, supervisors, foreman and employees, responsible and accountable for workplace Health & Safety goals and objectives through positive reinforcement, immediate intervention and utilization of documented employee performance and appraisal processes.

m. Conducting and/ or assisting with evaluations and reviews of the Health & Safety Audits in order to maintain knowledge of the effectiveness of Health & Safety Management system elements and identify areas for improvement.

n. Ensures that the Health & Safety Disciplinary Policies and Procedures are uniformly administered in accordance with overall Disciplinary Policies and Procedures established by the Safety Disciplinary policy HSC001.

2. **Construction Mangers / Safety Representative**

   a. Perform Health and Safety inspections of project using the IAuditor system reporting results in procore. Direct the employee or subcontractor to take necessary corrective action to eliminate unsafe acts and/or conditions.

   b. Complete required Management Training:
      i. Shall have completed the OSHA 30 hour Outreach Training course.
      ii. Attend and complete the Strategic Construction Solutions Supervisors Safety Development Program.
      iii. Completed Strategic Constructions Solutions Project Management Manual training and review.

   c. Review Strategic Construction Solutions relevant Safety policy to subcontractors prior to their start on the project.

   d. Attend subcontractor safety meetings and evaluate effectiveness.

   e. Advise project manager of project Health and Safety status.

   f. Organize and ensure safety meetings are held for project.

   g. Determine the personal protective equipment needed by employees following the Strategic Constructions Solutions PPE Policy HSC010.

   h. Oversee the creation and distribution of JSA/TSA's using the Strategic Constructions Solutions Hazard Identification Risk Assessment JSA Policy HSB018.
      i. Have employees sign daily JSA or daily safety inspection.
      ii. Check and review daily site inspection and JSA for correctness.
      iii. Shall oversee that JSA/TSA are filled out for each task or daily as required for Strategic Construction Solutions personnel and contractors.

   i. Shall investigate and review accidents, incidents, near misses and unsafe acts with project employees.

   j. Shall write and create an Evacuation Plan as needed using the Strategic Constructions Solutions Emergency Action Plan Policy HSA005.

   k. Check and Review Daily Site Inspection and JSA for correctness.

   l. Authorized to assign and perform corrective action of unsafe acts and/or substandard conditions.

   m. Ensures that the Health & Safety Disciplinary Policies and Procedures are uniformly administered in accordance with overall Disciplinary Policies and Procedures established by the Safety Disciplinary policy HSC001.

   n. Participate in the investigation process report and record promptly the results of all accident or incident investigations.

o. Instilling leadership by example by following the rules, enforcing the rules, wearing any required personal protective equipment, reporting hazards, reporting injuries and illnesses, and basically doing anything expected of a subordinate tier employee.

p. Review new task process changes so that new hazards have not been created by the process change.

q. Conduct weekly site audit of the project using the IAuditor system. Results must be up loaded in the procore system.

r. Regularly inspect all first aid kits (pre job and weekly) to make sure that they are adequately stocked for the specific task and environment and replenish as necessary.

3. **Foreman / Supervisor**

a. Review with the crew members the safe work practices and methods at the time of the work assignment.

b. Complete required Management Training:
   i. Shall have completed the OSHA 10 hour Outreach Training course or higher.
   ii. Completed Strategic Constructions Solutions Project Management Manual training and review.

c. Verify employees are task trained for each job task that is assigned to them.

d. Select and provide the employee with the proper protective equipment, suitable tools for the job, and monitor the correct use of such equipment.

e. Monitor daily project conditions and practices. Immediately report any unsafe conditions practices to Construction manager or Project manager.

f. Ensures that the Health & Safety Disciplinary Policies and Procedures are uniformly administered in accordance with overall Disciplinary Policies and Procedures established by the Safety Disciplinary policy HSC001.

g. Correct immediately any unsafe act or conditions found in work location.

h. Instilling leadership by example by following the rules, enforcing the rules, wearing any required personal protective equipment, reporting hazards, reporting injuries and illnesses, and basically doing anything expected of a subordinate tier employee.

i. Write and implement all job specific JSA procedures identifying hazards and PPE that may be required.

j. Report all incidents and Near Misses to Construction Manager, Safety representative and Project Manager immediately.
   i. Take care of injuries promptly in the proper manner.
   ii. Will assist in the completion of incident documentation.
   iii. Gather necessary statements from crew about incident

k. Obtain any permits necessary to complete job task from the Construction Manager or Client

l. Check monthly for adequate stock and material in first aid kits

m. Assist the Construction Manager in completing monthly Safety reports.

4. **Employees**

a. Shall have received required regulatory training for project work.

b. The employee shall arrive for work fit for duty per Fit for Duty Policy HSC018

c. Employee shall be not work in an unsafe condition and will be expected to use their Stop work Authority per Stop Work Authority Policy HSA009
   i. The employee is responsible for their acts and behaviors.
   ii. The employee may receive disciplinary actions for working or allowing unsafe acts or behaviors to occur.

d. When working alone on a project the employee must follow the Working Alone Policy HSC027.

e. Employees are subject to Drug and alcohol screening while on projects.

5. **Director of Health and Safety**

a. Director of Health and Safety will review, approve and distribute this Policy and all related Standard(s) to all locations, sites and offices as applicable. Health & Safety will also coordinate revisions of Policy and related Standards as required. Lastly, Health & Safety will directly support Policy and Standard implementation and report any exceptions and will provide technical support to all locations, sites and offices as necessary.

II. HEALTH AND SAFETY MANAGEMENT COMMITMMENT

Strategic Construction Solutions is committed to a standard of excellence as a health and safety leader and affirm to its employees, customers, and the public that it will always conduct its business activities in a manner which is protective of human health, safety and the environment. All Strategic Construction Solutions, contractors, and subcontractors under our operating control must manage Health, Safety and Environmental performance/systems in line with this Commitment and Policy.

Strategic Construction Solutions Corporate Health, Safety and Environmental Policy is intended to ensure that the Company continuously achieves superior performance in fulfilling this Commitment while providing an enabling environment that allows all employees to participate and work collaboratively in developing, promoting, and improving health and safety at work.

- We will continuously ensure that all our activities comply with federal, state, provincial, and local health, safety, and environmental statutes and regulations. We will make every effort to exceed those standards whenever possible to further enhance health and safety and environmental stewardship.

- We will plan work on the principle of safety first to pursue the goal of no harm to people or the environment.
- We will strive to continually improve the performance of Strategic Construction Solutions Health, Safety and Environmental Management System. This includes providing the necessary training, equipment, and procedures to ensure a safe work environment.
- We will conduct audits and self-assessments of compliance with this Policy, measure progress of the Company's Health and Safety performance to ensure that results demonstrate continual improvement, and report periodically to the Chief Executive Officer our performance.
- Every employee, contractor, and subcontractor on Strategic Construction Solutions premises or projects is accountable and responsible for adhering to this Commitment and to comply with the law and all Policies and Procedures.
- Every employee holds the right and responsibility of intervening in unsafe or non-compliant situations and to refuse work if they believe that a dangerous situation or imminent danger exists at a worksite. It is an expectation of all employees to immediately report health and safety concerns, interventions, and work refusals to Strategic Construction Solutions management. Strategic Construction Solutions managers are expected to take prompt and appropriate remedial action when notified.
- All employees are encouraged to seek guidance from their supervisor, the Director of Human Resources and/or the Director of Safety if they have reason to believe the Company's Health, Safety standards are being violated.
- Management of Strategic Construction Solutions Managers are expected to take prompt and appropriate remedial action if notified of a health or safety concern.

REVISION DATE	REVIEW DATE	REVISION NUMBER	REVISION COMMENTS	AUTHOR
03/09/2016	03/09/2016	1	Created the document	Bill Oswald
09/09/2016	09/09/2016	1.1	Logo Change from SCS to Strategic Construction Solutions	Bill Oswald
09/15/2016	09/15/2016	2	Update safety Responsibilities of each position	Bill Oswald

HSE MANUAL

SECTION #HS A002

Behavior Based Safety Policy

Revision 2.1_09SEP2016

I. SCOPE

1. Strategic Construction Solutions has adopted this policy for Behavior Based Safety Observation for customers and work that require using behaviors based observations as part of their Safety Management system. The program utilizes documented observation methods, coaching and mentoring techniques to help bring about desired safe behaviors are practiced.
2. Behavior based safety is one tool used by Strategic Construction Solutions in order to bring employees into compliance with Health and safety standards. The goal of a Behavior-Based Safety process is to create a safety culture in the workplace. The process focuses on observing and correcting behaviors, not attitudes that are critical to safety. Employee behavior is measurable; attitudes are not. But Behavior-Based Safety can affect attitudes. Behavior-Based Safety is successful because it fully engages the entire workforce.
3. As injuries decrease, employee morale increases, allowing more cooperation and efficiency throughout the company. Instead of focusing on accidents, failure, punishment, and managerial goals, employees focus on safe behaviors and work toward their own safety goals.

II. OBSERVATION

1. A critical element in Strategic Construction Solutions Behavior-based Safety (BBS) program depends on site observation. Site observation includes direct and open communication with the employees involved. The observer will:
    a. Meet with the worker at the site and introduce yourself and gain an overview of the job being done.
    b. Observe and monitor the worker, noting their safe behaviors.
    c. Monitor the at-risk behaviors the worker is putting themselves in.
2. Observation Process Training will be established and implemented to the proper personnel. These individuals will be experienced employees of Strategic Construction Solutions. Training will consist of either classroom or on the job training. Elements of the Training Program include:
    a. Who is to be trained
    b. Ensuring employees know the basic elements of the behavior-based program
    c. Ensuring that all employees involved in the process are trained in the classroom or on the job
3. The types of training that will be provided are:
    a. Management training - to ensure the common goals and process of the program are being met
    b. New employee training - effectively communicating the program to all employees
    c. Refresher training - to be done 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

4. 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.

III. FEEDBACK

1. Communication is a crucial element in a successful Behavior Based Safety Program. To effectively accomplish this, feedback is of key importance.
2. The observer will start by commending the safe behavior the worker was doing during their work. The observer then will to explain, the at-risk behaviors the worker was engaged in. The observer solicits feedback from the worker as to why they were putting themselves at risk. 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 a flame-retardant apron. At this time, the observer and worker will discuss the at-risk behaviors until the worker and observer agree on a safer way of working.
3. The Observer's job is to highlight this at risk behavior, then explain the associated negative consequences with this behavior. The discussion of at risk behaviors and agreement on actions to prevent reoccurrence is the individual feedback which helps workers change behaviors. Key elements for the observer to remember during the feedback process are:
    a. Reviewing the observation with the employee
    b. Start with positive comments on behavior and procedure
    c. Reinforce these behaviors
    d. Describe and discuss the unsafe portions observed
    e. Determine the reasons for the unsafe actions with open-ended questions to the worker
    f. Re-emphasize that there are no negative consequences at this stage, so long as the observer and worker agree on the change of behavior
4. At the end of the observation the Observer will complete and turn in an Observation Card with:
    a. Safe and at-risk behaviors they noticed and discussed with worker(s)
    b. Record the date, time and location of the observations
    c. Note the worker(s) comments and reasons for the at-risk behavior
    d. Record recommended safe behavior
    e. *Note:* Worker's name or identification numbers are not included on Observation Card
5. Consequences that have the greatest impact in determining an individual's behavior occur soon after the behavior, the individual is certain that they will occur and the consequences are important to the individual. Consequences that delayed or distant, that the individual is uncertain whether or not they will occur and are unimportant will have limited impact.

IV. DATA COLLECTION

1. Observation Cards will be used by Strategic Construction Solutions to summarize the observation process. Documenting this interaction is important analysis by the Safety Department in charge of the program. All observation cards will be sent to Safety at safety@atwell-group.com for review and input into the data collection sheet. Reports will be generated that trend at-risk behaviors and locations they are taking place. The Safety Department will analyze the date and make recommendations to reduce at risk behaviors and suggest practical solutions. Information will be used by management to develop action plans to ultimately reduce the risk of injuries to workers.

V. ACTION PLAN

1. In order to address unsafe behaviors, Strategic Construction Solutions will construct its Action Plan based on Observation Reports, trend analysis, and recommendations from the Observers and employees. Management will be assigned responsibility for the actions included in the plan. Action planning will include:
    a. Holding regularly scheduled meetings to discuss and analyze behavior-based report findings
    b. Evaluating unsafe behaviors
    c. Designating responsible parties and time frames to complete the Action Plan
    d. Ensuring support of management
2. The Safety Department will:
    a. Produce a set of recommendations to correct workers' behavior
    b. Recommendations may be as simple as providing Personal Protective Equipment (PPE) to workers in certain location, or increase work force in another location
    c. Some of the recommendations require site modification or costly machinery. Such recommendations are forwarded to senior leadership for approval.
3. The Safety Department responsibility is to ensure that:
    a. The recommendations will change the at-risk behaviors at the targeted location
    b. The recommendations will eliminate hazards and risks caused by hardware or wrong design

VI. FOLLOW UP

1. Any Action Plans set out by Strategic Construction Solutions at the direction of The Safety Director will be completed in a time frame agreed upon by the Management. Regularly scheduled meetings will be held to:
    a. Review status and action taken for each action item
    b. Document Action Plan progress

REVISION DATE	REVIEW DATE	REVISION NUMBER	REVISION COMMENTS	AUTHOR
07/27/2016	07/27/2017	1	Created document	Bill Oswald
17AUG16	17AUG17	2	Edits	K Rodriguez
09/09/2016	09/09/2016	2.1	Logo Change from SCS to Strategic Construction Solutions	Bill Oswald

Strategic Construction Solutions Safety Observation			
Date:		Location:	
Observer:			
Client:			

Behavior Based Observation

PPE	Safe	At Risk	N/A	Body Position	Safe	At Risk	N/A
Body				Line of Fire			
Eye & Face				Walking			
Breathing				Climbing			
Respirator				Over Extension			
Hand				Eye on Task			
Foot				Lifting			
Hearing				Pinch Points			
Head				Pulling/Pushing			
Work Environment				**Tools**			
Terrain				Tool Use			
Housekeeping				Tool selection			
Traffic				Tool condition			
Aware of Surroundings							
Procedure Related				**Ergonomics**			
Respiratory Protection				Static Position			
PPE				Repetitive Motion			
DOT OQ				Extreme Temperature			
				Awkward Position			
Tools				**Equipment & Vehicles**			
Tool Use				Equipment Setup			
Tool Selection				Vehicle Use			
Tool Condition							

Task Observed	Observer Checklist	Yes	No
Describe the task being observed:	Did observer communicate intent?		
	Did observer understand task?		
	Did observer have a clear view of task?		
	Did observer record safe/ at risk behaviors?		
	Are comments completed and legible?		
	Did observer give positive feedback immediately?		
	Did observer review at risk concerns?		

Comments:

STRATEGIC
CONSTRUCTION SOLUTIONS

HSE MANUAL

SECTION #HS A003

Hazard Communication Policy

Revision 3.1_09SEP2016

I. SCOPE

A. Strategic Construction Solutions is committed to providing a safe and healthy work environment for our employees. The Strategic Construction Solutions Hazard Communication Program (Hazcom) has been developed to improve communication and training associated with the use, handling, and storage of hazardous chemicals. The program is designed to increase employee awareness of the hazardous chemicals used in the workplace by providing information about the hazardous chemicals, identifying the associated hazards and harmful effects, and how to protect themselves from the risks of those hazards.

B. This document uses the Globally Harmonized System (GHS) for classification and labeling of chemicals which was incorporated into the 2013 OSHA and Cal/OSHA Hazard Communication Standard , CFR 1910.1200 and CCR Title 8, §5194). Strategic Construction Solutions will incorporate all the changes into its Hazcom Program.

C. This document serves as the Strategic Construction Solutions general Hazcom Program. In addition, departments are required to complete location-specific information in Appendix A- Hazard Communication Program Summary. Employees must adhere to the general Hazcom Program and their department-specific requirements.

D. A copy of this program will be made available to all employees and their designated representatives.

II. DEFINITIONS

A. **Classification:** To identify the relevant data regarding the hazards of a chemical; review those data to ascertain hazards associated with the chemical; and decide whether the chemical will be classified as hazardous, and the degree of hazard where appropriate, by comparing the data with the criteria for health and physical hazards. Typical classifications might be flammable, corrosive, reactive and toxic.

B. **Hazardous Chemical:** Any chemical which is classified as a physical hazard or a health hazard, a simple asphyxiate, combustible dust, pyrophoric gas, a hazard not otherwise classified, or is included in the Strategic Construction Solutions List of Hazardous Substance.

C. **Health Hazard**: A chemical for which there is statistically significant evidence based on at least one study conducted in accordance with the established scientific principles that acute or chronic health effects may occur in exposed employees. Health Hazard Criteria can be found in 29 CFR §1910.1200- Appendix A (8 CCR §5194 Appendix A references this federal regulation). Hazards are listed as “H” codes on GHS compliant labels and safety data sheets (SDSs).

D. **Immediate Use:** The hazardous substance will be under the control of and used only by the person who transfers it from a labeled container and only within the work shift in which it is transferred.

E. **Label**: An appropriate group of written, printed, graphic information elements concerning a hazardous chemical that is affixed to, printed on, or attached to the immediate container of a hazardous chemical, or to the outside packaging.

F. **Physical hazard:** A chemical that is classified as posing one of the following hazardous effects: explosive; flammable (gases, aerosols, liquids, or solids); oxidizer (liquid, solid or gas); self-reactive; pyrophoric (liquid or solid); self-heating; organic peroxide; corrosive to metal; gas under pressure; combustible liquid; water reactive; or in contact with water emits flammable gas. Physical Criteria can be found in 29 CFR §1910.1200 Appendix B (8 CCR §5194- Appendix B references this federal regulation).

G. Pictogram: A composition that may include a symbol plus other graphic elements, such as a border, background pattern or color that is intended to convey specific information about the hazards of a chemical.

H. Precautionary Statement: A phrase that describes recommended measures that should be taken to minimize or prevent adverse effects resulting from exposure to hazardous chemicals, or improper storage or handling. Statements are listed as "P" codes on GHS-compliant labels and SDSs.

I. Safety Data Sheet (SDS): Written or printed material concerning a hazardous chemical that is prepared in accordance with 8 CCR §5194(g). (See Appendix B for details).

J. Signal Word: A word used to indicate the relative level of severity of hazard and alert the reader to a potential hazard on the label. The signal words used are "danger" and "warning." "Danger" is used for the more severe hazards, while "warning" is used for the less severe.

K. Simple Asphyxiate: A substance or mixture that displaces oxygen in the ambient atmosphere, and can thus cause oxygen deprivation in those individuals who are exposed, leading to unconsciousness and death.

L. Trade Secret: Any confidential formula, pattern, process, device, information, or compilation of information which gives its user an opportunity to obtain a business advantage over competitors who do not know or use it. A trade secret shall not include chemical identify information which is readily discoverable through qualitative analysis.

M. Use: To package, handle, react, or transfer.

N. Workplace Label: "Non-original manufacturer label" - Label placed on a secondary (workplace) container. When hazardous material is removed/transferred from the original manufacturer labeled container to another container (secondary (workplace) container), the secondary (workplace) container must have a workplace label with the exception of portable containers that will contain chemicals for immediate use.

III. POLICY APPLICATION

A. This document fulfills the requirements of the OSHA CFR 1910.1200 and the Cal/OSHA Hazard Communication Standard (8 CCR §5194). The program describes methods for meeting the requirements of a written Hazcom program, including:

1. Developing and maintaining a list of hazardous chemicals
2. Availability and access to Safety Data Sheets (SDSs)
3. Establishing procedures for container labeling and other forms of warning
4. Providing information and training
5. Addressing multi-employer workplace issues

B. Employees, Operations, and Substances Subject to the Hazcom Requirements:

1. The Hazcom Program applies to Strategic Construction Solutions employees who work in:
2. Non-laboratory "industrial" work areas or operations where hazardous chemicals are used, handled or stored (examples: maintenance shops, custodial operations.

C. Operations where chemicals are only handled in sealed containers and are not opened under normal conditions. These operations are partially exempt from the regulatory requirements. However, employees of such operations must:

1. Ensure labels are not removed or defaced

2. Maintain SDSs and ensure SDSs are readily accessible during the work shift
3. Be provided information and training to the extent necessary to protect employees in the event of a spill or leak of a hazardous chemical from a sealed container

D. Such operations could include warehouses, store rooms, and shipping and receiving.

E. Exempted Substances

1. Hazardous waste
2. Tobacco or tobacco products
3. Wood or wood products
4. Articles
5. Food, drugs or cosmetics intended for personal use
6. Consumer products used in the workplace when used as a normal consumer would (example: white out, glass cleaner, spray paint for short, one-time applications, etc.). Employee exposure to the product cannot be significantly greater than consumer exposure.

IV. HAZARDOUS CHEMICAL IDENTIFICATION AND CLASSIFICATION

A. Hazardous chemicals include, but are not limited to, the following:

1. "List of Highly Hazardous Chemicals, Toxics and Reactives" CFR 1910.119 App A
2. "The Hazardous Substance List," commonly known as the Directors List of Hazardous Substances, 8 CCR §339
3. "Toxic and Hazardous Substances, Air Contaminants," 8 CCR §5155
4. "Threshold Limit Values for Chemical Substances in the Work Environment," American Conference of Governmental Industrial Hygienists, updated annually
5. "12th Report on Carcinogens," National Toxicology Program, 2011
6. "Monographs," International Agency for Research on Cancer, World Health Organization
7. SDSs for reproductive toxins and cancer causing substances
8. Any other substance that may present a physical or health hazard as determined by scientific evidence

B. Hazardous chemicals can be identified by the hazard classifications noted on manufacturer labels and SDSs. Common hazard classifications include flammable, corrosive, toxic and carcinogen.

V. RIGHTS AND RESPONSIBILITIES

A. Locations Lead shall assure that: Hazcom is implemented as a part of the Locations comprehensive health and safety program, in accordance with Strategic Construction Solutions Policy and Procedure Manual

1. Location chemical inventories are entered and maintained in the Strategic Construction Solutions Chemical Inventory System (CIS);
2. Location - Specific Hazcom Program Summary is prepared, maintained and communicated to employees; and

3. Strategic Construction Solutions General Hazcom Program content is communicated to all employees.

B. Supervisors are responsible for implementing Hazcom at the operational level and ensuring the safe use of hazardous chemicals for all areas under their supervision. Responsibilities include:

1. Completing a Job Safety Analysis per the Strategic Construction Solutions hazard Recognition program
2. Completing a hazard assessment/ personal protective equipment certification, if needed
3. Providing training and information to anyone who may be affected by work with hazardous chemicals, including ready access to SDSs and emergency procedures for hazardous chemicals used in the work area. This includes personnel from other units or contractors who may be affected by department operations
4. Identifying the hazardous chemicals present in the work area
5. Maintaining an inventory list of hazardous chemicals present in the work area
6. Confirming that:
    a) All hazardous chemicals, at or above reporting thresholds, are included in CIS
    b) All hazardous chemicals are labeled, at minimum, with the chemical name and the hazard
    c) Location -Specific Hazcom Program Summary (Appendix A) is followed and maintained in any assigned space where hazardous chemicals are used, handled or stored

C. Employee rights:

1. To receive information regarding hazardous chemicals to which the employee may be exposed
2. For the employee's physician or bargaining unit representative to receive information regarding hazardous chemicals to which the employee may be exposed
3. Access to employee's medical and exposure monitoring records
4. Right to exercise employee's rights to know without fear of discharge or other discrimination

D. Employee responsibilities include:

1. Reviewing, understanding, and following the requirements of the Strategic Construction Solutions General Hazcom Program and the Department-Specific Hazcom Program Summary (Appendix A);
2. Completing required initial online general Hazcom training and participating in department-specific training, including the review of labels and SDSs prior to working with hazardous chemicals; knowing the hazards and precautionary procedures for hazardous chemicals used in the work area
3. Following safe work practices, standard operating procedures (SOPs) and wearing proper personal protective equipment (PPE) when working with hazardous chemicals
4. Immediately reporting accidents, incidents (including near misses), and unsafe conditions to your supervisor

E. Health and Safety (H&S) responsibilities include:

1. Developing, implementing and evaluating Strategic Construction Solutions general Hazcom Program
2. Providing assistance with determining the hazardous properties of chemicals for which SDSs may not be available
3. Managing CIS and reporting the chemical inventory to County and State agencies as required
4. Providing assistance with hazard assessment and PPE selection
5. Administering the Hazcom Program for Strategic Construction Solutions Locations, associated field locations and any remote facilities

VI. CHEMICAL INVENTORY

A. All Locations that use, handle or store hazardous chemicals must maintain an inventory of the hazardous chemicals present in their work areas. Inventories must be entered in Strategic Construction Solutions CIS, the online inventory system managed by H&S.

B. Consumer products must be included in the chemical inventory if the employee exposure to the product is significantly greater than the consumer exposure occurring during the principal consumer use of the product.

C. Chemical Inventory System (CIS) the following CIS links are available:

1. X: Drive Health and Safety SDS inventory.

VII. SAFETY DATA SHEETS (SDS)

A. Each location must maintain copies of any SDS received with incoming shipments of hazardous chemicals, obtain SDS of hazardous chemicals if received without an SDS, and shall ensure that SDSs are readily accessible during each work hours. SDSs may be maintained in electronic form so long as there are no barriers to employee access.

B. The Health and Safety department will review and ensure the most recent SDS is available for employees review.

C. Health and Safety will review of all SDS for chemicals used in the workplace. All SDS's will be reviewed for potential carcinogenic compounds. If the chemical is known to contain a compound that could cause cancer employees will be informed and proper protective measures taken to protect them.

D. Globally Harmonized System Format By June 2015, all SDSs must be GHS-compliant. SDSs will have a consistent 16-section format with the following sections (see Appendix B for details):

1. Section 1: Identification
2. Section 2: Hazard(s) Identification
3. Section 3: Composition/Information on Ingredients
4. Section4: First Aid Measures
5. Section 5: Fire-Fighting Measures
6. Section 6: Accidental Release Measures
7. Section 7: Handling and Storage
8. Section 8: Exposure Control/Personal Protection

9. Section 9: Physical and Chemical Properties
10. Section 10: Stability and Reactivity
11. Section 11: Toxicological Information
12. Section 12: Ecological Information (non-mandatory)
13. Section 13: Disposal Considerations (non-mandatory)
14. Section 14: Transportation Information (non-mandatory)
15. Section 15: Regulatory Information (non-mandatory) S
16. Section 16: Other Information

E. Trade Secrets: Manufacturers and importers may withhold the specific chemical identity of a hazardous chemical with certain "trade secret" provisions. Contact H&S for assistance with addressing "trade secret" information.

F. Obtaining SDSs can be obtained by:

1. Requesting copies from your supervisor
2. Contacting the vendor directly
3. Requesting H&S assistance

VIII. LABELS AND OTHER FORMS OF WARNING

A. Every container of a hazardous chemical, except containers that will contain chemicals for immediate use, must be labeled, tagged, or marked to identify the substance and appropriate hazard warnings.

B. The Hazcom program will be periodically audited by the H&S department to check for compliance with all aspects of the Hazcom program including SDS, chemical inventory, training and labels.

C. Manufacturer original label shall provide:

1. Identity of the hazardous substance
2. Signal word
3. Hazard statement(s)
4. Pictograms (see Appendix C)
5. Precautionary statement(s)
6. Name and address of the manufacturer, importer or responsible party

Detailed information on manufacturer labels and label requirements can be found online: http://www.osha.gov/dsg/hazcom/appendix_c.pdf. Labels shall be:

1. Legible
2. In English
3. Prominently displayed on the container

The original label shall not be removed or defaced unless the container is immediately marked with the required information.

D. Workplace Labels Minimum requirements

1. Every container of a hazardous chemical must be labeled, tagged, or marked, in English, to identify the chemical and to provide appropriate hazard warnings
2. Portable secondary (workplace) containers used immediately by the person performing the transfer do not need labels
3. Non-hazardous substances (e.g., distilled water) should be labeled in order to avoid confusion

E. Acceptable labeling conventions

1. Best practice is to include all information that is provided on the manufacturer's label
2. If a set of abbreviations is used routinely in the work area, definitions of the abbreviations must be posted in a prominent place in the work area and available to all employees
3. Alternative methods such as signs, placards, process sheets, and operating procedures are acceptable for individual stationary process containers, provided that the information is conveyed to all affected persons. Commonly used labeling systems include Department of Transportation, National Fire Protection Association and Hazardous Materials Identification System (see Appendix D)
4. Examples of acceptable labeling conventions include:
   a) Small volume containers such as micro-scale test tubes and vials can be placed in a rack and the rack can be labeled with the name of the hazardous chemical and the appropriate hazard
   b) Containers are labeled with a symbol and a sign is posted defining the meaning of the symbol; the posted information must include the name of the hazardous chemical and the appropriate hazard
   c) Secondary container labeled with unique product or common name must also contain the appropriate hazard warning; example "Marking Paint."
5. Workplace Signage The poster "Safety Data Sheets, Labels, and Hazardous Chemical Emergencies," (see Appendix E) must be displayed in all areas where hazardous chemicals are used, handled or stored. Departments must fill in all blank spaces (e.g., location of SDSs) on the poster.
6. Labeled/Unlabeled Pipes
7. Aboveground pipes transporting hazardous substances (gases, vapors, liquids, semi-liquids, or plastics) shall be labeled in accordance to CFR 1910.1200, "Identification of Piping." Employees shall not work on any unlabeled pipes until:
   a) The contents of the pipe are determined
   b) Appropriate safety precautions have been determined for the work
8. Labels on Containers Leaving Campus: All off campus shipments of hazardous chemicals must comply with the current U.S. Department of Transportation (DOT) requirements.

IX. EMPLOYEE INFORMATION AND TRAINING

A. Employees must complete the initial Hazard Communication training. Refresher training is required every year within the department or by retaking the course. In addition, employees must be trained on the specific hazards of the chemicals used in their department. Training must cover the following:

1. Signs and symptoms related to the exposures to hazardous chemicals used in the work area
2. The methods used to detect the presence or release of a hazardous chemical. This could include industrial hygiene monitoring, the use of continuous monitoring devices, visual appearance, or odors of chemicals
3. Specific procedures to protect employees such as safe work practices, standard operating procedures (SOPs), emergency response procedures, and use of personal protective equipment
4. Details of manufacturer labels, SDSs and workplace labeling system, and how that information can be used to assure safe handling and storage
5. Procedure for addressing non-routine tasks involving hazardous chemicals

B. Frequency: Supervisors must provide employees information and training regarding the physical and health hazards of the chemicals in the work area before assigning employees to work with hazardous chemicals. Refresher training is required whenever a new chemical hazard is introduced into the workplace or a new or updated SDS is received. Refresher training must be completed at least once each year.

C. Non-Routine Tasks: Employees must be provided training or refresher training prior to engaging in a non-routine task. Employees must be provided hazard notification and precautionary measures to avoid or minimize the potential for risk of exposure.

D. Documentation and Record Retention: Training must be documented and records must be retained for at least three years. The Illness & Injury Prevention Program Safety Training Attendance Record or its equal may be used to document instructor-led training. At a minimum, the following information must be documented:

1. Name of individual(s) trained
2. Name of individual(s) providing training for instructor-led courses
3. Date of training
4. Brief description of training topics covered

E. Computer-based training provided by Strategic Construction Solutions Learning Management System will be documented electronically.

X. MULTI-EMPLOYER WORKPLACES (Informing Contractors and Contract Workers)

A. Hazard information, which includes access to SDS, must be made available to contractors and contract workers if the work is to be performed in the presence of hazardous chemicals. Contractors and contract workers must also disclose hazard information for hazardous chemicals that are brought into the work area that may affect campus employees.

XI. EMERGENCY PROCEDURES

A. Employees shall follow emergency procedures covered in their Location specific Emergency Action Plan. Emergency response procedures are also covered in the SDSs, labels, and Strategic Construction Solutions Crises Management/Emergency Response Guide.

XII. PROGRAM REVIEW

A. H&S will conduct a periodic program review at least once every three (3) years.

XIII. APPENDICES

A. Department-Specific Hazard Communication Program Summary

B. Safety Data Sheets

C. GHS Pictograms and Labels

D. Common Labeling Systems

1. U. S. Department of Transportation (DOT)
2. National Fire Protection Association (NFPA)
3. Hazardous Materials Identification System (HMIS)

E. Safety Data Sheets, Labels and Hazardous Chemical Emergencies Poster

XIV. REFERENCES

29 CFR 1910.1200
OSHA and Cal/OSHA Hazard Communication Standard, CFR 1910.1200 and CCR Title 8, §5194)

REVISION DATE	REVIEW DATE	REVISION NUMBER	REVISION COMMENTS	AUTHOR
10/27/2015	10/27/2015	1	Reformatted and edited document	Bill Oswald
10/29/2015	10/29/2016	2	Reformatted and edited document	K. Stovall
28JAN2016		3	Edits	K. Rodriguez
09/09/2016	09/09/2016	3.1	Logo Change from SCS to Strategic Construction Solutions	Bill Oswald

Appendix A

HAZARD COMMUNICATION PROGRAM SUMMARY

Instruction: Complete the required information below to document Location -specific information. This summary, along with Strategic Construction Solutions Hazard Communication Program satisfies the OSHA 1910.1200 and Cal/OSHA requirements (8 CCR §5194).

Departments who handle, use or store hazardous chemicals in an industrial (non-laboratory) workplace are required to comply with Hazard Communication (Hazcom) Standard. The requirements include:

- **Written Hazcom Program** - Strategic Construction Solutions has a Hazcom program which includes this Location-specific summary page. Locations must complete this summary page to document Location-specific information. Along with this summary page, Locations must comply with the Hazcom program, posted on the Internal "The Well" website.
- **Hazardous Chemical Inventory** - Chemical inventories must be maintained in Strategic Construction Solutions Chemical Inventory System (CIS)
- **Safety Data Sheets (SDSs)** - An SDS is required for every hazardous chemical in the workplace and must be accessible during the work shift; departments may elect to store electronic copies or maintain hard copies
- **Labels and Other Forms of Warning** - In-house labels (sometimes called secondary (workplace) labels) must contain, at minimum, the identity of the chemical and its appropriate hazard warning
- **Training and Information** - Supervisor must provide training and information at time of initial assignment, whenever a new hazard is introduced into the workplace, and when employees may be exposed to other employers' workplace hazards; refresher training is required at least every year
- **Unlabeled Pipes and Non-Routine Tasks** - Supervisor must provide detailed hazard and procedural information prior to engaging in the task
- **Contractors and Multi-Employer Worksites** - Supervisors must inform contractors or other employers of hazardous chemicals present in the work area, precautionary measures and other information needed; contractors must notify departments of any hazardous chemicals brought into the department
- **Emergencies** - Follow Location Emergency Action Plan, and/or response actions described in SDSs; only trained personnel may clean up spills; if spill is too large to clean up or if there is imminent danger, **call 911.**

Locations covered under this program:
Building(s)/ Room #(s):

Location of:
Emergency Action Plan
Written Hazcom Program Summary
Chemical inventory (hard copy, if any)
Safety Data Sheets (hard copies, if any)
"Safety Data Sheets, Labels, and Hazardous Chemical Emergencies" poster

Location Hazcom Contact:

Location Safety Representative:

Other Location Specific Information:

Appendix B

SAFETY DATA SHEETS

The Hazard Communication Standard requires manufacturers to provide GHS-compliant SDSs (formerly known as MSDSs) by June 2015. The SDS must be in a uniform 16-section format which includes the sections described below. This information was taken from the OSHA Hazcom SDS Quick card. Detailed information can be found at https://www.osha.gov/Publications/OSHA3636.pdf .

Section 1, Identification: Includes product identifier; manufacturer or distributor name, address, phone number; emergency phone number; recommended use; restrictions on use.	**Section 10, Stability and reactivity**: Lists chemical stability and possibility of hazardous reactions.
Section 2, Hazard(s) identification: Includes all hazards regarding the chemical; required label elements.	**Section 11, Toxicological information:** Includes routes of exposure; related symptoms, acute and chronic effects; numerical measures of toxicity.
Section 3, Composition/information on ingredients: Includes information on chemical ingredients; trade secret claims.	**Section 12, Ecological information***
Section 4, First-aid measures: Includes important symptoms/effects, acute, delayed; required treatment.	**Section 13, Disposal considerations***
Section 5, Fire-fighting measures: Lists suitable extinguishing techniques, equipment; chemical hazards from fire.	**Section 14, Transport information***
Section 6, Accidental release measures: Lists emergency procedures; protective equipment; proper methods of containment and cleanup.	**Section 15, Regulatory information***
Section 7, Handling and storage: Lists precautions for safe handling and storage, including incompatibilities.	**Section 16, Other information:** Includes the date of preparation or last revision.
Section 8, Exposure controls/personal protection: Lists OSHA's Permissible Exposure Limits (PELs); Threshold Limit Values (TLVs); appropriate engineering controls; personal protective equipment (PPE).	Employers must ensure that: • SDSs are readily accessible to employees; • Employees are trained on how to interpret SDSs; • Document training; and • Retain records for at least a year
Section 9, Physical and chemical properties: Lists the chemical's characteristics.	

**Note: Since other Agencies regulate this information, OSHA will not be enforcing Sections 12 through 15.*

Appendix C

GHS PICTOGRAMS AND LABELS

GHS – Hazard Pictograms and Related Hazard Classes		
		
Exploding Bomb • Explosives • Self-reactive • Organic peroxides	**Corrosion** • Skin corrosion/burns • Eye damage • Corrosive to metals	**Flame Over Circle** • Oxidizing gases • Oxidizing liquids • Oxidizing solids
		
Gas Cylinder • Gases under pressure	**Environment** • Aquatic toxicity	**Skull & Crossbones** • Acute toxicity (fatal or toxic)
		
Exclamation Mark • Irritant (eye & skin) • Skin sensitizer • Acute toxicity • Narcotic effects • Respiratory tract irritant • Hazardous to ozone layer (non-mandatory)	**Health Hazard** • Carcinogen • Mutagenicity • Reproductive toxicity • Respiratory sensitizer • Target organ toxicity • Aspiration toxicity	**Flame** • Flammables • Pyrophoric • Self-heating • Emits flammable gas • Self-reactive • Organic peroxides

The Hazard Communication Standard requires pictograms on manufacturer labels to alert users of the hazards associated with hazardous chemicals. Pictograms consist of a symbol on a white background with red border and represent a specific hazard. Pictograms are determined by the chemical hazard classification scheme found in Appendix A and B of the standard. Pictograms can be downloaded directly from https://www.osha.gov/dsg/hazcom/pictograms/index.html

OSHA (800) 321-OSHA (6742)

SAMPLE LABEL

PRODUCT IDENTIFIER

CODE _____
Product Name _____

SUPPLIER IDENTIFICATION

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

PRECAUTIONARY STATEMENTS

Keep container tightly closed. Store in 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 measure 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 (on hair): Take off immediately any contaminated clothing. Rinse skin with water.

HAZARD PICTOGRAMS

SIGNAL WORD
Danger

HAZARD STATEMENT

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

SUPPLEMENTAL INFORMATION

Directions for use

_____
_____
_____

Fill weight: _____ Lot Number _____

Gross weight: _____ Fill Date: _____
Expiration Date: _____

GHS Label

GHS labels include the following elements:

- Product identifier
- Hazard pictograms
- Precautionary statements
- Hazard statement
- Signal word
- Supplier identifier
- Supplemental information

Information taken from OSHA Quick Card

Appendix D

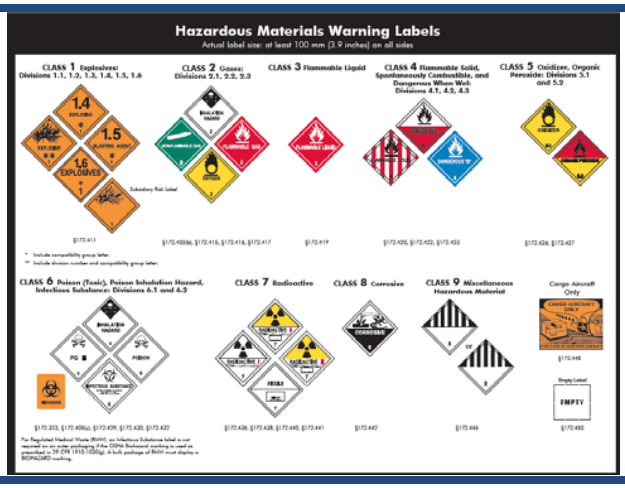
COMMON LABELING SYSTEMS:

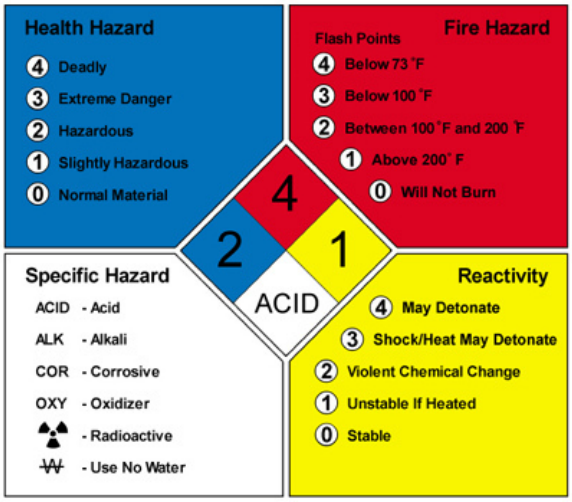
DOT, NFPA, HMIS

There are many labeling systems commonly used to communicate the potential hazards of chemicals. The more commonly used systems are from the U.S. Department of Transportation (DOT), National Fire Protection Association (NFPA) and the Hazardous Materials Identification System (HMIS).

U.S. Department of Transportation (DOT) system categorizes hazardous materials into nine classes:

Class 1: Explosives
Class 2: Gases
Class 3: Flammable Liquids
Class 4: Flammable Solids
Class 5: Oxidizers, Organic Peroxides
Class 6: Toxic (Poison)
Class 7: Radioactive
Class 8: Corrosive
Class 9: Miscellaneous



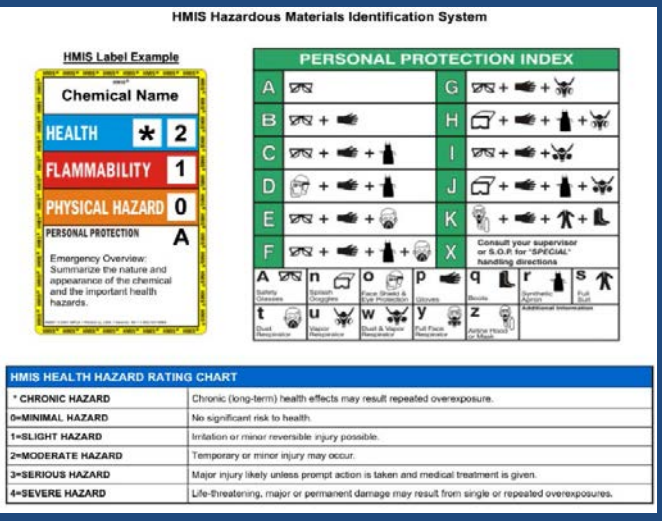


The National Fire Protection Association (NFPA) system consist of a diamond-shaped label with four sections that are color coded:

- Blue: Health Hazard
- Red: Fire hazard
- White: Specific Hazards
- Yellow: Reactivity

The numbering system ranges from zero (0) to four (4). The larger the number, the greater the hazard. Zero (0) is least hazardous and four (4) is the most hazardous. The NFPA codes describe how a material might behave in a fire situation.

The **Hazardous Materials Identification System (HMIS)** uses a similar numbering system as NFPA. The current version of the HMIS manual (HMIS III) updated the formerly yellow coded "Reactivity" section to an orange "Physical Hazard" section to align with OSHA Hazcom standard. The white colored "Personal Protection" section uses the HMIS personal protection index to describe the required personal protective equipment.



Appendix E

SAFETY DATA SHEETS, LABELS, *and* HAZARDOUS CHEMICAL EMERGENCIES

Location Name:
SDS Location:
Contact for SDS Information:

Hazard Communication Standard requires manufacturers of products containing hazardous chemicals to furnish safety data sheets (SDSs) for their products. The SDS provides information such as toxicity, flammability, and reactivity hazard data; handling and storage guidance; and emergency procedures to follow for spills, exposure, and fighting fires.

Manufacturers' labels must contain pictograms, signal words, hazard and precautionary statements, product identifier, and supplier information.

Hazardous chemicals are not limited to the laboratory. Materials such as cleaning agents, paints, art materials, photographic chemicals, and automotive supplies may contain hazardous chemicals. Whenever there is doubt about the hazards associated with any material, contact your Supervisor or Safety Department at 720-541-6613.

Prior to performing a non-routine or unfamiliar operation that may involve hazardous chemicals, contact your Supervisor or Location Safety Representative for information and training.

IN CASE OF EMERGENCY, CALL 911	
For Skin or Eye Contact, immediately flush the affected area with running water for at least 15 minutes. If a substantial portion of the body is involved, use a safety shower. Seek medical attention. If the chemical is toxic, or if its toxic properties are unknown, **call 911**. **For Inhalation or Ingestion**, follow instructions on the product label or SDS. Seek medical attention or **call 911**.	**For Chemical Spills**, check product label or SDS for instructions. If you suspect the chemical is flammable, extinguish all ignition sources. If instructions are not immediately available, the spill is large, or if chemical has definite or unknown corrosive, explosive, or toxic properties, evacuate and restrict access to the area and **call 911**. Clean up small spills only if you are trained and have access to spill kit supplies.

***NOTICE TO EMPLOYEES**: You have the right to see and copy your medical records and any records your employer maintains of your exposure to hazardous substances or harmful physical agents. In addition, you, your personal physician, or your collective bargaining agent may request information contained in SDSs. No discrimination action (including discharge) may be taken against you if you exercise your legal right.*

HSE MANUAL

SECTION #HS A004

Injury Illness Prevention Plan

Revision 3.1_09SEP2016

I. SCOPE

1. Strategic Construction Solutions recognizes the benefits of a safe and healthful work environment. Strategic Construction Solutions is committed to maintaining a workplace that is as free from injuries and illnesses as is practically possible. Clean Harbors also believes that input with regard to health and safety issues and concerns from all levels of personnel is a necessary requirement for achieving this objective, and as such has developed an Injury and Illness Prevention Program.
2. The principles that comprise the foundation of the company health and safety programs are:
    a. Occupational injuries and illnesses can be prevented
    b. Every employee has a responsibility for preventing injuries and illnesses
    c. Recognizing and correcting safety hazards is important in preventing incidents
    d. Deficiencies must be noted and corrected in a timely manner
    e. Sustained incidents can be useful tools in recognizing and preventing future occurrences
    f. Training is an essential element for promoting safe workplaces
    g. Working safe is as important as providing quality service in an efficient manner
3. In order to eliminate foreseeable hazards and maintain a safe and healthful work environment, Strategic Construction Solutions will provide the opportunities and conditions to ensure safe work practices. In addition, for all locations will complies with federal, state, and municipal legislation, Strategic Construction Solutions will fulfill the requirements of Title 8, Section 3203 of the California Code of Regulations which stipulates that every employer within federal, state, and municipal in California shall write, establish, implement and maintain an effective Injury and Illness Prevention Program.

II. PLAN CONTENT

1. Depending on the type of operation and/or services provided by the individual facility, the site specific IIPP may differ from site to site on the exact content and format, however, at a minimum the following components must be included within the written plans which are procedurally put into practice.
2. Management Commitment/ Assignment of Responsibilities
    a. Employer Information
    b. Statement of Commitment to Safety
    c. IIPP Content Coordinator
    d. Program Administrator
    e. General Managers, Project Managers, and Supervisors Responsibilities
3. Compliance Systems
    a. Management Role
    b. Employees' Role
    c. System for assuring employee compliance with safe work practices
    d. Safety Communication Systems with Employees

e. Hazard Assessment System

f. Scheduled Inspections / Evaluation System (i.e., Audits)

g. Variances

h. Accident Investigation

i. Hazard Correction Procedures for correcting unsafe/ unhealthy conditions)

j. Safety and Health Training and Instruction

k. Recordkeeping and Documentation

III. MANAGEMENT ROLE

1. Employer Information

Strategic Construction Solutions

4702 E Southern Avenue

Mesa, AZ 85246

2. Statement of Commitment to Safety

Strategic Construction Solutions is committed to a standard of excellence as a health and safety leader and affirm to its employees, customers, and the public that it will always conduct its business activities in a manner which is protective of human health, safety and the environment. All Strategic Construction Solutions Companies, contractors, and subcontractors under our operating control must manage Health, Safety and Environmental performance/systems in line with this Commitment and Policy.

Strategic Construction Solutions Corporate Health, Safety and Environmental Policy is intended to ensure that Strategic Construction Solutions continuously achieves superior performance in fulfilling this Commitment while providing an enabling environment that allows all employees to participate and work collaboratively in developing, promoting, and improving health and safety at work.

a. We will continuously ensure that all our activities comply with federal, state, provincial, and local health, safety, and environmental statutes and regulations. We will make every effort to exceed those standards whenever possible to further enhance health and safety and environmental stewardship.

b. We will plan work on the principle of safety first to pursue the goal of no harm to people or the environment.

c. We will strive to continually improve the performance of Strategic Construction Solutions Health, Safety and Environmental Management System. This includes providing the necessary training, equipment, and procedures to ensure a safe work environment.

d. We will conduct audits and self-assessments of compliance with this Policy, measure progress of the Strategic Construction Solutions Health and Safety performance to ensure that results demonstrate continual improvement, and report periodically to the Chief Executive Officer our performance.

e. Every employee, contractor, and subcontractor on Strategic Construction Solutions premises or projects are accountable and responsible for adhering to this Commitment and to comply with the law and all Policies and Procedures.

f. Every employee holds the right and responsibility of intervening in unsafe or non-compliant situations and to refuse work if they believe that a dangerous situation or imminent danger exists at a worksite. It is an expectation of all employees to immediately report health and safety concerns, interventions, and work refusals to Strategic Construction Solutions management. Strategic Construction Solutions managers are expected to take prompt and appropriate remedial action when notified.

g. All employees are encouraged to seek guidance from their supervisor, the Director of Human Resources, the Director of Safety if they have reason to believe the Company's Health, Safety standards are being violated.

h. Management. Strategic Construction Solutions Managers are expected to take prompt and appropriate remedial action if notified of a health or safety concern.

3. IIPP Content Administrator

    a. The Director of Safety has responsibility for the contents and revisions of the Injury Illness Prevention Plan. No revisions or additions shall take place without the written permission of the Director of Safety.

4. IIPP Program Administrator

    a. The Director of Safety has the responsibility and held accountable over the implementation of the IIPP. The Director of Safety may delegate all or part the responsibility to a staff member.

5. Project Managers and Supervisors Responsibilities

    a. Project managers and Supervisors are responsible for the implementing and maintaining the IIPP program in their work areas. Employee questions will be addressed by the Project Manager and Supervisor regarding the IIPP. A copy will be in the possession of each Project Manager and Supervisor when in the field.

6. Management Responsibility

    a. Management is responsible for ensuring that all safety and health policies and procedures are clearly communicated and understood by all employees. Managers and supervisors are expected to enforce the rules fairly, uniformly and encourage employees to inform the employer of hazards at the worksite without fear of reprisal.

7. Employee Responsibility

    a. All employees are responsible for using safe work practices, for following all directives, policies and procedures, and for assisting in maintaining a safe work environment. All employees are expected to stop any unsafe act or job.

    b. Strategic Construction Solutions has a system where by employees can report any safety hazard anonymously without fear of reprimand or reprisals. Reporting can be done through the following:

        i. Email to Human Resources HR or Health and safety

        ii. Hazard ID cards

        iii. Suggestion boxes

8. System to Ensure Compliance

a. Strategic Construction Solutions systems of ensuring that all workers comply with the rules and maintain a safe work environment include:
    i. Informing workers of the provisions of our IIP Program;
    ii. Evaluating the safety performance of all workers;
    iii. Recognizing employees who perform safe and healthful work practices;
    iv. Providing training to workers whose safety performance is deficient;
    v. Disciplining workers for failure to comply with safe and healthful work practices
    vi. Behavioral based observations to identify unsafe behaviors

9. Communication
    a. Strategic Construction Solutions recognizes that open, two-way communication between management and staff on health and safety issues is essential to an injury-free, productive workplace. The following system of communication is designed to facilitate a continuous flow of safety and health information between management and staff in a form that is readily understandable and consists of one or more of the following checked items:
        i. New worker orientation including a discussion of safety and health policies and procedures.
        ii. Review of our IIP Program.
        iii. The IIPP will be review annually by the IIPP Content Administrator and the Program Administrators.
            a. The IIPP review will take place in the fourth quarter of each year annually.
            b. Workplace safety and health training programs.
        iv. Regularly scheduled safety meetings.
        v. Daily JSA's and Risk Assessments will be performed, processes, procedures, or equipment are introduced to the workplace that represents a new occupational safety and health hazard; and whenever a new or previously unrecognized hazard arises.
        vi. Effective communication of safety and health concerns between workers and supervisors.
            a. Employees have the authority to stop work activities they feel is unsafe.
            b. During Tailgate meeting employees are to bring up safety concerns to Project Manager
        vii. Posted or distributed safety information.
    b. A labor/management safety and health committee that meets regularly, prepares written records of the safety and health committees meetings, reviews results of the periodic scheduled inspections, reviews investigations of accidents and exposures and makes suggestions to management for the prevention of future incidents, reviews investigations of alleged hazardous conditions, and submits recommendations to assist in the evaluation of employee safety suggestion.

10. Hazard Assessment

a. Periodic inspections to identify and evaluate workplace hazards shall be performed by competent observer(s) in the following areas of our workplace in accordance with audit policy.

b. Audits: Periodic inspections are performed according to the following schedule:

   i. When we initially established our IIP Program;

   ii. When new substances, processes, procedures or equipment which present potential new hazards are introduced into our workplace;

   iii. When new, previously unidentified hazards are recognized;

   iv. When occupational injuries and illnesses occur;

   v. When we hire and/or reassign permanent or intermittent workers to processes, operations, or tasks for which a hazard evaluation has not been previously conducted;

   vi. Whenever workplace conditions warrant an inspection.

c. Periodic inspections consist of identification and evaluation of workplace hazards utilizing predetermined methods to identify and evaluate workplace hazards. Periodical inspections will be documents and tracked by Director of Safety.

d. Variance

   i. In the case of a situation that has not been covered by written policy to remediate a hazard a variance must be obtained.

11. Accident Investigation

a. Procedures for investigating workplace accidents and incidents are found in Incident reporting policy.

b. The following items are addressed in the Incident reporting policy;

   i. Visiting the accident scene as soon as possible;

   ii. Interviewing injured workers and witnesses;

   iii. Examining the workplace for factors associated with the accident/exposure;

   iv. Determining the cause of the accident/exposure;

   v. Taking corrective action to prevent the accident/exposure from reoccurring;

   vi. Recording the findings and corrective actions taken.

12. Hazard Correction

a. Unsafe or unhealthy work conditions, practices or procedures shall be corrected in a timely manner based on the severity of the hazards. Hazards shall be corrected according to the following procedures:

   i. When observed or discovered;

   ii. When an imminent hazard exists which cannot be immediately abated without endangering employee(s) and/or property, we will remove all exposed workers from the area except those necessary to correct the existing condition.

   iii. Workers necessary to correct the hazardous condition shall be provided with the necessary protection;

b. All such actions taken and dates they are completed shall be documented on the appropriate forms.

c. In the case of a situation that has not been covered by written policy to remediate a hazard a variance must be obtained.

13. Training and Instruction

a. All workers, including managers and supervisors, shall have training and instruction on general and job-specific safety and health practices. Training and instruction shall be provided as follows:

i. When the IIP Program is first established;

ii. To all new workers

iii. To all workers given new job assignments for which training has not previously provided;

iv. Whenever new substances, processes, procedures or equipment are introduced to the workplace and represent a new hazard;

v. Whenever the Strategic Construction Solutions is made aware of a new or previously unrecognized hazard;

vi. To supervisors to familiarize them with the safety and health hazards to which workers under their immediate direction and control may be exposed;

vii. To all workers with respect to hazards specific to each employee's job assignment.

b. Workplace safety and health practices for all industries include, but are not limited to, the following:

i. Explanation of the employer's IIP Program, emergency action plan and fire prevention plan, and measures for reporting any unsafe conditions, work practices, injuries and when additional instruction is needed.

ii. Use of appropriate clothing, including gloves, footwear, and personal protective equipment.

iii. Information about chemical hazards to which employees could be exposed and other hazard communication program information.

iv. Provisions for medical services and first aid including emergency procedures.

c. In addition, we provide specific instructions to all workers regarding hazards unique to their job assignment, to the extent that such information was not already covered in other training.

14. Recordkeeping

a. Strategic Construction Solutions is a low hazard industry. We have taken the following steps to implement and maintain our IIP Program:

i. Records of hazard assessment inspections, including the person(s) or persons conducting the inspection;

ii. Documentation of safety and health training for each worker, including the worker's name or other identifier, training dates, type(s) of training, and training

providers are recorded on PayCom learning Management System. All training records and documentation are available upon request through the Local offices and corporate offices.

b. Inspection records and training documentation will be maintained for three years, except for training records of employees who have worked for less than one year.

15. Standard Operating Procedures & Safe Work Practices

a. Strategic Construction Solutions locations must develop site specific Standard Operating Procedures and/or Safe Work Practices to ensure compliance to corporate Health & Safety Standards. These SOPs/SWPs must, at a minimum, be as stringent as Corporate Standards, while maintaining compliance with all applicable legislative bodies for the area work is performed in.

IV. References

1. Cal/OSHA Title 8

REVISION DATE	REVIEW DATE	REVISION NUMBER	REVISION COMMENTS	AUTHOR
10/05/2015	10/07/2015	1	Reformatted and edited document	Bill Oswald
10/29/2015	10/29/2016	2	Reformatted and edited document	K. Stovall
10NOV15	10NOV15	3	Edited document	K. Stovall
09/09/2016	09/09/2016	3.1	Logo Change from SCS to Strategic Construction Solutions	Bill Oswald

STRATEGIC
CONSTRUCTION SOLUTIONS

HSE MANUAL

SECTION #HS A005

Emergency Action Plan (EAP) Policy

Revision 2.1_09SEP2016

I. SCOPE

1. Strategic Construction Solutions Emergency Action Plan is designed to minimize injury and loss of human life and company resources by training employees, procuring and maintaining necessary equipment, and assigning responsibilities. This plan applies to all emergencies that may reasonably be expected to occur at the various Strategic Construction Solutions locations.
2. This policy is designed to be an outline for each location to develop its own Emergency Action Plan specific to that location.

II. ASSIGNMENT OF RESPONSIBILITIES

1. Emergency Plan Manager
    a. The Director of Safety shall manage the Emergency Action Plan policy for Strategic Construction Solutions. The Director of Safety shall also maintain all training records pertaining to this plan. The plan director is responsible for scheduling routine tests of the Strategic Construction Solutions overall emergency notification system with the appropriate local Emergency Plan Coordinators.
    b. The Director of Safety shall ensure local Emergency Plan Coordinators work with local public resources, such as fire department and emergency medical personnel, to ensure that they are prepared to respond as detailed in this plan.
    c. The Director of Safety may be contacted by employees who need more information about the plan or an explanation of their duties under the plan.
2. Emergency Plan Coordinators
    a. The Strategic Construction Solutions Emergency Plan Coordinators are assigned for each Strategic Construction Solutions Location.
    b. The Coordinator will be responsible for the implementation of this policy for their location.
3. Evacuation Wardens
    a. Wardens are assigned by the Emergency Plan Coordinator for each location.
    b. Emergency Plan Coordinators can act as an Evacuation warden in smaller locations.
    c. Wardens are responsible to ensure all employees in their assigned area have evacuated the building during an emergency.
    d. Wardens should be issued a High Visibility Vest when acting in their capacity as a warden.

III. PLAN IMPLEMENTATION

1. Reporting Fire and Emergency Situations
    a. All fires and emergency situations will be reported as soon as possible to Emergency Plan Coordinator by one of the following means:
        i. Verbally, as soon as possible during normal work hours
2. To eliminate confusion and the possibility of false alarms, only the Emergency Plan Coordinator is authorized to contact the appropriate community emergency response personnel. The

telephone numbers and contact information for the emergency response personnel for Strategic Construction Solutions:

a. Fire: 911
b. Police/Sheriff: 911
c. Ambulance/EMS: 911

3. Under no circumstances shall an employee attempt to fight a fire that has passed the incipient stage (that which can be put out with a fire extinguisher), nor shall any employee attempt to enter a burning building to conduct search and rescue. These actions shall be left to emergency services professionals who have the essential training, equipment, and experience (such as the fire department or emergency medical professionals). Untrained individuals may endanger themselves and/or those they are trying to rescue.
4. Informing Strategic Construction Solutions Employees of Fires and Emergency Situations
    a. In the event of a fire or emergency situation, Emergency Plan Coordinators shall ensure that all employees are notified as soon as possible using the building alarm system (which includes both audible and visual alarms 24 hours a day). Responsible Person shall provide special instructions to all employees via the public address system.
    b. If a fire or emergency situation occurs after normal business hours, Emergency Plan Coordinators shall contact all employees not on shift of future work status, depending on the nature of the situation.
5. Corporate Notification
    a. Emergency Plan Coordinators shall contact Strategic Construction Solutions senior management as soon as possible if media coverage of the situation is expected.
    b. Emergency Plan Coordinators shall contact the Director of Safety as soon as possible with information on employee injuries and/or loss of life, property damages, or theft.
6. Emergency Contact Information
    a. Emergency Plan Coordinators shall maintain a list of all employees' personal emergency contact information and shall keep the list in a specific location for easy access in the event of an emergency.
7. Evacuation Routes
    a. Emergency evacuation escape route plans (see Appendix A) are posted in Designated Areas throughout office. In the event that a fire/emergency alarm is sounded or instructions for evacuation are given by Emergency Plan Coordinators, all employees shall immediately exit the building at the nearest exits as shown in the escape route plans, and shall meet as soon as possible at the Designated Assembly Area.
    b. Mobility impaired employees and their assigned assistants will gather at the Designated Area within the building to ensure safe evacuation in the pre-determined fashion.
8. Advanced Medical Care
    a. Under no circumstances shall an employee provide advanced medical care and treatment. These situations shall be left to emergency services professionals, or specially trained personal, which have the necessary training, equipment, and experience.
9. Accounting for Employees/Visitors After Evacuation

a. Once an evacuation has occurred, an Emergency Plan Coordinators and wardens shall account for each employee/visitor assigned to them at the Designated Assembly Area. Each employee is responsible for reporting to the appropriate Emergency Plan Coordinators and wardens so an accurate head count can be made. All employee counts shall then be reported to the Emergency Plan Manager as soon as possible.

10. Re-entry

a. Once the building has been evacuated, no one shall re-enter the building for any reason, except for designated and properly trained rescue personnel (such as fire department or emergency medical professionals).

b. All employees shall remain at the Designated Assembly Area until the fire department or other emergency response agency notifies Emergency Plan Coordinators and wardens that either:

i. The building is safe for re-entry, in which case personnel shall return to their workstations; or

ii. The building/assembly area is not safe, in which case personnel shall be instructed by Emergency Plan Coordinators how and when to vacate the premises.

11. Sheltering in Place

a. In the event that chemical, biological, or radiological contaminants are released into the environment in such quantity and/or proximity to an Strategic Construction Solutions, location, authorities and/or Emergency Plan Coordinators may determine that is safer to remain indoors rather than to evacuate employees. The Emergency Plan Coordinators shall announce *Shelter in Place* status by public address system or other means of immediate notification available at worksite.

b. Emergency Plan Coordinators shall immediately close the business. If there are customers, clients, or visitors in the building, they shall be advised to stay in the building for their safety.

c. Unless there is an imminent threat, employees, customers, clients, and visitors shall call their emergency contacts to let them know where they are and they are safe.

d. Emergency Plan Coordinators shall turn on call-forwarding or alternative telephone answering systems or services. The recording for voice mail or automated attendant shall be changed to indicate that the business is closed, and that staff and visitors will be remaining in the building until authorities advise that it is safe to leave.

e. Emergency Plan Coordinators shall quickly lock exterior doors and close windows, air vents, and fireplace dampers. Emergency Plan Coordinators familiar with the building's mechanical systems shall turn off, seal, or disable all fans, heating and air conditioning systems, and clothes dryers, especially those systems that automatically provide for exchange of inside air with outside air. If there is a danger of explosion, Emergency Plan Coordinators shall close the window shades, blinds, or curtains.

f. All employees, customers, and visitors shall move immediately to the Shelter-In-Place locations within the building. Emergency Plan Coordinators shall seal all windows, doors, and vents with plastic sheeting and duct tape.

g. Emergency Plan Coordinators shall write down the names of everyone in the room, and call the designated emergency contact outside of the building to report who is in the

room, and their affiliations with Company Name (employee, visitor, client, and customer).

h. Emergency Plan Coordinators shall monitor telephone, radio, television, and Internet reports for further instructions from authorities to determine when it is safe to leave the building.

12. Severe Weather

a. The Emergency Plan Coordinators shall announce severe weather alerts (such as tornados) by public address system or other means of immediate notification available at worksite. All employees shall immediately retreat to the Designated Area until the threat of severe weather has passed as communicated by the Emergency Plan Coordinators.

IV. TRAINING

1. All employees shall receive instruction on this Emergency Action Plan as part of New Employee Orientation upon hire. Additional training shall be provided:
    a. When there are any changes to the plan and/or facility
    b. When an employee's responsibilities change
    c. Annually as refresher training
2. Items to be reviewed during the training include:
    a. Proper housekeeping
    b. Fire prevention practices
    c. Fire extinguisher locations, usage, and limitations
    d. Threats, hazards, and protective actions
    e. Means of reporting fires and other emergencies
    f. Names of Emergency Action Plan Manager and Coordinators
    g. Individual responsibilities
    h. Alarm systems
    i. Escape routes and procedures
    j. Emergency shut-down procedures
    k. Procedures for accounting for employees and visitors
    l. Closing doors
    m. Sheltering in place
    n. Severe weather procedures
    o. Emergency Action Plan availability
3. Fire/Evacuation Drills
    a. Fire/Evacuation drills shall be conducted at least annually, and shall be conducted in coordination with local police and fire departments. Additional drills shall be conducted if physical properties of the business change, processes change, or as otherwise deemed necessary.

4. Training Records

    a. Responsible Person shall document all training pertaining to this plan and shall maintain records on Strategic Construction Solutions Learning Management Systems.

V. PLAN EVALUATION

1. This Emergency Action Plan shall be reviewed annually, or as needed if changes to the worksite are made, by Emergency Plan Coordinators. Following each fire drill, Responsible Management and Employee Representatives shall evaluate the drill for effectiveness and weaknesses in the plan, and shall implement changes to improve it.

REVISION DATE	REVIEW DATE	REVISION NUMBER	REVISION COMMENTS	AUTHOR
01/14/2016	10/14/2017	1	Reformatted and edited document	Bill Oswald
01MAR16		2	Reformatted and edited document	K. Rodriguez
09/09/2016	09/09/2016	2.1	Logo Change from SCS to Strategic Construction Solutions	Bill Oswald

Strategic Construction Solutions Local Emergency Action Plan			
Location Address:			
Local Emergency Plan Coordinator:			
Local Emergency Services Phone Numbers			
Police/Sheriff's department		911	
Fire Department		911	
Ambulance/EMS		911	
Safety Department	720-541-6613 Office 303-515-0071 Cell	--	safety@atwell-group.com
HR Department	248-447-2023	--	HR@atwell-group.com
Fleet Department	248-447-2000	--	fleet@atwell-group.com
Building Maintenance			
Emergency Response Plan Details			
Evacuation Muster Point:			
Warden 1		Area of responsibility	
Warden 2		Area of responsibility	
Warden 3		Area of responsibility	
List potential local emergencies, I.e. Tornados, Hurricanes Snow storms etc.			
1.			
2.			
3.			
4.			
Creation Date:		Annual review Date:	

Emergency Evacuation Diagram			
Location:		Emergency Plan Coordinator :	

Emergency Evacuation Diagram			
Location:		Emergency Plan Coordinator :	

EVACUATION PLAN

1234 ANY ST.

1 st Floor

EMERGENCY PHONE #: 911

YOU ARE HERE

ELEVATOR

FC FIRE CAB

STAIRWAY

FIRE HOSE or EXTINGUISHER

PULL BOX

EXIT ROUTES

PERSONS WITH DISABILITIES SHALL CALL 911 TO REPORT THEIR LOCATION & PROCEED TO NEAREST STAIRWELL & AWAIT ASSISTANCE.

IN CASE OF FIRE DO NOT USE ELEVATOR USE STAIRS

ALL ALARMS - HORN SOUND

STRATEGIC
CONSTRUCTION SOLUTIONS

HSE MANUAL

SECTION #HS 006

General Health and Safety Policy

Revision 1.1_09SEP2016

I. SCOPE

1. Strategic Construction Solutions recognizes the benefits of a safe and healthy work environment. Strategic Construction Solutions is committed to maintaining a workplace that is as free from injuries and illnesses as is practically possible. Strategic Construction Solutions also believes that input with regard to health and safety issues and concerns from all levels of personnel is a necessary requirement for achieving this objective, and as such has developed an General Health and Safety Provisions for employees to follow.
2. In order to eliminate foreseeable hazards and maintain a safe and healthful work environment, Strategic Construction Solutions will provide the opportunities and conditions to ensure safe work practices. In addition, for all locations will comply with federal, state, and municipal legislation.

II. PLAN CONTENT

1. Management Responsibility
    a. Management is responsible for ensuring that all safety and health policies and procedures are clearly communicated and understood by all employees. Managers and supervisors are expected to enforce the rules fairly, uniformly and encourage employees to inform the employer of hazards at the worksite without fear of reprisal.
2. Employee Responsibility
    a. All employees are responsible for using safe work practices, for following all directives, policies and procedures, and for assisting in maintaining a safe work environment. All employees are expected to stop any unsafe act or job.
    b. Strategic Construction Solutions has a system where by employees can report any safety hazard anonymously without fear of reprimand or reprisals. Reporting can be done through the following:
        i. Email to Human Resources HR or Health and Safety
        ii. Hazard ID cards
        iii. Suggestion boxes
    c. Code of Safe Practices
        i. All persons shall follow these safe practice rules, render every possible aid to safe operations, and report all unsafe conditions or practices to the foreman or superintendent.
        ii. Foremen shall insist on employees observing and obeying every rule, regulation, and order as is necessary to the safe conduct of the work, and shall take such action as is necessary to obtain observance.
        iii. Anyone known to be under the influence of drugs or intoxicating substances that impair the employee's ability to safely perform the assigned duties shall not be allowed on the job while in that condition.
        iv. Horseplay, scuffling, and other acts that tend to have an adverse influence on the safety or well-being of the employees shall be prohibited.

v. Work shall be well planned and supervised to prevent injuries in the handling of materials and in working together with equipment.

vi. No one shall knowingly be permitted or required to work while the employee's ability or alertness is so impaired by fatigue, illness, or other causes that it might unnecessarily expose the employee or others to injury.

vii. Employees shall not enter manholes, underground vaults, chambers, tanks, silos, or other similar places that receive little ventilation, unless it has been determined that is safe to enter.

viii. Employees shall be instructed to ensure that all guards and other protective devices are in proper places and adjusted, and shall report deficiencies promptly to the foreman or superintendent.

ix. 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 foreman.

x. All injuries shall be reported promptly to the supervisor so that arrangements can be made for medical or first aid treatment.

xi. When lifting heavy objects, proper lifting techniques should be used.

xii. Inappropriate footwear or shoes with thin or badly worn soles shall not be worn.

xiii. 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.

3. Hazard Assessment

a. Periodic inspections to identify and evaluate workplace hazards shall be performed by competent observer(s) in the following areas of our workplace in accordance with audit policy.

b. Audits: Periodic inspections are performed according to the following schedule:

i. When we initially established our Management Program;

ii. When new substances, processes, procedures or equipment which present potential new hazards are introduced into our workplace

iii. When new, previously unidentified hazards are recognized

iv. When occupational injuries and illnesses occur

v. When we hire and/or reassign permanent or intermittent workers to processes, operations, or tasks for which a hazard evaluation has not been previously conducted

vi. Whenever workplace conditions warrant an inspection

c. Periodic inspections consist of identification and evaluation of workplace hazards, Equipment and Materials to identify and evaluate potential unsafe conditions or workplace hazards. Periodical inspections will be documents and tracked by Director of Safety.

d. Variance

i. In the case of a situation that has not been covered by written policy to remediate a hazard a variance must be obtained.

4. Accident Investigation
    a. Procedures for investigating workplace accidents and incidents are found in Incident Reporting Policy (HS B012).
    b. The following items are addressed in the Incident Reporting Policy
        i. Visiting the accident scene as soon as possible
        ii. Interviewing injured workers and witnesses
        iii. Examining the workplace for factors associated with the accident/exposure
        iv. Determining the cause of the accident/exposure
        v. Taking corrective action to prevent the accident/exposure from reoccurring
        vi. Recording the findings and corrective actions taken
5. Hazard Correction
    a. Unsafe or unhealthy work conditions, practices or procedures shall be corrected in a timely manner based on the severity of the hazards. Hazards shall be corrected according to the following procedures:
        i. When observed or discovered
        ii. When an imminent hazard exists which cannot be immediately abated without endangering employee(s) and/or property, we will remove all exposed workers from the area except those necessary to correct the existing condition
        iii. Workers necessary to correct the hazardous condition shall be provided with the necessary protection
    b. All such actions taken and dates they are completed shall be documented on the appropriate forms
    c. In the case of a situation that has not been covered by written policy to remediate a hazard a variance must be obtained
6. Training and Instruction
    a. All workers, including managers and supervisors, shall have training and instruction on general and job-specific safety and health practices. Training and instruction shall be provided as follows:
        i. To all new workers
        ii. To all workers given new job assignments for which training has not previously provided
        iii. Whenever new substances, processes, procedures or equipment are introduced to the workplace and represent a new hazard
        iv. Whenever Strategic Construction Solutions is made aware of a new or previously unrecognized hazard
        v. To supervisors to familiarize them with the safety and health hazards to which workers under their immediate direction and control may be exposed

vi. To all workers with respect to hazards specific to each employee's job assignment

b. Workplace safety and health practices for all industries include, but are not limited to, the following:

i. Explanation of the safety policies, emergency action plan and fire prevention plan, and measures for reporting any unsafe conditions, work practices, injuries and when additional instruction is needed.

ii. Use of appropriate clothing, including gloves, footwear, and personal protective equipment.

iii. Information about chemical hazards to which employees could be exposed and other hazard communication program information.

iv. Provisions for medical services and first aid including emergency procedures.

c. For equipment being utilized only qualified and trained operators will be allowed to operate that equipment.

d. In addition, we provide specific instructions to all workers regarding hazards unique to their job assignment, to the extent that such information was not already covered in other training.

7. Recordkeeping

a. Strategic Construction Solutions is a low hazard industry. We have taken the following steps to implement and maintain our Safety Management system:

i. Records of hazard assessment inspections, including the person(s) or persons conducting the inspection

ii. Documentation of safety and health training for each worker, including the worker's name or other identifier, training dates, type(s) of training, and training providers are recorded on PayCom Learning Management System. All training records and documentation are available upon request through the local offices and corporate offices.

b. Inspection records and training documentation will be maintained for three years, except for training records of employees who have worked for less than one year.

8. Standard Operating Procedures & Safe Work Practices

a. Strategic Construction Solutions locations must develop site specific Standard Operating Procedures and/or Safe Work Practices to ensure compliance to corporate Health & Safety Standards. These SOPs/SWPs must, at a minimum, be as stringent as Corporate Standards, while maintaining compliance with all applicable legislative bodies for the area work is performed in.

III. References

CFR 1926.20

REVISION DATE	REVIEW DATE	REVISION NUMBER	REVISION COMMENTS	AUTHOR
10JUN16	10JUN2017	1	Created the document	Bill Oswald
09/09/2016	09/09/2016	1.1	Logo Change from SCS to Strategic Construction Solutions	Bill Oswald

HSE MANUAL

SECTION # HS A009

Stop Work Authority Policy

Revision 1.1_09SEP2016

I. SCOPE

Strategic Construction Solutions is committed to providing a safe and healthy work environment for our employees. Strategic Construction Solutions purpose of this procedure is to ensure that all employees are given the responsibility and authority to stop work in progress when in their best judgment they consider this action necessary due to an observed at risk behavior or unsafe condition that could cause injury, illness, damage to property or the environment.

II. PROCEDURE

A. Reporting Unsafe Conditions:

1. Any time an employee feels that a HSE risk is not properly established and understood, they have the right and obligation to stop work. Notification should be made to the affected worker(s) and then to the supervisor or designee at the location where the activity or conditions exist.

B. Right to a Safe Workplace:

1. Any employee who reasonably believes that an activity or condition is unsafe is expected to stop work without fear of reprisal by management or coworkers and is entitled to have the safety concern addressed prior to participating in the work. It is management's responsibility to insure that the Company develops a culture where the employee can exercise their right to stop work at all times.

C. Stop Work Resolution:

1. No worksite activity will resume until the HSE risk issue has been addressed and resolved. Intervention and resolution will be coordinated through the appropriate supervisor. It is their responsibility to correct any issues that have resulted in an employee stopping work. The supervisor must involve the individuals who initiated the stop work in reaching mutual agreement on the resolution or proposed actions necessary, and resume work when safe to do so. Stop work interventions are documented and reviewed by management and accessed as to follow up, solutions, and improvement areas. It is important that follow-up is provided after an intervention has been initiated and closed to facilitate learning's and best practices to all employees.

III. TRAINING

Each employee will be orientated and trained in Stop Work Authority prior to initial job assignment. The Company shall insure that all employees understand the importance of the stop to work rule to help keep us safe and in a HSE risk free work environment. Training records will be retained to document and certify names of employees trained, date(s) of training, and subject of training.

REVISION DATE	REVIEW DATE	REVISION NUMBER	REVISION COMMENTS	AUTHOR
05/09/2016	05/09/2016	1	created document	Bill Oswald
09/09/2016	09/09/2016	1.1	Logo Change from SCS to Strategic Construction Solutions	Bill Oswald

STRATEGIC
CONSTRUCTION SOLUTIONS

HSE MANUAL

SECTION #HS A010

Subcontractor Management Policy

Revision 4.1_09SEP2016

I. SCOPE

1. Strategic Construction Solutions is committed to providing a safe and healthy work environment for our employees and subcontractors working for Strategic Construction Solutions.
2. The purpose of this program is to ensure that Strategic Construction Solutions continues to improve subcontractor health, safety and environmental performance and to establish a standard for pre-qualification, evaluation/selection and development of our subcontractors. This policy applies to all subcontractors and all Strategic Construction Solutions locations.

II. GENERAL POLICY

1. All Strategic Construction Solutions subcontractors are to be managed in accordance with this program. The use of subcontractors must be pre-approved by Strategic Construction Solutions. All subcontractors will be categorized by size and type of Contractor as follows:
    a. Small or individual subcontractor is where one or two persons work as a subcontractor performing work for Strategic Construction Solutions on client sites. Note: Small contractors will not be required to complete the
    b. Medium subcontractor is a company that has up to 10 employees that provide services to Strategic Construction Solutions on client's site.
    c. Large subcontractor is a company that has more than 10 employees that provide services to Strategic Construction Solutions on client's site.
2. Approval requirements include:
    a. A formal safety review of the medium and large subcontractor's safety process by Strategic Construction Solutions safety department.
    b. The scope of the review will be commensurate with the hazards and risk exposure.
    c. All size Subcontractor will be oriented to the safety policies, expectations and requirements of Strategic Construction Solutions (Attachment 2)
    d. The subcontractor agrees to abide by our Drug and Alcohol policy and onsite safety rules throughout the duration of the work.
3. Any subcontractor that has a 'Non-Approved' safety status will not be used on any Strategic Construction Solutions site.

III. PROCEDURES

1. **Pre-Qualification of Subcontractors:** Medium and large subcontractors will be pre-qualified by reviewing their safety programs, safety training documents and safety statistics. Submitted through the Strategic Construction Solutions Prequalification form. (Attachment 1)
2. **Prequalification Evaluation of Safety Metrics**: Acceptable safety metrics score will be used as criteria for prequalifying and selecting subcontractors. The safety metrics and scoring will consider:

Evaluation items	Grading Criteria	Point Available
1) Completion of Strategic Construction Solutions Prequalification form (PQF)	Yes No	10 0
2) Experience Modifier Rate (EMR)	Less than .98 .99 - 1.05 1.06 or Greater	15 10 5
3) Safety stat review OSHA & MSHA - Total Injury Incident Rate (TRIR)	.50 or less .51 – 1.00 1.01 – 2.00 2.01 or Greater	15 12 10 5
4) MSHA or OSHA Citations given?	Yes No	5 10
5) Any work related fatalities in the last three years?	Yes No	5 10
6) Does the training criterion match the type of work being performed?	Yes No	10 0
7) Were the requested documents provided with the PQF?	Yes No	10 0
8) Do the OSHA 300 and 300A logs match the information provided on the PQF?	Yes No	10 0
9) Does the Certificate of Insurance (COI) match Strategic Construction Solutions requirements? (Compared to sample COI)	Yes No	10 0

IV. EVALUATION RATING AND ACCEPTANCE

1. The subcontractor rating system will have five designations:

Grade	Criteria	Additional requirements
A	Equal to or Greater than 90 points	No Restrictions or additional requirements
B	Between 85 and 89 points	Mitigation plan must be documented and approved by Strategic Construction Solutions Safety Department.
C	Between 81 and 84 points	Mitigation plan must be documented and approved Strategic Construction Solutions Safety Department; management approval in writing.
D	Between 71 and 80 points	Mandatory commitment meeting with senior subcontractor management present; mitigation plan documented and approved by Strategic Construction Solutions Safety Department; management approval in writing; trained subcontractor safety personnel on site during work regardless of number of workers.
F	Less than 70 points	Not to be used

2. Once each subcontractor has been evaluated and scored, Strategic Construction Solutions safety will provide management the scores/ranking. This list will reside on the internal web site The Well in the safety page.
3. Strategic Construction Solutions reserves the right to change a subcontractor's status to 'Non-Approved' if the subcontractor shows insufficient progress towards accepted mitigation plan or other agreed upon criteria.

V. SUBCONTRACTOR INVOLVEMENT

1. Contractors are required to follow or implement the work practices and systems described below while performing work at Strategic Construction Solutions worksites:
    a. Attend a safety orientation, pre-job meeting or kick-off meeting provided by Strategic Construction Solutions prior to any work beginning
    b. Monitor employees for substance abuse and report nonconformities to Strategic Construction Solutions
    c. Ensure personnel have the required training and competency for their work
    d. Participate in Strategic Construction Solutions tailgate safety meetings, job safety analysis or hazard assessments and on the job safety inspections
    e. Perform a pre-job safety inspection that includes equipment
    f. Report all injuries, spills, property damage incidents and near misses
    g. Comply with onsite and Owner/Client safety rules
    h. Implement Strategic Construction Solutions's safety practices and processes as applicable
    i. Clean up and restore the worksite after the job is over
    j. Ensure compliance with regulations at all times
    k. Post-job safety performance reviews shall be conducted for subcontractors

REVISION DATE	REVIEW DATE	REVISION NUMBER	REVISION COMMENTS	AUTHOR
18JUL2016	18JUL2017	1	Created document	Bill Oswald
22JUL2016	22JUL2017	2	Edits/formatting	K Rodriguez
09/09/2016	09/09/2016	4.1	Logo Change from SCS to Strategic Construction Solutions	Bill Oswald

Attachment 1

STRATEGIC CONSTRUCTION SOLUTIONS PREQUALIFICATION FORM (PQF)

Section 1 GENERAL INFORMATION		
Company Name:	Telephone:	
Street Address:	Mailing Address:	
Contact Person:	Email:	
Telephone:		
Insurance Contact :		
Title:	Telephone:	Fax:
Insurance Carrier(s):		
Name	Type of Coverage	Telephone
Are you self-insured for Workers Compensation Insurance? **Yes** ☐ **No** ☐		
PQF Completed by:	Title:	Date:
Telephone:	Email:	

Section 2 ORGANIZATION
Form of Business: Sole Owner ☐ Partnership ☐ Corporation ☐
Describe Services Performed: ☐ Construction ☐ Construction Design ☐ Original Equipment Manufacturer/Installer ☐ Maintenance ☐ Specialty Maintenance ☐ Manpower and Resources ☐ Original Equipment Manufacturer and Maintenance ☐ Service Work (e.g., janitorial, clerical, etc.) ☐ Turnaround ☐ Engineering ☐ Other: _____ Describe in detail the work activities performed by your company. _____

Section 3
HEALTH & SAFETY PERFORMANCE

Workers Compensation Experience Modification Rate (EMR) Data:

EMR is: Check appropriate box	EMR for last three (3) years:
☐ Interstate Rate ☐ Intrastate Rate ☐ Monopolistic State Rate ☐ Dual Rate	Year: EMR: Year: EMR: Year: EMR:
State of Origin:	*EMR Anniversary Date:*
North American Industrial Classification System (NAICS):	

Injury and Illness Data:

Total company employee hours worked last three (3) years (excluding subcontractors)	Hours / Year	Year:	Year:	Year:
	OSHA			
	MSHA			
	TOTAL			

Provide data (excluding subcontractor) using your OSHA 300 Forms from the past three (3) years:

OSHA	Year:		Year:		Year:	
	No.	**Rate**	**No.**	**Rate**	**No.**	**Rate**
1. Fatalities (Column G, OSHA 300 Log) *Rate = Number of Fatalities x 200,000 ÷ Total Employee Hours*						
2. Other Injury & illness cases Medical Treatment Only (Column J, OSHA 300 Log). Rate = Restricted Cases x 200,000 ÷ Total Employee Hours						
3. Injury & illness cases involving job transfers or work restrictions (Column I, OSHA 300 Log). *Rate = Restricted Cases x 200,000 ÷ Total Employee Hours*						
4. Injury and illness cases involving days away from work (Column H, OSHA 300 Log). *Rate = Lost Work Cases x 200,000 ÷ Total Employee Hours*						
5. Total OSHA Recordable Injury and Illness Rate (Sum of M 1-6, OSHA 300 Log) *Rate = Total Injuries and Illnesses x 200,000 ÷ Total Employee Hours*						

Provide data (excluding subcontractor) using your MSHA reports from the past three (3) years:

MSHA	Year:		Year:		Year:	
	No.	**Rate**	**No.**	**Rate**	**No.**	**Rate**
1. Fatalities *Rate = Number of Fatalities x 200,000 ÷ Total Employee Hours*						
2. Medical Treatment Only *Rate = Number of Cases x 200,000 ÷ Total Employee Hours*						
3. Injury & illness cases restricted work activity *Rate = Number of Cases x 200,000 ÷ Total Employee Hours*						
4. Injury & illness cases with days away *Rate = = Number of Cases x 200,000 ÷ Total Employee Hours*						
5. Total OSHA Recordable Injury and Illness *Rate = Total Injuries and Illnesses x 200,000 ÷ Total Employee Hours*						

Have you received any regulatory (EPA, MSHA, OSHA, etc.), civil or criminal, citations in the last three (3) years?

Yes ☐ **No** ☐ **If yes, please attach an explanation of citation.**

Section 4 ENVIRONMENTAL, HEALTH & SAFETY MANAGEMENT	
Name of highest ranking Health & Safety professional in the company:	
Name:	**Title:**
Telephone:	**Email:**
This person reports to:	**Title:**
Do you have or provide:	
Full time Safety/Health Director	**Yes** ☐ **No** ☐
Full time Site Safety/Health Supervisor	**Yes** ☐ **No** ☐
Full time Job Safety/Health Coordinator	**Yes** ☐ **No** ☐
Do you have or provide:	
Safety/Health incentive program	**Yes** ☐ **No** ☐
Company paid safety/health training	**Yes** ☐ **No** ☐

Section 5 HEALTH & SAFETY PROGRAMS/PROCEDURES	
Do you have a written Health & Safety Program?	**Yes** ☐ **No** ☐
Does the program address the following key elements?	
Management commitment and expectations	**Yes** ☐ **No** ☐
Employee participation	**Yes** ☐ **No** ☐
Accountabilities and responsibilities for managers, supervisors, and employees	**Yes** ☐ **No** ☐
Resources for meeting safety, health & environmental requirements	**Yes** ☐ **No** ☐
Periodic safety and health performance appraisals for all employees	**Yes** ☐ **No** ☐
Safety & Health Recognition Program	**Yes** ☐ **No** ☐
Hazard recognition and control	**Yes** ☐ **No** ☐
Does the program satisfy your responsibility under the law for:	
Ensuring your employees follow the safety rules of the job site and client?	**Yes** ☐ **No** ☐
Advising Strategic Construction Solutions of any unique hazards presented by the contractor's work, and of any hazards found by the contractor?	**Yes** ☐ **No** ☐
Does the program include work practices and procedures for the following programs:	
Equipment Lockout, Tagout (LOTO)	**Yes** ☐ **No** ☐ **N/A** ☐
Confined Space Entry	**Yes** ☐ **No** ☐ **N/A** ☐
Injury & Illness Recording	**Yes** ☐ **No** ☐ **N/A** ☐
Fall Protection	**Yes** ☐ **No** ☐ **N/A** ☐
Personal Protection Equipment	**Yes** ☐ **No** ☐ **N/A** ☐
Portable Electrical /Power Tools	**Yes** ☐ **No** ☐ **N/A** ☐
Vehicle Safety	**Yes** ☐ **No** ☐ **N/A** ☐
Compressed Gas Cylinders	**Yes** ☐ **No** ☐ **N/A** ☐
Electrical Equipment Grounding Assurance	**Yes** ☐ **No** ☐ **N/A** ☐
Powered Industrial Vehicles (Cranes, Forklift, JLGs, etc.)	**Yes** ☐ **No** ☐ **N/A** ☐
Housekeeping	**Yes** ☐ **No** ☐ **N/A** ☐
Accident/Incident Reporting	**Yes** ☐ **No** ☐ **N/A** ☐
Unsafe Condition Reporting	**Yes** ☐ **No** ☐ **N/A** ☐

Emergency Preparedness, including Evacuation Plan	Yes ☐ No ☐ N/A ☐
Waste Disposal/Waste Minimization/Spill Prevention	Yes ☐ No ☐ N/A ☐
Back Injury Prevention	Yes ☐ No ☐ N/A ☐
HAZWOPER Training	Yes ☐ No ☐ N/A ☐
Heat Stress Prevention	Yes ☐ No ☐ N/A ☐
Scaffold Building/Scaffold Use	Yes ☐ No ☐ N/A ☐
General NDT & Radiography	Yes ☐ No ☐ N/A ☐
Do you have written programs for the following:	
Hearing Conservation	Yes ☐ No ☐ N/A ☐
Respiratory Protection	Yes ☐ No ☐ N/A ☐
If applicable , have employees been:	
Trained	Yes ☐ No ☐ N/A ☐
Fit Tested	Yes ☐ No ☐ N/A ☐
Medically approved	Yes ☐ No ☐ N/A ☐
Hazard Communication	Yes ☐ No ☐ N/A ☐
Have employees been trained?	Yes ☐ No ☐ N/A ☐
Do you have a substance abuse program?	Yes ☐ No ☐
If yes, does it include the following?	Yes ☐ No ☐
• Pre-placement Testing	Yes ☐ No ☐
• Random Testing	Yes ☐ No ☐
• Testing for Cause	Yes ☐ No ☐
• DOT Testing	Yes ☐ No ☐
• Post Incident Testing	Yes ☐ No ☐
• Annual Testing	Yes ☐ No ☐
Do you perform background checks covering the previous seven (7) years?	Yes ☐ No ☐
Do your employees read, write and understand English such that they can perform their job tasks safely without an interpreter?	Yes ☐ No ☐
If no, provide a description of your plan to assure that they can safely perform their jobs.	
Medical	
Do you conduct medical examinations for:	
• Pre-placement	Yes ☐ No ☐ N/A ☐
• Pre-placement, job capability	Yes ☐ No ☐ N/A ☐
• Hearing function (Audiograms)	Yes ☐ No ☐ N/A ☐
• Pulmonary	Yes ☐ No ☐ N/A ☐
• Respiratory	Yes ☐ No ☐ N/A ☐
Describe how you will provide first aid and other medical services for your employees while on-site. Please specify who will provide these services.	
Do you have personnel trained to perform First Aid & CPR?	Yes ☐ No ☐

Do you hold site safety, health and environmental meeting for:	
• Field Supervisors	Yes ☐ No ☐
Frequency	D ☐ W ☐ M ☐ As needed ☐
• Employees	Yes ☐ No ☐
Frequency	D ☐ W ☐ M ☐ As needed ☐
• New Hires	Yes ☐ No ☐
Frequency	D ☐ W ☐ M ☐ As needed ☐
• Subcontractors	Yes ☐ No ☐
Frequency	D ☐ W ☐ M ☐ As needed ☐
Are the safety, health and environmental meetings documented?	Yes ☐ No ☐
Personal Protection Equipment (PPE)	
Is applicable PPE provided to employees?	Yes ☐ No ☐
Do you have a program to ensure that PPE is inspected and maintained?	Yes ☐ No ☐
Do you have a corrective action process for addressing individual safety and health performance deficiencies?	Yes ☐ No ☐
Equipment and Materials:	
Do you have a system for establishing applicable health, safety, and environmental specifications for acquisition of materials and equipment?	Yes ☐ No ☐ N/A ☐
Do you conduct inspections on operating equipment (e.g., cranes, forklifts, JLGs) in compliance with regulatory requirements?	Yes ☐ No ☐ N/A ☐
Do you maintain operating equipment in compliance with regulatory requirements?	Yes ☐ No ☐ N/A ☐
Do you maintain the applicable inspection and maintenance certification records for operating equipment?	Yes ☐ No ☐ N/A ☐
Subcontractors	
Do you use subcontractors? If no, please skip this section.	Yes ☐ No ☐
Do you use safety, health and environmental performance criteria in selection of subcontractors?	Yes ☐ No ☐ N/A ☐
Do you evaluate the ability of subcontractors to comply with applicable safety, health, and environmental requirements as part of the selection process?	Yes ☐ No ☐ N/A ☐
Do your subcontractors have a written safety, health and environmental program?	Yes ☐ No ☐ N/A ☐
Inspections and Audits	
Do you conduct Safety, Health & Environmental inspections?	Yes ☐ No ☐
Do you conduct Safety, Health & Environmental program audits?	Yes ☐ No ☐
Are corrections of deficiencies documented?	Yes ☐ No ☐

Section 6 SAFETY, HEALTH & ENVIRONMENTAL TRAINING	
Safety, Health & Environmental Training	
Do you know the regulatory safety, health and environmental training requirements for your employees?	Yes ☐ No ☐
Have your employees received the required safety, health and environmental training and retraining and is it documented?	Yes ☐ No ☐
Do you have a specific safety, health and environmental training program for supervisors?	Yes ☐ No ☐
Are all employees trained in the work practices needed to safely perform his/her job?	Yes ☐ No ☐
Is each employee instructed in the known potential of fire, explosion, or toxic release hazards related to his/her job, the process and the applicable provisions of the emergency action plan?	Yes ☐ No ☐

Section 7
INFORMATION/DOCUMENT SUBMITTAL

Please provide copies of checked items with the completed PQF:

√ EMR documentation from your insurance carrier	☐ Safety, Health & Environmental Training Schedule (Sample)
√ Insurance Certificate(s)	☐ Safety, Health & Environmental Training for Supervisors (Outline)
√ OSHA 300 Logs (Past 3 Years)	☐ Copy of Contractor's License
☐ Safety, Health & Environmental Program (outline)	☐ Organization Chart
☐ Safety, Health & Environmental Incentive Program	☐ List of major equipment (e.g., cranes, JLGs, Forklifts) your company has available for work at this facility
☐ Substance Abuse Program (Include substances tested & levels)	☐ Equipment - Lockout and Tagout Training (LOTO)
☐ Hazard Communication Program	☐ Confined Space Entry Procedure
☐ Respiratory Protection Program	☐ Fall Protection, Scaffold Use, Scaffold Building
☐ Housekeeping Policy	☐ Personal Protection Equipment Program
☐ Accident/Incident Investigation Procedure	☐ Portable Electric/Power Equipment
☐ Unsafe Condition Reporting Procedure	☐ Vehicle Safety
☐ Safety, Health & Environmental Inspection Form	☐ Compressed Gas Cylinders
☐ Safety, Health &Environmental Orientation (outline)	☐ Electrical Equipment Grounding Assurance
☐ Safety, Health & Environmental Training Program (outline)	☐ Emergency Preparedness including evacuation plan
☐ Example of Employee Safety, Health & Environmental Training Records	☐ Waste Disposal
☐ Workforce Development Policies	☐ Back Injury Prevention
☐ NDT &Radiography Program	☐ Heat Stress Prevention

Please provide the name and title of the Company Officer responsible for assuring the accuracy of this document:

Name: _____ Title: _____

(Please Print)

_____ _____

(Signature) (Date)

EVALUATION -- Strategic Construction Solutions USE ONLY--	
Score	
Criteria	Score
1) Completion of Strategic Construction Solutions Prequalification form (PQF)	
2) Experience Modifier Rate (EMR)	
3) Safety stat review OSHA & MSHA - Total Injury Incident Rate (TRIR)	
4) MSHA or OSHA citations given?	
5) Any work related fatalities in the last three (3) years?	
6) Does the training criterion match the type of work being performed?	
7) Were the requested documents provided with the PQF?	
8) Do the OSHA 300 and 300A logs match the information provided on the PQF?	
9) Does the Certificate of Insurance (COI) match Strategic Construction Solutions requirements? (Compared to sample COI)	
Total Score / Grade	

Strategic Construction Solutions Approvals (if required by score)		
Department	**Signature**	**Date**
H&S Director		
Vice President or Higher		
Legal		
Human Resources		
Other as required		

Attachment 2

Strategic Construction Solutions Subcontractor's Safety Expectations

FORWARD

Strategic Construction Solutions is proud of its commitment to providing a safe workplace and to conducting business in a manner that protects the environment and property of others. Thank you for your commitment to these principles and to providing safe and efficient services to Strategic Construction Solutions.

This handbook is provided solely to communicate Strategic Construction Solutions general Health and Safety expectations to contractors in a consolidated fashion. The information in this handbook is advisory in nature and does not represent nor replace each contractor's health and safety policies and procedures. This handbook does not replace or limit health and safety requirements imposed by Federal, State, or local laws or to preempt standard industry practice.

Regardless of any operational urgency or importance, work at Strategic Construction Solutions sites should not be conducted at the expense of safety, the environment, or the health of workers or public. Contractors must take adequate measures to protect all persons and property, and to comply with all applicable Federal, State, & local regulations. All contractors must train, supervise, and direct their employees to work in a safe and environmentally conscious manner.

All contractors should review this Handbook with their respective employees, consultants, agents and subcontractors, and acknowledge their understanding of the expectations contained within by signing the Contractor Acknowledgement Form attached at end of this document. The contractor should follow their own safety program and examine the related standards and regulations applicable to their services contained in this handbook.

Concerns regarding violations or safety issues can be confidentially reported directly to the Director of Safety at safety@atwell-group.com.

I. GENERAL REQUIREMENTS

1. **Contractor Responsibilities:** All incidents are preventable. Safety and compliance shall not be compromised for convenience, production or expedience.

    a. Do it safely or don't do it at all

    b. There is always time to do it right

    c. When in doubt, find out

    Always:

    a. Operate in a safe and controlled manner

    b. Follow safe work practices and procedures

    c. Ensure safety devices are in place and working

    d. Use tools and equipment only for the purpose for which they were designed

    e. Meet or exceed Strategic Construction Solutions requirements

    f. Comply with all applicable rules and regulations

    g. Follow all written procedures for all situations

    Medium and Large contract will be required to provide a Safe Work Plan (SWP) for work activities they are engaged in while on site. The SWP must approve by Strategic Construction Solutions project manager prior to work starting on site.

    All contractor personnel arriving at the work site for the first time must receive a site-specific safety orientation delivered by the customer for whom they will provide services. This orientation must contain information related to emergency evacuation and response procedures.

    Each contractor is responsible for the safety of all its workers and for ensuring that their personnel perform their day-to-day work in a safe manner. Contractor personnel must be familiar with and abide by:

    a. Strategic Construction Solutions safety practices as contained in this handbook

    b. Safety regulations posted in the workplace

    c. Written and verbal instructions to perform their job safely as outlined in Safe Work Plan(SWP), Job Safety Analyses (JSA), Task Hazard Analysis (THA) and operating procedures

    d. All applicable Federal, State and local laws and regulations

    e. Emergency response procedures for this work site

    Every contractor shall:

    a. Conduct its operations in a manner that presents no hazard to the workforce, property or the environment

    b. Designate a safety representative for each work location to be responsible for all safety-related activities and to periodically visit the location

    c. Bring any observed, unsafe or hazardous conditions to the attention on the Strategic Construction Solutions representative

d. Exercise all care necessary to protect and preserve the environment and wildlife at any location where work is performed and comply with all applicable Federal, State and local laws and regulations

e. Have, and abide by, written programs and procedures, as required or needed, including but not limited to:

- A motor vehicle safety program
- A federally compliant drug and alcohol testing program
- Personal Protective Equipment (PPE) use at all times while at the work site

2. **Incident Reporting:** A contractor must immediately report any incident that occurs at an Strategic Construction Solutions work site, including near-miss events, to the Strategic Construction Solutions representative, no matter how small. Contractors shall report all incidents (injury/illness, environmental release, vehicle crashes, property/equipment damage, and near misses) including first aid and repetitive stress injuries regardless of severity or impact.

   The initial incident report may be verbal and follow-up with a written incident report. Absent extenuating circumstances, the initial report shall be made within two (2) hours of the occurrence. Failure to report an incident within the two (2) hour time period may result in disciplinary action against the contractor.

   Incidents will be investigated to determine their root cause. Contractor personnel may be required to participate in or conduct root cause analysis (RCA). Data collection and the investigation will begin as soon as practical.

   Contractors should instruct workers to recognize the signs of contamination:

   a. Odors

   b. Soil discoloration

   c. Dead vegetation, applicable to the services they provide

   The contractor is responsible for the cleanup of any environmental release relating to its activities; however, Strategic Construction Solutions requirements for levels of contamination following cleanup must be met if the spill was on an Strategic Construction Solutions site. Spills of any size must be reported and cleaned up immediately and both the spill and the clean-up must be documented.

3. **Stop Work:** Without fear of reprimand, reprisal, or disciplinary action, every contract employee working at any Strategic Construction Solutions job site or facility has the unquestionable right and responsibility to refuse to do any work and/or stop any job in which the employee thinks that all hazards of the job haven't been properly identified and addressed prior to the start of the job; or if a hazardous situation develops during the course of the job; or if the employee feels that he/she doesn't fully understand the job instructions or safety guidelines.

   This authority also extends to stopping any personnel they think may be in jeopardy due to developing circumstances, or whom they observe using improper or dangerous tools or work procedures. Strategic Construction Solutions will instill and promote a safety culture where every employee and contractor knows and understands their rights and obligations under the Stop Work Authority policy. No job will be started, or resumed after stoppage for safety concerns, until all safety issues and concerns have been addressed and corrected and every person on the job site fully understands their individual and joint responsibilities for the safe completion of the project. The following sequence shall be followed when a stop work intervention is initiated:

a. Stop - announce to all affected persons your intent to delay or stop the job

b. Notify - notify the Strategic Construction Solutions representative, job supervisor or facility manger

c. Correct - recommend and assist with corrective measures

d. Document -job supervisor will ensure that all stop work interventions are properly documented listing reason for stoppage and all corrective measures implemented.

e. Follow-Up Safety Meeting - it is important to ensure that the safety concerns have been addressed and corrected to the satisfaction of all concerned before work is resumed.

f. Resume - start or resume the job

g. All stop work reports shall be forwarded to the Strategic Construction Solutions representative, local office and reviewed by management so that corrective actions can be implemented prior to the start of future jobs, thereby eliminating the need for additional work stoppages.

4. **Reports:** All contractors will be required to submit reports on a weekly, Monthly and project completion basis. The reports needing submittal will be assigned and determined by the Strategic Construction Solutions contact and communicated to all contractors.

5. **Training:** Contractors are required to ensure their employees are trained and understand to follow proper work methods and to meet regulatory requirements and Strategic Construction Solutions procedures.

6. **Housekeeping:** Good housekeeping is an indication of the focus on safety. As a practice:

   a. Keep tools, equipment, facilities and the work area clean and orderly

   b. Keep and consume food or beverages only in designated areas

   c. Dispose of waste in compliance with Federal, State and local regulations

   d. Keep access clear and free of obstructions. Work areas, walkways and stairways shall be kept free of slipping and tripping hazards

   e. Clean up spills immediately. Use barricades to isolate the area if immediate clean-up is not possible.

7. **First Aid and CPR Requirements:** Medium and large contractors must have certified first aid resources available at all Strategic Construction Solutions jobsites during all aspects of the work. Contractor employees trained and certified in first aid and CPR have the possibility of occupational exposure to potential infectious materials; therefore should also be trained in blood borne pathogens.

8. **Smoking:** Smoking is permitted in designated smoking areas only

9. **Alcohol, Drugs, Firearms and Weapons:** The use of illegal drugs and alcoholic beverages, and the misuse of prescription and over-the-counter medications on Strategic Construction Solutions sites are prohibited. Medium and large contractors shall develop, implement, maintain and enforce an alcohol, drug, and substance abuse screening policy consistent with this prohibition and applicable Federal, State, and local laws. Medium and Large contractors working on an Strategic Construction Solutions site that are directly involved with construction, pipeline, survey or environmental activities must be enrolled in a random drug and alcohol testing program.

   Contract workers at Strategic Construction Solutions sites shall notify their supervisors when they are taking medication (prescription or non-prescription) which may impair their judgment

or work performance. Any prescription drug brought on the site must be in the container in which it was dispensed.

No unauthorized alcoholic beverages, illegal drugs or other controlled substances are allowed on company property. Any use of alcoholic beverages, illegal drugs or other controlled substances that cause or contribute to unacceptable job performance or unusual behavior is prohibited.

If a worker is affected by alcohol or drugs, they are not permitted to remain on any Strategic Construction Solutions site. The contractor must have and enforce appropriate policies and procedures for its employees to ensure that such expectations are met.

All contractors are required to have a drug and alcohol testing program that includes the following types of testing:

a. Pre-employment
b. Random testing of employees working in safety-sensitive functions
c. Reasonable suspicion
d. Post-incident testing
e. Testing as part of a follow-up to substance abuse counseling or rehabilitation

Firearms and other weapons are not permitted at any Strategic Construction Solutions sites. Pocket knives are acceptable in the workplace. Fixed blade knives are not acceptable under the weapons prohibition.

10. **DOT Drug Testing Requirements:** All positions involving operations, maintenance or emergency response functions required by DOT regulations are deemed by the DOT as safety-sensitive.

    All personnel working in safety-sensitive functions are subject to Section 199 of the DOT drug testing regulations which includes random drug testing, and are required to maintain a blood alcohol concentration of 0.00% at all times while on duty.

    Random and for-suspicion drug testing may be requested in accordance with DOT regulations, contractor's policy or Strategic Construction Solutions policy.

11. **Security:** All contractor vehicles and equipment located on Strategic Construction Solutions property or leases are subject to unannounced searches and seizures for illegal drugs, alcoholic beverages and/or firearms.

    Security measures have been implemented at every work location. All contract workers must follow the site specific measures.

II. HAZARD IDENTIFICATION

1. All contractors must be aware of occupational health hazards associated with services being provided at the site (i.e. chemicals, heat, and etc.). The contractor should evaluate the risks, controls, and perform monitoring, if deemed appropriate or if required by regulation. These hazards should be conveyed to affected personnel during the pre-job safety meeting with the contractor.

III. PERSONAL PROTECTIVE EQUIPMENT

1. **Personal protective equipment (PPE)** is an essential element in protecting the workforce from workplace hazards and on-the-job injuries. Contract workers shall comply with all posted signs and OSHA requirements regarding PPE.

   Contractors must assess the hazards present at each job site based on the task performed and ensure its employees wear the appropriate PPE to protect themselves.

   Contractors must ensure all PPE supplied and required for performance of the work is in good condition and is maintained in accordance with manufacturer's specifications. It is the responsibility of the contractor to ensure their employees are adequately trained in the proper uses, limitations, and maintenance of the PPE utilized.

2. All members of the workforce working in a construction zone or a safety sensitive areas must use the following PPE when working in areas other than offices and parking areas:

   a. Hard hats
   b. Safety footwear
   c. Safety glasses with side shields
   d. High visible vest or clothing

3. **Fire-resistant clothing:** FRC meeting the appropriate NFPA standards for the work being performed must be worn at all times when on Strategic Construction Solutions sites where hydrocarbons are present or an arc flash danger is present, including; but not limited to:

   a. At any location where the possibility of a natural gas or other flammable vapor release creating the potential for a flash fire exists
   b. On any location or facility where a PPE hazard assessment has determined that FRC is a requirement
   c. During well servicing, gas compression, pipeline, and production related operations
   d. When any electrical work is being performed where FRC is required under the NFPA 70E Standard (i.e. arc flash hazards);

   FRC must cover the entire body from neck to ankle, including long sleeves and must be worn as the outermost garment. Contractors must provide and maintain FR garments according to the National Fire Protection Association 2112 standard and or NFPA 70E. This clothing must also meet the requirements for the Hazard Risk Category for the workers specific function.

   It is recommended that undergarments worn with FRC are made from fabric that does not melt (no polyester or synthetic fabrics which may melt against the skin).

4. **Head:** Hard hats are required at all work locations and along the right-of-way, except in offices or when riding in an enclosed vehicle. Maintain hard hats in good condition. Hard hats must be nonmetallic (nonconductive or dielectric) and meet the Z89.1 Class A and B requirements of American National Standards Institute (ANSI).

5. **Eyes and Face:** All safety glasses and face shields used at Strategic Construction Solutions locations must meet ANSI Z87.1 standards.

   When debris of splash hazards is possible or present, wear face shields as an additional layer of protection with either safety glasses with side shields or goggles.

   a. Wear safety glasses with side shields to protect against eye hazards caused by particulates

b. Wear splash-proof chemical goggles when handling potentially hazardous chemicals or liquids that may splash or spray, or other operation where your eyes may be exposed to potentially hazardous chemicals.

Certain electrical tasks also may require use of a face shield or arc-rated hood.

6. **Hearing:** Contractor shall require its employees to wear approved hearing protection if there is a risk of exposure to noise greater than 85 decibels.

7. **Respiration Protection:** Respiratory protection should be used only by personnel trained in its use, care and limitations. Contractor is responsible for ensuring that its workers have been trained, medically qualified and fit tested as required by OSHA. Contractor must enforce a 'no facial hair' policy for workers who may be required to wear respiratory protection equipment. If their workers use respiratory protection, the contractor should have a written respiratory protection plan.

8. **Hand:** Hand injuries are the most common injury at work sites. Contractors will provide, and the workers will use, appropriate hand protection when performing tasks that expose fingers and hands to objects, materials or situations that could cause cuts, scrapes, bruises or burns (including chemical burns).

9. **Foot:** All workers on Strategic Construction Solutions sites (with the exception of office facilities) must wear appropriate footwear with the following features:

   a. Protective internal toe cap

   b. Impact-resistant toe cap

   c. Compression-resistant toe area

   d. Ankle coverage

   e. Notched heel that prevents slippage when climbing ladders

   f. Oil-resistant soles

IV. SAFE WORK PRACTICES

1. **JSA and Tailgate Safety Meetings:** At each Strategic Construction Solutions site, medium and large contractors will appoint a competent worker to be responsible for Health & Safety coordination of the contractor's anticipated tasks. Medium and large contractors should appoint this worker based on the worker's experience and knowledge in both field operations and EHS matters. In order to ensure all affected individuals are made aware of jobsite hazards and how to eliminate and/or control them, Strategic Construction Solutions expects contractors to perform pre-job JSA/Tailgate safety meeting prior to performing task, which meet the criteria listed below.

   A JSA/Tailgate Safety Meeting Form should be completed by the contractor and an Strategic Construction Solutions representative and reviewed with all affected personnel prior to starting work, which may expose three or more individuals to potential hazards on a job site.

   The JSA/Tailgate Safety Meeting should identify the following at a minimum:

   a. Identify any potential hazards related to performance of the work

   b. Eliminate or implement controls to address each potential hazard

   c. Identify proper Personal Protective Equipment (PPE} required for the task

d. Review the JSA/Tailgate Safety Meeting Form with all affected employees onsite and have individuals sign the meeting form

On sites where multiple contractors will be conducting concurrent operations, Strategic Construction Solutions expects each contractor to be familiar with the work to be performed by the other contractors on or around the job site. Strategic Construction Solutions expects the contractor directing and controlling the jobsite to ensure that no person(s) enter a hazardous area unless they are wearing the required PPE, reviewed the JSA/Tailgate Safety Meeting Form, and signed off in acknowledgement. Contractors providing services, which require multiple days in order to complete a job, should complete a new JSA/Tailgate Safety Meeting Form at the beginning of each shift change or day to cover the specific task and associated hazards with each phase of the job.

Jobs requiring contractors to utilize special permits such as those needed for Hot Work and/or Confined Space Entry should supersede the use of a JSA/ Tailgate Safety Meeting Form. Each of the specialized permits mentioned contain their own specific criteria for addressing the specific hazards associated with those tasks.

Once the job has been concluded, the signed JSA/Tailgate Safety Meeting Form should be submitted to the Strategic Construction Solutions representative, which requested the work order and filed with the job's associated paperwork.

Safe Work Permits

2. **Confined Space Entry (Non-permit and Permit required):** Medium and large contractor employees must be trained and certified prior to performing any type of confined space entry work at our sites. Contractors are encouraged to consider optional methods to complete work so as to eliminate the need for permit required confined space entry (i.e. declassification through elimination of potential hazards). Approval by an Strategic Construction Solutions representative must be obtained prior to performing any non-permit and permit required confined space entry work. Contractor should utilize their company Confined Space Entry Permit in order to complete the required task.

   Contractor Entry Team Training should consist of the following:

   a. Atmospheric Air Monitoring (i.e. Four Gas Detector- CO, 02, % LEL, H2S)
   b. Respiratory Protection (Permit Required Confined Space Entry Only)
   c. Confined Space Entry
   d. First-Aid and CPR
   e. Emergency Rescue (Permit Required Confined Space Entry Only)
   f. Site Specific Training

3. **Hot Work:** Only qualified workers may work in hot work areas.

   Contractors are required to utilize a Hot Work Permit process prior to conducting cutting, welding, grinding, or other similar spark/flame producing processes within areas which contain or may produce a potentially hazardous (flammable/combustible) environment.

   The following examples are areas where Strategic Construction Solutions requires contractors to utilize a permit prior to performing hot work. The list of examples below is not intended to be exhaustive, as hot work permits are not limited to the following areas:

   a. Within 50 ft. of operating production equipment or facilities
   b. Within 50 ft. of well servicing, drilling, or workover operations being conducted on a well location

c. During pipeline tie-in or replacement when flammable/combustible gases or vapors may be present

A permit remains in effect only for the duration of the work shift in which it is issued. Medium and large contractors shall utilize their company specific Hot Work/Safe Work process. Prior approval must be obtained from a Strategic Construction Solutions representative before permit required hot work commences on Strategic Construction Solutions sites.

Prior to starting work on jobs requiring ignition sources in hot work areas, the contractor must designate a 'Fire Watch'. The Fire Watch is to monitor for conditions that may cause a fire such as sparks or levels of flammable/combustible gases during permit required Hot Work operations {i.e. % LEL monitor), act as stand-by with fire extinguisher (Minimum 20lbs. ABC Type) during Hot Work operations, and conduct the final Hot Work sign-off inspection. The fire watch must thoroughly inspect all areas where sparks may have flown or traveled to need to be checked thoroughly to make sure that no fire hazard has been created or thoroughly wash down, if practical and observe the hot work area for a minimum of 30 minutes after hot work ceases to be certain no fire hazard is present.

Hot Work in confined spaces will only be permitted when the space can be suitably purged and ventilated to eliminate the possibility of a hazardous atmosphere developing at any time it is occupied. PERMIT-REQUIRED CONFINED SPACE ENTRY PROCEDURES WILL APPLY (Refer to Confined Space Entry Section).

4. **Excavation:** Any ground disturbance or excavation deeper than 15 inches must be conducted in accordance with all applicable OSHA standards. The use of an excavation or ground disturbance permit will be required. Contractor must request professional location of underground lines through the applicable state program (i.e. One Call, 811, or etc.) prior to any ground disturbance or excavation. Work should not commence until all underground lines have been identified and staked by an Authorized Utility representative, or other underground locating services.

   Medium and large contractor should ensure its workers have the appropriate level of training in ground disturbance activities prior to performing excavation work on Strategic Construction Solutions jobsites. At a minimum, one person who has a current Competent Person Certification for Excavation should remain in attendance during excavation activities.

   If any existing pipeline, or other utility line, is contacted, hit or ruptured during ground disturbance activities, the owner of the underground facility should be notified immediately.

5. **Trenching and Shoring:** Contractors must follow safe work practices for trenching and excavating activities. All excavations or trenches where persons may be working should be properly sloped or shored.

Hazardous Energy

6. **Electrical Safety:** Only workers who have received appropriate electrical training are permitted to work on electrical equipment or systems for Strategic Construction Solutions. Additional training and procedures must be provided to Strategic Construction Solutions prior to performing work on High voltage equipment or work in live sub stations.

   All portable electrical equipment used at Strategic Construction Solutions sites must conform to the National Electrical Code and all applicable OSHA and other related regulations. Installation of electrical systems or modifications to electrical systems (i.e. wiring) should be done under the supervision of a licensed electrician.

   The contractor should:

   a. Determine if the work area will require equipment rated for hazardous atmospheres

b. Ensure that workers near overhead lines know the voltage of the line and the safe approach distance

c. Abide by the current Electrical Code Regulations for the jurisdiction in which work is being performed. The contractor must be aware of, and to

d. Take precautions to prevent buildup of static electricity, which can cause sparks (i.e. bonding & grounding),

e. Address the presence of cathodic protection systems with the Strategic Construction Solutions representative when working with tanks or piping, if applicable.

7. **Lighting:** Use explosive-proof portable lights and flashlights which are approved for the specific work location.

8. **Extension Cords:** Extension cords are for temporary use only. If practical, arrange electrical devices to avoid the use of extension cords.

   Before using an extension cord, cover it with approved guards or tape to prevent tripping hazards.

   Use only extension cords which are:

   a. Approved and rated for the application

   b. Three-wire, grounded type

   c. Equipped with three-wire, grounded receptacles and plugs. Plugs must be explosion proof when working in hazardous locations.

   Do not use extension cords which are damaged or spliced. Remove damaged cords from service.

   Do not fasten an extension cord with staples or otherwise hang it in a way which could damage the outer jacket or insulation.

9. **Power Tools:** Use only portable electrical tools and equipment which are UL-listed, double-insulated tools or grounded through a third wire in their cords.

   Do not use electrical tools or equipment with damaged or inadequate insulation, defective cords, etc.

   Where explosion or fire is possible, use pneumatic (air-operated) power tools.

   If one or more electrical tools are to be used, ensure that the power sources have ground fault circuit interrupter (GFCI) protection in place

10. **Bonding/Grounding:** Exposed noncurrent-carrying metal parts of fixed electrical equipment, including motors, generators, frames, and tracks of electrically operated cranes, electrically driven machinery, etc., will be grounded.

    Portable equipment will be grounded by means of a ground rod (less than 5 OHMS resistance) or by bonding to the nearest grounded structure.

    Conductors used for bonding and grounding stationary and movable equipment will be of ample size to carry the anticipated current.

    When attaching bonding and grounding clamps or clips, a secure and positive metal-to-metal contact will be made. Such attachments will be made before closures are opened and material movements are started, and will not be broken until after material movements are stopped and closures are made.

11. **Lock-out/Tag-out:** Whenever machinery or equipment is shut down for servicing or repairs, the equipment will be locked out and tagged by trained authorized employees in accordance with OSHA's Control of Hazardous Energy standard. A site-specific lock-out/tag-out procedure will be determined by the contractor during an initial hazard assessment and conveyed to affected personnel during the pre-job safety meeting. Contract workers should only work under their own lock/tag and should always verify the machinery or equipment is in fact de-energized prior to commencing work. Once the work is complete the contractor performing the lock-out/tag-out is responsible for notifying affected personnel before removing their isolation devices and re-energizing the machinery or equipment.

12. **Depressurizing Production Equipment:** Contractors must obtain permission from an Strategic Construction Solutions representative prior to depressurizing Strategic Construction Solutions production related equipment (i.e. wells, pipelines, vessels, compressors, or other associated equipment) in order to determine if any site-specific procedures are in place and to identify any potential hazards. Hazards may include exposure to petroleum hydrocarbon liquids and gases, release of liquids and gases (toxic and/or flammable) to the environment, and fire.

Working and Walking Surfaces

13. **Elevated Working Surfaces:** All contractors will be required to train their employees on working at heights and provide documentation of training to Strategic Construction Solutions contact person. All work areas, walkways, and platforms elevated more than four (4) feet, whether permanent or temporary, must be safe, sturdy and enclosed by an approved guardrail (proper height, upper and intermediate rail).

    Where there is a hazard to the personnel working below the elevated work area, toe boards must be in place. All floor openings must have a securely installed covering or proper guard rail.

    Scaffolds or elevated platforms must be constructed, maintained, and used in accordance Federal regulations.

    When working overhead, the contractor should have a competent spotter and the area roped off or other equivalent measures taken to protect workers on the site. Signs reading "Danger - Overhead Work" or "Hard Hat Area" should be conspicuously posted.

14. **Fall Protection:** All workers working at heights of four (4) feet or greater must use a fall protection systems. All workers must receive training prior to using fall arrest systems.

    Full safety harnesses and lifelines, or other acceptable fall arrest systems, should be supplied by the contractor and worn by all workers when working at heights where falling hazards are present and workers are not protected by guard rails as required by 29 CFR 1910 Subpart D. All workers should be properly trained in the use and maintenance of fall protection devices. Where man baskets are required, the contractor should ensure that a professional engineer has certified this equipment. Workers in man baskets should be secured in accordance with OSHA 29 CFR1910 Subpart F.

15. **Scaffolding and use:** Contractors who are required to use scaffolding to complete any work activities must comply with OSHA's Scaffolding requirements found in 29 CFR 1926.451**.** All scaffolding types must be preapproved by Strategic Construction Solutions contact prior to being used on the jobsite. Scaffolding will be made up of industrial grade scaffolding system. Each employee must be trained in the safe use of scaffolding prior to working with or on any scaffolding erected for work activities.

Surveying near Traffic

16. **Required 'Free Space':** Maintain at least six (6) feet of space between moving traffic and your work area. This includes work on shoulders as well as on the traveled way. Survey at the maximum space possible between moving traffic and your work area.
17. **Face Traffic:** Whenever feasible, each employee must face moving traffic at all times. If it is not possible to face traffic, a lookout should be used.
18. **Move Deliberately:** Do not make sudden movements that might confuse a motorist and cause an accident.
19. **Signal Cautiously:** Whenever feasible, use radio communication. Carefully and deliberately use surveying hand signals so they will not startle or confuse motorists or be mistaken for a flagger's direction.
20. **Avoid Interrupting Traffic Flow:** Minimize crossing traffic lanes and never attempt to run across traffic lanes.
21. **Physical Barriers:** Whenever feasible, place a barrier vehicle or a shadow vehicle between moving traffic and workers.
22. **Distractions to Motorists:** Minimize working near moving traffic, especially on high-speed roads, when the motorists' attention may be distracted by other ongoing activities, such as vehicular accidents, maintenance activities, and construction operations; or distracting objects on or along the highway. Do not work along streets or highways within 2000 feet of such activities or objects.

Hazardous Materials

23. **Hazard Communication:** All workers who work with chemicals or other hazardous materials must be trained in HazCom procedures and protections. Contractor will develop, implement, and follow a program which minimizes the risk of spill, illness, or injury regarding their employee's usage of hazardous chemicals on Strategic Construction Solutions worksites. Contractors should ensure their workers are aware of the program, the location and interpretation of the SDS, and the location and use of the required PPE.
24. **Labeling and SDS Requirements:** Any container holding chemicals must be properly labeled with the name of the substance and any hazards associated with it or its use. Labels must meet all regulatory requirements.

    Strategic Construction Solutions maintains an inventory of all chemicals used at each facility. Also, maintained on site is the SDS for all chemicals present at the work site.

Material Handling

25. **Mechanized Lifting Equipment:** Only competent, trained, and qualified workers will operate lifting equipment (i.e. forklifts, man lifts, work platforms, or etc.). Workers must carry their certification cards when operating this equipment.

    Prior to performing lifts with cranes, hoist, derricks, or other lifting equipment, the equipment operator should determine the weight of the object to be lifted and ensure that cables, lifting equipment, slings, wire ropes, chains, and hooks are of sufficient strength and in proper condition to support the weight of the load. For critical lifts with a crane, derrick, or hoist, written lifting procedures complete with load charts should be prepared and reviewed by the contractor/lifting equipment operators should conduct a visual inspection of equipment prior to commencement of work to determine if the equipment is capable of performing the work and that the equipment will not be operated beyond its design capabilities.

Tag lines should be used whenever loads require guiding or stabilizing. No worker should allow any part of his or her body to extend under any load being lifted by a crane, side boom, or other lifting equipment.

26. **Fork Lifts:** Only authorized and trained personnel will operate fork trucks. Contractors are responsible for the safe operation of the equipment. All fork truck operators must be trained and have a performance evaluation every three (3) years. All operators are required to carry certification cards.

    Requirements for fork lift operation on Strategic Construction Solutions sites are as follows:

    a. All fork trucks will be equipped with an overhead carriage, fire extinguisher, rotating beacon, face plate, horn, and back-up alarm
    b. The operator will perform daily pre-inspections
    c. The operator will wear a seatbelt
    d. Any safety defects (such as hydraulic fluid leaks, defective brakes, defective steering, missing face plate, non-working horn, missing fire extinguisher, etc.) will be reported for immediate repair or have the fork truck taken out of service
    e. Operators will follow the proper recharging or refueling safety procedures
    f. Loads will be tilted back and carried no more than 6 inches from the ground. Loads that restrict the operator's vision will be transported backwards.
    g. Operator will sound horn and use extreme caution when meeting pedestrians, making turns and cornering.
    h. Passengers may not ride on any portion of a fork truck. Only the operator will ride the fork truck.
    i. Lift capacity will be marked on all fork trucks. The Operator will ensure load does not exceed rated limits.

    When unattended, fork trucks will be turned off, forks lowered to the ground, parking brake applied and key removed.

27. **Rigging:** For the purposes of this section, 'rigging' means any combination of rope, wire rope, chain, sling, sheave, hook and associated fittings used in a hoisting operation. Contractors will ensure that only trained and certified riggers will be allowed to rig equipment for lifting purposes.

    Standard wire rope, alloy steel chain, metal mesh, synthetic fiber rope and synthetic fiber web slings should meet the requirements of ASME 830.9-1990.

    Slings should be of sufficient strength to withstand the imposed loads, with minimum safety factors as required by regulation. Slings should be tagged with inspection dates, and loads should be clearly marked.

28. **Equipment and Power Tools:** All equipment and tools necessary to complete the work should be in good condition and operated as per manufacturer's operating guidelines. Medium and large contractor will supply equipment and tools necessary to complete the work; unless other specific arrangements are made with an Strategic Construction Solutions representative. Guards must be properly installed and maintained on all power tools and equipment.

Fire Prevention

29. Medium and large contractors are to supply fire suppression and protection equipment appropriate to the work being performed. ABC type extinguishers are recommended for all

Strategic Construction Solutions sites. Fire extinguishers should be properly inspected, tagged and sealed, and contractor personnel shall be trained in their use.

Strategic Construction Solutions expects the contractor to provide appropriately sized fire extinguishers. Such extinguishers should be based upon vehicle size and potential fire hazard associated with the work.

30. **Smoking:** Smoking is prohibited around the Pipeline right ways and other associated equipment. Smoking is only allowed within designated areas on the worksite. It is the responsibility of the contractor to establish and enforce a designated smoking area a safe distance away (5O feet or more).

31. **Open Flames:** The presence of any open flame is prohibited around well bore, production equipment, compressor station, or any other associated facility. Welding and/or cutting operations within this restricted area may be performed once a Hot Work Permit is issued, and the necessary controls have been instituted to properly address potential hazards onsite.

32. **Cellular Phone and Handheld Radio Usage:** Cellular telephones and handheld radios will be used only when it is safe, prudent, and necessary to do so. Medium and large contractors are expected to assess the risk of accepting or sending transmissions from a cellular phone or handheld radio, including but not limited to, distraction while driving, be at least 50 feet away from an ignition source during perforating operations, and ignition source in the presence of flammable/combustible liquids or vapors.

33. **Fitness for Work:** Medium and large contractor must ensure that its workers are able to perform their job functions safely. Contractor must have appropriate policies and procedures to ensure that such expectation is met, including, for example, fitness for duty and other employment policies consistent with applicable Federal, State and local law (e.g., if applicable, the Americans with Disabilities Act, etc.). Contractor must ensure that its employees do not pose a direct threat to the health and safety of themselves or others while on any Strategic Construction Solutions site.

Biological Hazards and Controls

34. **Snakes:** Snakes are typically found in underbrush and tall grassy areas. Most snake bites occur below the knee, on the hand or on the forearm. It is recommended that employees use gauntlet gloves, high-top leather boots, and extra care when walking through underbrush or tall grass. If you are bitten by a snake:

    a. Stay calm. Notify co-workers to help you seek medical attention. Seek medical attention from the nearest medical facility.

    b. Immobilize the affected limb, keeping the bitten part below the level of the heart. Even if the snake is not venomous, excellent wound care is required. A tetanus booster shot is needed if the employee has not had one within the last 5 years.

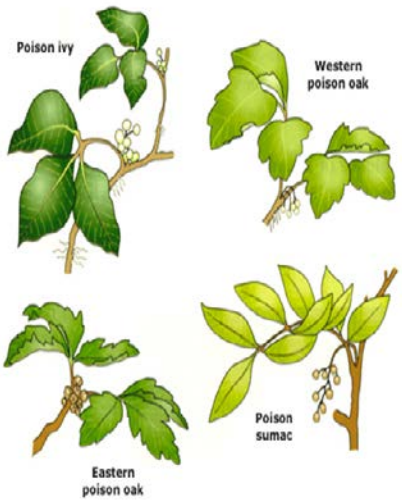
    c. Do not cut the bite open and suck out the venom. Do not apply ice, cold packs, or Freon spray.

    d. As with all puncture wounds, snakebites carry a high risk of infection, whether or not venom is injected. Clean the wound carefully with soap and water.

35. **Ticks & Mosquitoes:** Ticks are typically found in wooded areas, bushes, tall grass, and brush. Ticks are black, black and red, or brown and can be up to one-quarter inch in size. Mosquitoes are found near areas of standing water. Wear long-sleeved shirts tucked into long pants, and hats to cover exposed skin. Tuck pant legs into socks. Use insect repellant on exposed skin to repel ticks, mosquitoes and other insects. DEET concentrations of 30% to 50% are effective for

several hours. Picaridin needs more frequent application. Wash insect repellant off at the end of the day and check thoroughly for ticks.

36. **Bees and Other Stinging Insects:** Bees, wasps, and other stinging insects may be encountered almost anywhere and may present a serious hazard, particularly to people who are allergic. Carry a kit if you have had allergic reaction in the past, and inform your crew leader (typically Party Chief and/or Survey Coordinator). Watch for and avoid nests while working. If stung and the stinger is present, remove it carefully with tweezers. Wash and disinfect the wound, cover it and apply ice. Watch for an allergic reaction and seek medical attention if a reaction develops.
37. **Animals:** Remain alert for wild and domestic animals. If entering a fenced area with animals have an escape path. Do not go between a young animal and its parent. Do not pet or approach animals. Do not feed animals. Remain calm and back away facing the animal.
38. **Poisonous Plants:** Poison ivy, poison oak, and poison sumac are typically found in brush or wooded areas. Become familiar with the identity of these plants and avoid contact. If skin contacts a plant, wash the area with soap and water as soon as possible. Ivy block and ivy dry may reduce the reaction. If the reaction is severe or worsens, seek medical attention. (See images below)



Occupational Health Hazards

39. **Hydrogen Sulfide:** Where Hydrogen Sulfide Gas (H_2S) may be present, contractor personnel will be trained to understand the properties, toxicity, and precautionary measures to be taken when working in an H_2S gas environment. At a minimum, contractors are expected to monitor for the presence of H_2S gas on designated locations as well as take any additional safeguards which may be necessary based on the anticipated exposure concentrations (i.e. ventilation, respiratory protection, windsock, etc.). Contractors are responsible for ensuring compliance with any applicable state and/or Federal regulations related to addressing hazards associated with working in H_2S gas environments.

40. **Condensate:** Only competent, trained, and qualified contractors shall work with or around natural gas condensate. Contractors must understand the need for procedures, training, enforcement be able to protect workers from the hazards. Proper PPE must also be utilized.

41. **Lead Containing Material:** Lead is a toxic heavy metal that can be hazardous when exposed and can be found in a variety of materials such as paints, solder, radiological shielding, and batteries. Working with lead requires precautions and training along with special equipment to prevent airborne exposure. Only licensed professionals will abate lead containing material.

    Treat all materials, if suspected of containing lead, as lead until determined to be lead free. See your supervisor for further direction.

42. **Asbestosis Containing Material (ACM):** ACM is the generic term for a group of naturally occurring, fibrous minerals with high tensile strength, flexibility, and resistance to heat, chemicals, and electricity.

    In the construction industry, asbestos is found in installed products such as sprayed-on fireproofing, pipe insulation, floor tiles, cement pipe and sheet, roofing felts and shingles, ceiling tiles, fire-resistant drywall, drywall joint compounds, and acoustical products. Because very few asbestos containing products are being installed today, most worker exposures occur during the removal of asbestos and the renovation and maintenance of buildings and structures containing asbestos.

    Only trained and authorized contractors are permitted to handle asbestosis. A full abatement plan is require to be reviewed by all affected employees and contractors working in and around ACM before asbestosis abatement activities begin.

43. **Pump Jacks:** Only competent, trained, and qualified contractors shall work with or around pump jacks. Contractors must understand the need for procedures, training, enforcement be

able to protect workers from the hazards. Proper PPE, LOTO practices, fencing, guarding, ladder safety and fall protection issues must be addressed prior to activities around these devices.

Vegetation Management

44. Medium and large contractors must meet state and Federal regulatory requirements regarding soil re-vegetation practices. Contractors should obtain permission from an Strategic Construction Solutions representative prior to utilizing herbicides on Strategic Construction Solutions sites. All herbicide contractors should be trained and/or certified according to state and federal regulatory requirements prior to application on Strategic Construction Solutions sites.

Vehicles

45. All motor vehicles utilized on Strategic Construction Solutions job sites, including, but not limited to, trucks, all-terrain vehicles (ATV's) and excavation equipment, must be operated and maintained in a safe and responsible manner, and in compliance with the manufacturer's instructions and other applicable regulations such as DOT and FMCSA. When required by law, vehicles will be equipped with back-up alarms and rollover protection. Seatbelts must be worn at all times when available.

    Medium and large contractor will provide suitable training and certification, where required, to demonstrate the competency of its workers in operating various types of motor vehicles associated with services being provided to Strategic Construction Solutions.

    Equipment with reduced visibility to the rear (i.e. dump trucks, vacuum trucks, excavation equipment or etc.) should be equipped with back-up alarms or utilize a spotter while backing. In congested work areas, a spotter should be used while backing vehicles. Workers should not approach motorized vehicles until eye contact has been established with the operator.

    Contractors pulling trailers should ensure their trailer has appropriate brakes, brake lights, warning lights, and a hitch with a safety chain.

Waste Management

46. Proper disposal of wastes generated by the Contractor (i.e. waste oil from equipment) is the responsibility of the Contractor. Storage and handling of wastes should be safe, environmentally responsible, and comply with all applicable regulations, with records detailing wastes generated, stored and disposed.

47. **Compressed Gas Cylinders:** All compressed gas cylinders must be labeled, handled, stored, transported, and inspected in compliance with applicable regulations and industry standards.

    All compressed gas cylinders should be returned promptly to the storage area after use. Protective caps should be placed over the cylinder valves when not in use or when the cylinders are being transported by any means. Compressed gas cylinders should be stored in the upright position and secured to a stationary object or structure.

    Compressed gas cylinders should be kept away from heat, including direct sunlight, fire, or electrical lines. Cranes may not transport compressed gas cylinders unless a special carrier is used.

    Acetylene or liquid gas cylinders should never be operated in a horizontal position, as the liquid may be forced out through the hose causing a fire hazard or explosion.

Environmental

48. **Water Diversion:** Contractors are responsible for obtaining from the appropriate Strategic Construction Solutions employee all necessary approvals, licenses, and/or permits needed to

divert water (i.e. use of surface water for drilling, use of groundwater wells) prior to performing the work. The contractor shall post the copy of the permit or approval at the work site while they are conducting the water diversion.

49. **Wildlife Awareness:** Contractors working in wildlife areas will provide their employees with basic information and training on the specific operating procedures and risks associated with work performed in a wildlife area.

50. **Soil Conservation:** All excavation, earth-moving, soil stripping, brush clearing, and other earth-work will be conducted in a manner that preserves the soil and allows for the segregation of soil types in order to facilitate land reclamation in the future. Segregation of soil types should be conducted in accordance with applicable state and Federal regulations. Contractors must use industry best practice to prevent excessive soil erosion due wind or storm water (i.e. diversion ditches, compost filter socks, rock check dams, & etc.) according to state and federal regulations. Contractors are responsible for coordinating any permit requirements with Strategic Construction Solutions staff prior to the initiation of work and shall meet any and all permit requirements as outlined by Strategic Construction Solutions

Regulatory & Worksite Inspections

51. All Contractors must immediately notify a Strategic Construction Solutions representative if approached or contacted by any regulatory inspector while performing services for Strategic Construction Solutions.

52. Onsite supervisors must perform regular worksite inspections of operations, and to participate in joint inspections with an Strategic Construction Solutions representative when requested.

V. EMERGENCY PROCEDURES

1. **Emergency Response:** All members of the workforce are responsible for understanding work site emergency procedures and following directions given during an emergency, including the following:

    a. Be familiar with emergency procedures at the work location for fires, explosions, injuries or other emergencies

    b. Notify the Strategic Construction Solutions representative as soon as possible

    c. Contractors should make no contact with the news media. Media inquiries should be directed to the Strategic Construction Solutions representative.

    Medium and large contractors shall ensure all applicable emergency equipment (i.e. spill kits, fire extinguishers, first aid kits, & etc.) on the site are proper for the work to be performed, readily accessible, and in good working condition. All individuals working on the site should know the location and be trained in proper use of this equipment.

2. **Access/Egress:** All routes of access and egress from site facilities should be kept clear of obstructions at all times. Obstructions include vehicles, equipment, trash, power and phone lines, temporary living quarters, and other materials or equipment. All vehicles must be parked properly and only in designated areas to allow unfettered access/egress to the facility.

3. **Emergency Response Plans:** Medium and large contractors must develop, implement, and enforce their own emergency response plan appropriate for the type of services they perform. Access to such a plan must be made available to all working at the site. At a minimum the plan should contain the following:

    a. Ambulance telephone contacts

b. Fire telephone contacts

c. Police and/or sheriff telephone contacts

d. Pertinent Strategic Construction Solutions emergency contact names and phone numbers

e. Contractor emergency contact names and phone numbers.

Mandatory emergency drills should be periodically conducted.

Fire extinguishing equipment must be conspicuously located and readily accessible. Unless otherwise trained and authorized, do not attempt to extinguish any fire other than incipient-stage fires.

In addition, contractor employees shall be familiar with all Strategic Construction Solutions emergency plans including, where applicable, the following:

f. Strategic Construction Solutions Emergency Response Plan for the site

g. Preparedness, Prevention, and Contingency Plan for the site

h. Waste Disposal Plan for the site

i. Pressure Barrier Policy and Control Plan for the site

j. Spill Prevention, Control, and Countermeasure Plan for the site

The contractor shall know where these plans are located on site and be familiar with the response procedures detailed in these plans.

4. **Extreme Weather Conditions:** Whenever possible, work should not be performed during an electrical storm, high winds, heavy rains, or other weather extremes. Workers should be moved to a safe area until conditions allow for work to resume.

ACKNOWLEDGEMENT FORM - CONTRACTOR EXPECTATIONS

HANDBOOK FOR ENVIRONMENT HEALTH & SAFETY

Contractor Acknowledgement:

This acknowledgement form shall not alter or amend the terms of contractor's written contractual arrangement with Strategic Construction Solutions, nor shall it alter the status of contractor as an independent contractor. Contractor acknowledges its obligation, as reflected in its written contractual agreements with Strategic Construction Solutions, to take responsibility for compliance with all health, safety and environmental rules, regulations, ordinances, and other laws and for directing, overseeing, and controlling activities of its own employees and subcontractors on any Strategic Construction Solutions site.

Contractor acknowledges that the expectations contained in the handbook are designed to mitigate, to the extent possible, the occurrence of accidents or other incidents at Strategic Construction Solutions job sites. However, Strategic Construction Solutions does not warrant or guarantee accidents or incidents will not occur. Contractor is solely responsible for ensuring that all employees and Subcontractors personnel comply with these expectations and that persons or property are protected from injury and damage as a result of contractor's operations on the site.

Contractor should immediately direct any questions, comments or concerns relating to the handbook or any other health and safety related matters, to Strategic Construction Solutions Director of Safety, at safety@atwell-group.com.

I have read the entire Strategic Construction Solutions Health & Safety Contractor Expectation Handbook. I have had the opportunity to ask questions and fully understand the meaning and intent of this Handbook. By signing below, I acknowledge having received this handbook and agree to abide by its contents.

Company: _____

Contractor Signature: _____

Contractor's Printed Name: _____

Date: _____

Please keep a copy of this acknowledgement form for your records and forward a signed copy to Strategic Construction Solutions Safety Department.

You can email safety@atwell-group.com, or, mail to:

Strategic Construction Solutions
4700 East Southern Avenue
Mesa, Arizona 85206
Attention: Safety

Post Job Contractor Performance Evaluation			
Contractor:		Single Project/Annual Review:	
Job Reference:		Assessed by:	
Location:		Date of Evaluation:	

Safety Performance	
Did the contractor have any work injuries during the period of the contract/last 12 months? If YES, give details.	**YES / NO**
Was the contractor involved in any safety, environmental or other incidents? If YES, give details.	**YES / NO**

Safety Management and Standards

Poor = 1 Satisfactory = 2 Good = 3 Very Good = 4 Excellent = 5

	1	2	3	4	5
Rate the contractors ability to prevent injuries & achieve a goal of zero injuries and incidents					
Rate the adequacy of the contractor's safety auditing and inspections					
Rate the contractor's safety performance					
How good was the housekeeping and orderliness?					
Rate the safety attitude and cooperation of the contractor's supervisors.					
Rate the safety attitude and cooperation of the contractor's employees e.g. wearing PPE, barricading					
Rate the quality of the contractor risk assessments					
Comments on overall safety performance:					

Contract					
Poor = 1 Satisfactory = 2 Good = 3 Very Good = 4 Excellent = 5					
	1	**2**	**3**	**4**	**5**
How well were requirements understood, incl. safety					
How responsive was the contractor to requests?					
How easy was communication (fax, email, etc.)?					
Comments:					

Work Performance					
Poor = 1 Satisfactory = 2 Good = 3 Very Good = 4 Excellent = 5					
	1	**2**	**3**	**4**	**5**
Was all the work completed on time?					
How prompt & complete was the work documentation?					
Did the finished work meet the contract specifications?					
How well was the contract self-managed?					
Comments on contract award:					

Overall, would you like to use this contractor again? **YES / NO**

Recommend: a) Stay on Approved Contractors List ☐ or
b) Remove from Approved Contractors List ☐

STRATEGIC
CONSTRUCTION SOLUTIONS

HSE MANUAL

SECTION #HS B001

Asbestos Awareness Policy

Revision 1.1_09SEP2016

I. SCOPE

This document contains the Strategic Construction Solutions Asbestos Awareness policy for the Strategic Construction Solutions employees. The objective of this policy is to outline the work practices, training requirements and processes put in place by the Strategic Construction Solutions Environmental Health and Safety Department to Strategic Construction Solutions Employees from potential exposure to asbestos during Maintenance activities. This policy is intended for Strategic Construction Solutions employees who may work in an area that may contain or have Asbestos Containing Material (ACM. This policy will provide guidance and training to employee when working in the area that has ACM.

II. DEFINITIONS

1. **Asbestos:** includes chrysotile, amosite, crocidolite, tremolite asbestos, anthophyllite asbestos, actinolite asbestos, and any of these minerals that has been chemically treated or altered.

2. **Asbestos-Containing Material (ACM):** any material containing more than one percent (1%) asbestos.

3. **Authorized Activity:** Small scale short duration job task which will impact asbestos containing material has been approved and documented by EHS, has a current Negative Exposure Assessment.

4. **Class I Asbestos Work**: the removal of thermal system insulation and/or surfacing material (ACM or PACM).

5. **Class II Asbestos Work**: removal of any ACM which is not Class I, such as wallboard, floor tile, ceiling tile, linoleum, transite board, roofing materials and mastics.

6. **Class III Asbestos Work (O&M):** repair and maintenance operations where ACM is likely to be disturbed.

7. **Class IV Asbestos Work:** maintenance and custodial activities during which employees contact but do not disturb ACM, and activities to clean up dust and debris which may be generated by Class I, II, or III work.

8. **Clearance Air Monitoring:** Air monitoring conducted by an Asbestos Project Monitor at the conclusion of an asbestos project. Clearance air monitoring includes the successful completion of a final visual inspection for work area debris and the collection and analysis of air samples in accordance with AHERA protocols.

9. **Competent person:** in addition to the definition in 29 CFR 1926.32 (f), one who is capable of identifying existing asbestos hazards in the workplace and selecting the appropriate control strategy for asbestos exposure, who has the authority to take prompt corrective measures to eliminate them, as specified in 29 CFR 1926.32(f): in

addition, for Class I and Class II work who is specially trained in a training course which meets the criteria of EPA's Model Accreditation Plan (40 CFR 763) for supervisor, or its equivalent and, for Class III and Class IV work, who is trained in a manner consistent with EPA requirements for training of local education agency maintenance and custodial staff as set forth at 40 CFR 763.92 (a)(2).

10. **Friable Asbestos Containing Material:** any material containing more than one percent asbestos, which when dry, may be crumbled, pulverized or reduced to powder by hand pressure.

11. **GAC:** General Abatement Contractor

12. **High Efficiency Particulate Air (HEPA) Filter:** a filter capable of trapping and retaining at least 99.97 percent of all mono-dispersed particles of 0.3 micrometers in diameter.

13. **Threshold Quantity:** Maximum amount of specific types of ACM that can be removed or disturbed by Strategic Construction Solutions personnel under this program. Quantities greater than threshold must be conducted by a GAC or with direct approval from Strategic Construction Solutions EHS.

14. **Negative Exposure Assessment (NEA):** a demonstration by the employer, which complies with the criteria in OSHA 29 (CFR) 1926.1101 paragraph (f) (2) (iii), that the employee exposure during the monitored operation is expected to be consistently below the PELs.

15. **Non-Friable Asbestos Containing Material**: materials in which asbestos is bound in a matrix which cannot, when dry, be crumbled, pulverized or reduced to powder by hand pressure (such as floor tile and asphaltic building materials).

16. **Permissible Exposure Limits (PELs):**
    a. Time Weighted Average (TWA): the employer shall ensure that no employee is exposed to an airborne concentration of asbestos in excess of 0.1 fiber per cubic centimeter as an eight (8) hour time weighted average.
    b. Excursion Limit (EL): the employer shall ensure that no employee is exposed to an airborne concentration of asbestos in excess of 1.0 fiber per cubic centimeter of air as averaged over a sampling period of thirty (30) minutes.

17. **PPE**: Personal Protective Equipment

18. **Presumed Asbestos Containing Material (PACM):** thermal system insulation and surfacing material in buildings constructed no later than 1980 are assumed to contain asbestos until it has been analyzed to verify or negate its asbestos content.

19. **Regulated Area**: means an area established by the Strategic Construction Solutions to distinguish areas where airborne concentrations of asbestos exceed or there is a reasonable possibility that they may exceed the permissible exposure limits. The regulated area shall 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.

20. **Vinyl Asbestos Floor Tile (VAT):** vinyl floor tile and in some cases its mastic which contain more than one percent asbestos and must be handled as ACM.

III. ASBESTOS EXPOSURE AND HEALTH CONCERNS

When materials containing asbestos are left intact and undisturbed they do not pose a health risk to building occupants or workers. There is a potential for exposure only when the material becomes damaged to the extent that asbestos fibers become airborne and are inhaled. Asbestos is more likely to release fibers when it is friable. The term friable means the material can be easily reduced to a dust or powder with hand pressure only. If friable forms of asbestos are disturbed and become airborne, an inhalation hazard may result. In non-friable materials like floor tile and laboratory bench tops, the asbestos fibers are tightly bound in a matrix which limits the potential for a fiber release unless the material is rendered friable through mechanical means (i.e. abraded, sanded or sawed).

Generally, adverse health effects from asbestos are the result of long-term exposure to high concentrations of airborne fibers. According to the EPA, airborne asbestos levels in buildings are typically much lower than those identified in industrial work places where asbestos related health effects have been observed.

If exposed to asbestos, several factors may influence whether harmful health effects will occur. These factors include:

- Dose – how much asbestos one is exposed to
- Duration – how long one is exposed to asbestos fibers
- Whether or not you smoke

Health Effects of Asbestos

Asbestos has been determined to be a cancer and lung disease hazard. There are no warning signs that asbestos is causing problems in your body since there are no acute or short-term symptoms. Asbestos related diseases have a latency period of 20-40 years before seeing any symptoms. The three most common asbestos related diseases are:

- Asbestosis – Asbestosis is a serious, progressive, long term non-cancer disease of the lungs.
- Lung Cancer – Lung cancer causes the largest number of deaths related to asbestos exposure.
- Mesothelioma – Mesothelioma is a rare form of cancer that is found in the thin lining (membrane) of the lung, chest, abdomen, and heart and almost all cases are linked to exposure to asbestos.

Exposure to asbestos increases your risk of developing lung disease. That risk is made worse by smoking. Smoking increases the risk of lung cancer 90 times more than exposure to asbestos alone.

IV. ABESTOS LOCATIONS

The asbestos content of every building material on projects is not accounted for on by Strategic Construction Solutions. Prior to impacting building materials for a project, Asbestos trained staff or our client is responsible for determining if the building materials to be impacted are asbestos containing. If

the building material to be impacted during the course of a project is not known Strategic Construction Solutions trained staff have two options.

1. Assume the building material(s) to be impacted are asbestos containing and follow all procedures set forth in this program. EHS is available as a resource to help determine the appropriate course of action on a case by case basis.
2. Submit a request for asbestos sampling. Appropriate contractor will conduct sampling for laboratory analysis and provide an Asbestos Hazard Communication report outlining the sample results and any necessary follow up actions.

Other Potential Asbestos Locations

There are many possible locations where Strategic Construction Solutions 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
- Variety of building materials including
    - Insulation,
    - Soundproofing
    - Floor tiles
    - Roofing felts,
    - Ceiling tiles
    - Asbestos-cement pipe and sheet
    - Fire-resistant drywall
- Pipe and boiler insulation materials
- Pipeline wraps and in
- Sprayed-on materials located on beams, in crawlspaces, and between walls.

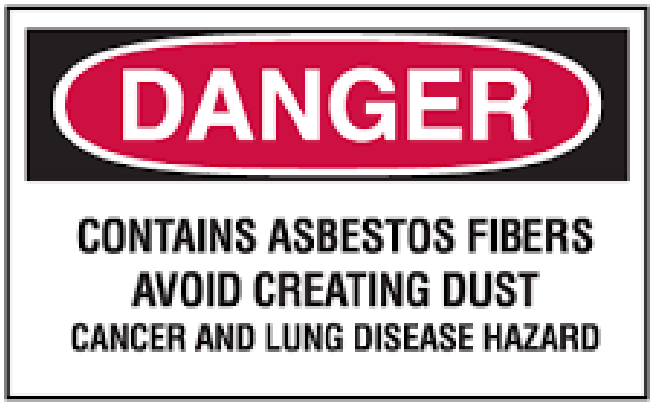
Exposure Monitoring

In multi-Contractor work areas were Strategic Construction Solutions employees are working adjacent to a Class I asbestos controlled areas employees will be protected from exposure by the GAC through proper barriers and monitoring. If it is determined that exposure occurred through inadequate containment then the affected employees will be removed from the affected area until an exposure assessment can prove the area is safe for the employee to return. The client and GAC will be responsible for exposure assessment and will provide proof prior to returning to work.

Warning signs and Controls

Strategic Construction Solutions employees will not enter a regulated area. No Strategic Construction Solutions employee will disturb any ACM and will notify Strategic Construction Solutions EHS if it becomes necessary to do so. Signs and labels shall 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.

Examples of signs and labels are shown below.



V. EMPLOYEE TRAINING

There are various levels of required training for personnel who will work with or around asbestos containing building materials. The level and extent of training is dependent upon the type of work employees will be responsible for conducting with asbestos containing materials. Strategic Construction Solutions EHS can guide and assist in training types and the subsequent requirements. Documentation of training activities must be provided to the Strategic Construction Solutions EHS.

Awareness Training

The OSHA asbestos standards for General Industry (29 CFR 1910.1001) and the Construction Industry (29 CFR 1926.1101) require employers to provide asbestos awareness training to employees who may encounter or potentially disturb ACM or PACM. The general industry standard applies to manufacturing, brake or clutch servicing, and building custodial or housekeeping work. The construction standard applies to building maintenance and construction work and also to housekeeping activities performed after maintenance or construction work. Asbestos awareness training is required within 30 days of initial assignment and on an annual basis thereafter. The training is provided by Strategic Construction Solutions EHS. The Asbestos Awareness training covers:

- Types of asbestos and characteristics

- Health effects associated with asbestos exposure
- Relationship between smoking and asbestos in producing lung cancer
- Information on smoking cessation programs
- Strategic Construction Solutions Policy regarding asbestos management
- Locations where asbestos materials are commonly found
- How to recognize signs of damage and deterioration of ACM and PACM
- Proper response to fiber release episodes
- Standard requirements related to housekeeping

Written materials relating to the employee training program will be readily available to affected employees, the assistant Secretary of Labor for Occupational Safety and Health and the director of the National Institute for Occupational Safety and Health.

IX. REFERENCES

29 CFR 1910.1001
29 CFR 1926.1101

REVISION DATE	REVIEW DATE	REVISION NUMBER	REVISION COMMENTS	AUTHOR
10/05/2015	10/07/2015	1	Reformatted and edited document	Bill Oswald
09/09/2016	09/09/2016	1.1	Logo Change from SCS to Strategic Construction Solutions	Bill Oswald

STRATEGIC
CONSTRUCTION SOLUTIONS

HSE MANUAL

SECTION # HS B002

Asbestos Management/Maintenance Work Policy

Revision 1.1_09SEP2016

I. SCOPE

This document contains the Strategic Construction Solutions Asbestos Management/Maintenance program for the Strategic Construction Solutions employees. The objective of this program is to outline the work practices, training requirements and processes put in place by the Strategic Construction Solutions Environmental Health and Safety Department to protect building occupants and Strategic Construction Solutions Employees during Maintenance activities. This program is intended for Strategic Construction Solutions employees who have been trained for Management/Maintenance work under the Strategic Construction Solutions EHS training.

II. DEFINITIONS

1. **Amended Water:** Water to which surfactant (wetting agent) has been added to increase the ability of the liquid to penetrate.
2. **Asbestos:** Includes chrysotile, amosite, crocidolite, tremolite asbestos, anthophyllite asbestos, actinolite asbestos, and any of these minerals that has been chemically treated or altered.
3. **Asbestos-Containing Material (ACM):** any material containing more than one percent (1%) asbestos.
4. **Authorized Activity:** Small scale short duration job task which will impact asbestos containing material has been approved and documented by EHS, has a current Negative Exposure Assessment.
5. **Class I Asbestos Work**: The removal of thermal system insulation and/or surfacing material (ACM or PACM).
6. **Class II Asbestos Work**: Removal of any ACM which is not Class I, such as wallboard, floor tile, ceiling tile, linoleum, transite board, roofing materials and mastics.
7. **Class III Asbestos Work (O&M):** Repair and maintenance operations where ACM is likely to be disturbed.
8. **Class IV Asbestos Work:** Maintenance and custodial activities during which employees contact but do not disturb ACM, and activities to clean up dust and debris which may be generated by Class I, II, or III work.
9. **Clearance Air Monitoring:** Air monitoring conducted by an Asbestos Project Monitor at the conclusion of an asbestos project. Clearance air monitoring includes the successful completion of a final visual inspection for work area debris and the collection and analysis of air samples in accordance with AHERA protocols.
10. **Competent person:** In addition to the definition in 29 CFR 1926.32 (f), one who is capable of identifying existing asbestos hazards in the workplace and selecting the appropriate control strategy for asbestos exposure, who has the authority to take prompt corrective measures to eliminate them, as specified in 29 CFR 1926.32(f): in addition, for Class I and Class II work who is specially trained in a training course which meets the criteria of EPA's Model Accreditation Plan (40 CFR 763) for supervisor, or its equivalent and, for Class III and Class IV work, who is trained in a manner consistent with EPA requirements for training of local education agency maintenance and custodial staff as set forth at 40 CFR 763.92 (a)(2).
11. **Friable Asbestos Containing Material:** Any material containing more than one percent asbestos, which when dry, may be crumbled, pulverized or reduced to powder by hand pressure.

12. **GAC:** General Abatement Contractor
13. **High Efficiency Particulate Air (HEPA) Filter:** A filter capable of trapping and retaining at least 99.97 percent of all mono-dispersed particles of 0.3 micrometers in diameter.
14. **Threshold Quantity:** Maximum amount of specific types of ACM that can be removed or disturbed by Strategic Construction Solutions personnel under this program. Quantities greater than threshold must be conducted by a GAC or with direct approval from Strategic Construction Solutions EHS.
15. **MMS:** Material Management System maintained by Strategic Construction Solutions EHS.
16. **Negative Exposure Assessment (NEA):** A demonstration by the employer, which complies with the criteria in OSHA 29 (CFR) 1926.1101 paragraph (f) (2) (iii), that the employee exposure during the monitored operation is expected to be consistently below the PELs.
17. **Non-Friable Asbestos Containing Material**: Materials in which asbestos is bound in a matrix which cannot, when dry, be crumbled, pulverized or reduced to powder by hand pressure (such as floor tile and asphaltic building materials).
18. **Permissible Exposure Limits (PELs):**
    a. Time Weighted Average (TWA): The employer shall ensure that no employee is exposed to an airborne concentration of asbestos in excess of 0.1 fibers per cubic centimeter as an eight (8) hour time weighted average.
    b. Excursion Limit (EL): The employer shall ensure that no employee is exposed to an airborne concentration of asbestos in excess of 1.0 fiber per cubic centimeter of air as averaged over a sampling period of thirty (30) minutes.
19. **PPE**: Personal Protective Equipment
20. **Presumed Asbestos Containing Material (PACM):** Thermal system insulation and surfacing material in buildings constructed no later than 1980 are assumed to contain asbestos until it has been analyzed to verify or negate its asbestos content.
21. **Regulated Area**: Means an area established by the Strategic Construction Solutions to distinguish areas where airborne concentrations of asbestos exceed or there is a reasonable possibility that they may exceed the permissible exposure limits. The regulated area shall 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.
22. **Small Scale Short Duration (SSSD):** Removal or disturbance of small quantities of ACM only if required in the performance of another maintenance activity not intended as asbestos abatement.
23. **Vinyl Asbestos Floor Tile (VAT):** Vinyl floor tile and in some cases its mastic which contain more than one percent asbestos and must be handled as ACM.

III. ASBESTOS EXPOSURE AND HEALTH CONCERNS

When materials containing asbestos are left intact and undisturbed they do not pose a health risk to building occupants or workers. There is a potential for exposure only when the material becomes damaged to the extent that asbestos fibers become airborne and are inhaled. Asbestos is more likely to release fibers when it is friable. The term friable means the material can be easily reduced to a dust or powder with hand pressure only. If friable forms of asbestos are disturbed and become airborne, an inhalation hazard may result. In non-friable materials like floor tile and laboratory bench tops, the

asbestos fibers are tightly bound in a matrix which limits the potential for a fiber release unless the material is rendered friable through mechanical means (i.e. abraded, sanded or sawed).

Generally, adverse health effects from asbestos are the result of long-term exposure to high concentrations of airborne fibers. According to the EPA, airborne asbestos levels in buildings are typically much lower than those identified in industrial work places where asbestos related health effects have been observed.

If exposed to asbestos, several factors may influence whether harmful health effects will occur. These factors include:

- Dose – How much asbestos one is exposed to
- Duration – How long one is exposed to asbestos fibers
- Whether or not you smoke

Health Effects of Asbestos

Asbestos has been determined to be a cancer and lung disease hazard. There are no warning signs that asbestos is causing problems in your body since there are no acute or short-term symptoms. Asbestos related diseases have a latency period of 20-40 years before seeing any symptoms. The three most common asbestos related diseases are:

- Asbestosis – Asbestosis is a serious, progressive, long term non-cancer disease of the lungs
- Lung Cancer – Lung cancer causes the largest number of deaths related to asbestos exposure
- Mesothelioma – Mesothelioma is a rare form of cancer that is found in the thin lining (membrane) of the lung, chest, abdomen, and heart and almost all cases are linked to exposure to asbestos.

Exposure to asbestos increases your risk of developing lung disease. That risk is made worse by smoking. Smoking increases the risk of lung cancer 90 times more than exposure to asbestos alone.

IV. EVALUATION PROCEDURES

The asbestos content of every building material on projects is not accounted for on by Strategic Construction Solutions, LLC. Prior to impacting building materials for a project, Asbestos trained staff or our client is responsible for determining if the building materials to be impacted are asbestos containing. If the building material to be impacted during the course of a project is not known Strategic Construction Solutions trained staff have two options.

1. Assume the building material(s) to be impacted are asbestos containing and follow all procedures set forth in this program. EHS is available as a resource to help determine the appropriate course of action on a case by case basis.
2. Submit a request for asbestos sampling. Appropriate contractor will conduct sampling for laboratory analysis and provide an Asbestos Hazard Communication report outlining the sample results and any necessary follow up actions.

Authorized Maintenance Activities

To minimize potential asbestos exposure to maintenance personnel and building occupants, Strategic Construction Solutions has developed Authorized Activities for procedures which will disturb ACM.

Authorized Activities must:

- Be specific to small scale short duration tasks which will impact asbestos

- Be approved by Strategic Construction Solutions EHS
- Have a Negative Exposure Assessment
- Be included in this Program

All Authorized Activities have written procedures outlining approved work methods, type of ACM, required engineering controls and appropriate PPE. Strategic Construction Solutions EHS has developed maximum quantities of particular types of ACM that can be removed or disturbed under this program. Any asbestos work scheduled to be conducted by Strategic Construction Solutions personnel who will exceed these limits must be conducted by a GAC or with direct approval from Strategic Construction Solutions EHS.

Material Type	Maximum Quantity
Floor tile and mastic	**≤ 25 ft^2**
Caulking	**10 ft.**
Window glazing	**10 ft.**
CMU sealant	**≤ 3 ft^2**
Transite (disturbance)*	**< 25 ft^2**
Drywall/plaster (disturbance)*	**< 25 ft^2**
Roofing	**< 25 ft^2**
Ceiling tile	**≤ 8 ft^2**
Fire doors	**1 each**
Adhesives	**≤ 25 ft^2**
*** Disturbance, not removal.**	

A review of the current Authorized Activities will be conducted at the initial Maintenance training and at the annual refresher training thereafter. The review will include discussion about work procedures (i.e. pros, cons, feasibility etc.) and any proposed changes or updates. Trained staff is responsible for informing Strategic Construction Solutions EHS of new work procedures (not currently addressed as an Authorized Activity) which will impact asbestos containing materials. Strategic Construction Solutions EHS will determine whether the task is authorized under this program and be responsible for developing a written work procedure.

Exposure Monitoring

Strategic Construction Solutions shall ensure that no employee is exposed to an airborne concentration of asbestos in excess of 0.1 fibers per cubic centimeter of air as an eight (8)-hour time-weighted average (TWA).

Determinations of employee exposure shall be made from breathing zone air samples that are representative of the 8-hour TWA and 30-minute short-term exposures of each employee.

Representative 8-hour TWA employee exposures shall be determined on the basis of one or more samples representing full-shift exposures for each shift for each employee in each job classification in each work area. Representative 30-minute short-term employee exposures shall be determined on the basis of one or more samples representing 30 minute exposures associated with operations that are most likely to produce exposures above the excursion limit for each shift for each job classification in each work area.

Strategic Construction Solutions will, within 15 working days after the receipt of the results of any monitoring performed, will 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. Written notification required shall contain the corrective action being taken by the employer to reduce employee exposure to or below the TWA and/or excursion limit, wherever monitoring results indicated that the TWA and/or excursion limit had been exceeded.

Where the TWA and/or excursion limit is exceeded, a written program shall be established and implemented to reduce employee exposure to or below the TWA and to or below the excursion limit. The written program will be approved by Strategic Construction Solutions EHS and Operations.

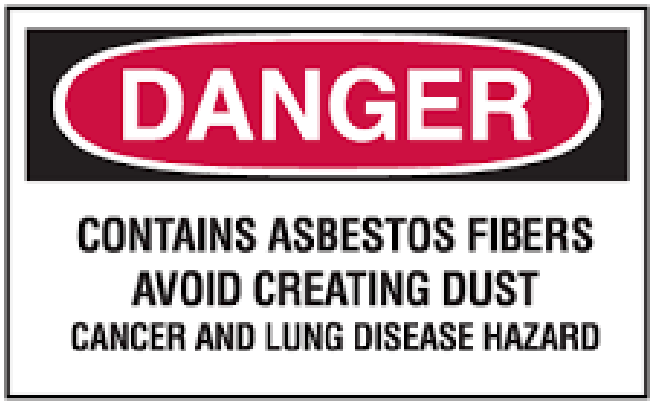
Regulated Areas

Establishment: Strategic Construction Solutions shall establish regulated areas wherever airborne concentrations of asbestos and/or PACM are in excess of the TWA and/or excursion limit.

Demarcation: Regulated areas shall be demarcated from the rest of the workplace in any manner that minimizes the number of persons who will be exposed to asbestos.

1. The following signs will be used the designate an asbestos regulated area. All Signs must meet OSHA requirements.

2. The following labels will be attached to containers of ACM.



Access: Access to regulated areas shall be limited to authorized persons.

Provision of respirators: Each person entering a regulated area shall be supplied with and required to use a respirator.

Engineering controls and work practices

Strategic Construction Solutions shall institute engineering controls and work practices to reduce and maintain employee exposure to or below the TWA and/or excursion limit, except to the extent such controls are not feasible.

Wherever the feasible engineering controls and work practices that can be instituted are not sufficient to reduce employee exposure to or below the TWA and/or excursion limit, Strategic Construction

Solutions shall use them to reduce employee exposure to the lowest levels achievable by these controls and shall supplement them by the use of respiratory protection

Local exhaust ventilation and dust collection systems shall be designed, constructed, installed, and maintained in accordance with good practices such as those found in the American National Standard Fundamentals Governing the Design and Operation of Local Exhaust Systems, ANSI Z9.2-1979.

All hand-operated and power-operated tools which would produce or release fibers of asbestos, such as, but not limited to, saws, scorers, abrasive wheels, and drills, shall be provided with local exhaust ventilation systems.

Insofar as practicable, asbestos shall be handled, mixed, applied, removed, cut, scored, or otherwise worked in a wet state sufficient to prevent the emission of airborne fibers so as to expose employees to levels in excess of the TWA and/or excursion limit, unless the usefulness of the product would be diminished thereby.

No asbestos cement, mortar, coating, grout, plaster, or similar material containing asbestos, shall be removed from bags, cartons, or other containers in which they are shipped, without being either wetted, or enclosed, or ventilated so as to prevent effectively the release of airborne fibers.

Compressed air shall not be used to remove asbestos or materials containing asbestos unless the compressed air is used in conjunction with a ventilation system which effectively captures the dust cloud created by the compressed air.

Prohibited Places

The following work practices shall not be used for any work that disturbs asbestos containing materials, regardless of measured levels of asbestos exposure or the results of initial exposure assessments:

1. Dry sanding
2. High-speed abrasive disc saws that are not equipped with point of cut ventilator or enclosures with HEPA filtered exhaust air
3. Compressed air used to remove or clean dust and debris from materials containing asbestos
4. Dry sweeping, shoveling or other dry clean-up of dust and debris containing ACM and PACM
5. Employee rotation as a means of reducing employee exposure to asbestos
6. Removal of thermal system insulation or surfacing material will not be performed by Strategic Construction Solutions employees.

Routine Maintenance and Cleaning

It is important to minimize the disturbance of asbestos-containing materials and the subsequent release of asbestos fibers. This can be accomplished by staying out of physical contact with materials that contain, or are presumed to contain, asbestos.

Dust and debris in an area containing visibly deteriorated ACM shall not be dusted or swept dry, or vacuumed without using a HEPA vacuum filter. This cleaning shall only be carried out by certified asbestos workers.

The manufacturer’s instructions will provide directions on how and when to change the bag and filters of HEPA vacuum used in maintenance activities.

Workers cleaning HEPA vacuums used in maintenance activities should follow manufacturer’s instructions including:

1. Conduct cleaning activities outdoors away from high use areas

2. Workers conducting cleaning activities should wear PPE
3. When removing bag and filter, lightly mist with water to suppress dust
4. If feasible, use another HEPA vacuum to clean the interior surfaces
5. At a minimum, wet wipe all interior surfaces

Waste Storage and Disposal

Strategic Construction Solutions trained staff are responsible for collecting all asbestos waste and asbestos contaminated materials (i.e. clothing, PPE, etc.) in sealed, labeled, impermeable bags or other closed, labeled, impermeable containers. Asbestos waste generated from any activities must be delivered to the GAC facility according to where the work was conducted. All waste must be delivered to the specified storage area immediately following the scheduled maintenance work or at the end of the work shift, whichever comes first. Asbestos waste must not be stored in vehicles, offices or any other areas not intended for asbestos waste storage. Maintenance trained staff are responsible for accurately documenting the work that was completed in the Asbestos Waste Log at the waste storage facility. Employees must provide the following information regarding the waste:

1. Date work was completed
2. Name of trained staff responsible for work
3. Building
4. Room #'s
5. Work Order #
6. Material(s) Removed
7. Quantity of Material Removed

Documentation of Abated ACM

Strategic Construction Solutions trained employees are responsible for providing documentation for projects which have removed an entire material type from a functional space. For example, the floor tile and mastic from and entire room have been abated and no longer exist in that room.

V. EMPLOYEE TRAINING

There are various levels of required training for personnel who will work with or around asbestos containing building materials. The level and extent of training is dependent upon the type of work employees will be responsible for conducting with asbestos containing materials. Strategic Construction Solutions EHS can guide and assist in training types and the subsequent requirements. Documentation of training activities must be provided to the Strategic Construction Solutions EHS and to the employee's supervisor.

Awareness Training

The OSHA asbestos standards for General Industry (29 CFR 1910.1001) and the Construction Industry (29 CFR 1926.1101) require employers to provide asbestos awareness training to employees who may encounter or potentially disturb ACM or PACM. The general industry standard applies to manufacturing, brake or clutch servicing, and building custodial or housekeeping work. The construction standard applies to building maintenance and construction work and also to housekeeping activities performed after maintenance or construction work. Asbestos awareness training is required within 30 days of initial assignment and on an annual basis thereafter. The training is provided by Strategic Construction Solutions EHS. The Asbestos Awareness training covers:

- Types of asbestos and characteristics
- Health effects associated with asbestos exposure
- Relationship between smoking and asbestos in producing lung cancer
- Information on smoking cessation programs
- Strategic Construction Solutions Policy regarding asbestos management
- Locations where asbestos materials are commonly found
- How to recognize signs of damage and deterioration of ACM and PACM
- Proper response to fiber release episodes
- Standard requirements related to housekeeping

Maintenance (Class III) Training

The OSHA asbestos standard for the Construction Industry (29 CFR 1926.1101(k)(9)) requires employers to provide Class III asbestos training to employees who are likely to be exposed to asbestos in excess of the PEL. Strategic Construction Solutions EHS has developed a Class III asbestos training curriculum, in compliance with the OSHA asbestos standards, specific to the Strategic Construction Solutions program. The training curriculum is developed around the pre-approved work procedures and type of work conducted by personnel on the client's property. Strategic Construction Solutions employees entered into this program must complete the training at the time of assignment and prior to disturbing any ACM or PACM. All employees enrolled in the program must have an annual refresher thereafter. The training is in addition to the initial Asbestos Awareness training.

The Asbestos O&M training provided by EH&S covers general Asbestos Awareness and:

- Methods of recognizing asbestos
- Proper methods of handling ACM or PACM
- Use of respiratory protection and Strategic Construction Solutions EHS Respiratory Protection program
- Additional personal protection measures and good work practices
- Guidelines, requirements and frequency of the medical surveillance program
- Specific work practices and procedures, including hands on demonstration
- Overview of the EHS Negative Exposure Assessment Policy
- Review of authorized work procedures and necessary changes or updates
- Waste storage and disposal procedures

Written materials relating to the employee training program will be readily available to affected employees, the assistant Secretary of Labor for Occupational Safety and Health and the director of the National Institute for Occupational Safety and Health.

VI. MEDICAL SURVEILLANCE

Medical examinations and consultations are required for all employees who are engaged in asbestos work for a combined total of 30 or more days per year or; are exposed at or above the permissible exposure limit or excursion limit; and for employees who wear negative pressure respirators. Days when fewer than sixty minutes of asbestos work are completed are not included in the 30-day count.

The medical examination must be conducted under the supervision of a licensed physician prior to disturbance of any ACM or PACM and repeated at least annually thereafter. The examination must be provided at no cost to the employee. The medical examination must be scheduled with one of the Strategic Construction Solutions approved occupational health providers. If the examining physician determines that any of the examinations should be provided more frequently than specified, affected employees will be examined at the frequencies specified by the physician.

Medical examinations include a medical and work history, with special emphasis directed to the pulmonary, cardiovascular, and gastrointestinal systems. Along with a pulmonary function test, any examinations or tests deemed necessary by the examining physician will be included.

EHS must have a copy of the physician's clearance for asbestos work and respirator use. The employee's supervisor must also maintain a copy of both reports.

Information Provided to the Physician

The following information must be provided to the physician by the employee's supervisor prior to the physical.

- A description of the affected employee's duties as they relate to the employee's exposure
- The employee's representative exposure level or anticipated exposure level
- A description of any personal protection equipment to be used by the employee
- Any information from previous medical examinations of the affected employee that is not otherwise available to the examining physician

Each new Strategic Construction Solutions employee enrolled in the program must complete the OSHA Initial Medical Questionnaire prior to scheduling a medical examination and before disturbance of any ACM or PACM. Strategic Construction Solutions employees enrolled in the program must complete a Periodic Medical Questionnaire prior to their annual medical re-examination.

Physician's Written Opinion

The examining physician provides a written statement consisting of the physician's opinion whether the employee has any detected medical conditions that would place the employee at an increased risk of material health impairment from exposure to asbestos. The physicians report will also include:

- Any recommended limitations on the employee, or on the use of personal protective equipment such as respirators
- A statement that the employee has been informed by the physician of the results of the medical examination, and any medical conditions that may result from asbestos exposure
- A statement that the employee has been informed by the physician of the increased risk of lung cancer attributable to the combined effect of smoking and asbestos exposure
- The physician will not reveal in the written opinion given to the employer, specific findings or diagnoses unrelated to occupational exposure to asbestos. The affected employee will provide a copy of the physician's written opinion to the supervisor within 30 days from its receipt. The employee is responsible for providing a copy of the Physician's written opinion to the supervisor and to EHS.

Record Keeping

EHS is responsible for maintaining Employee training documentation and fit testing records. Supervisors are responsible for maintaining medical surveillance documentation and the Physician's written opinion. The employee is responsible for providing EHS with a copy of the Physician's written opinion at the time of Fit Testing.

VII. NEGATIVE EXPOSURE ASSESMENT (NEA)

EHS has developed a NEA protocol for trained employees who will perform tasks which will disturb ACM. The purpose of the NEA is to demonstrate that employee exposures for specific tasks will be consistently below the PELs. Each NEA is specific to employees enrolled in the program and whose training and experience are no more extensive than that of employees performing the Authorized Activity.

A NEA determination will be based on:

- Objective data demonstrating that the specific job task cannot release airborne asbestos fibers in concentrations exceeding the TWA and excursion limit under those work conditions having the greatest potential for releasing asbestos fibers.
- Air sample data, collected for comparison to the PEL and EL within 12 months of the Authorized Activity and show that under the conditions prevailing and which will prevail in the current workplace there is a high degree of certainty that employee exposures will not exceed the TWA and excursion limit. Sample data must be obtained under workplace conditions "closely resembling" the processes, type of material, control methods, work practices, and environmental conditions outlined in the work procedure.

VIII. PERSONAL PROTECTIVE CLOTING (PPE)

Respiratory Protection

Respiratory protection must be worn for all work involving disturbance of ACM or PACM unless a NEA has been performed and demonstrates that employee exposure during the specific operation is expected to be consistently below the PEL and EL. The NEA must be performed by Strategic Construction Solutions EHS and be specific to the work practices outlined in this program. Before respirators can be worn, employees must be enrolled in the Strategic Construction Solutions Respiratory Protection program. Enrollment in the Respiratory Protection Program includes:

- Completion of an initial and annual respirator medical questionnaire
- Initial and annual respirator medical evaluation by a licensed physician
- Initial and annual respiratory Protection Training
- Fit testing (prior to respirator use, as needed and at a minimum annually)

All Strategic Construction Solutions employees enrolled in the Program and Respiratory Protection Program must have a fit test conducted by Strategic Construction Solutions designated clinic prior to respirator use. Additional fit tests are required annually at a minimum and on an as needed basis if required. EHS provides respiratory protection training and fit testing at no cost to the employee or department. Additional information regarding the EHS Respiratory Protection Program, fit testing and training can be obtained from Strategic Construction Solutions EHS.

Protective Clothing

Employees must wear protective clothing when conducting activities which are likely to create exposures at or above the OSHA PEL or EL. Protective clothing is considered to be:

- Disposable coverall (e.g. Tyvek) made from a synthetic fabric which will not allow asbestos fibers to pass through. This type clothing prevents a worker's regular clothing from being contaminated with asbestos fibers.
- Gloves
- Head Coverings

- Foot coverings
- Face shields
- Vented Goggles

Protective clothing is not required if an NEA has been performed and demonstrates that employee exposure during the specific operation is expected to be consistently below the PEL and EL. The NEA must be performed by EHS and be specific to the work practices outlined in this program.

IX. REFERENCES

29 CFR 1910.1001

29 CFR 1926.1101

REVISION DATE	REVIEW DATE	REVISION NUMBER	REVISION COMMENTS	AUTHOR
10/05/2015	10/05/2015	1	Reformatted and edited document	Bill Oswald
09/09/2016	09/09/2016	1.1	Logo Change from SCS to Strategic Construction Solutions	Bill Oswald

HSE MANUAL

SECTION #HS B003

Ground Fault Circuit Interrupter GFCI Policy
Assured Equipment Grounding Conductor

Revision 1.1_09SEP2016

I. SCOPE

1. It is the policy of Strategic Construction Solutions to establish and implement an assured equipment grounding conductor program on construction sites covering all cord sets, receptacles which are not a part of the permanent wiring of the building or structure, and equipment connected by cord and plug which are available for use or used by employees.
2. Supervisors are designated to implement the assured equipment grounding conductor program on their work site.
3. Supervisors will be responsible and accountable for the following:
    a. Each cord set, attachment cap, plug and receptacle of cord set and any equipment connected by cord and plug, except cord sets and receptacles which are fixed and not exposed to damage, shall be visually inspected before each day's use for external defects, such as deformed or missing pins, or insulation damage, and for indication of possible internal damage. Equipment found damaged or defective may not be used until repaired.
    b. Supervisors are responsible for tests on all cord sets, receptacles which are not a part of the permanent wiring of the building or structure, and cord and plug connected equipment repaired to be grounded. Tests shall be documented on the log for assured equipment grounding conductor program and shall be on the jobsite for inspection by Regulatory officials and any affected employee. Equipment that does not meet prescribed test shall not be put into service. The following tests shall be performed:
        i. All equipment grounding conductors shall be tested for continuity and shall be electrically continuous
        ii. Each receptacle and attachment cap or plug shall be tested for correct attachment of the equipment grounding conductor. The equipment grounding shall be connected to its terminal
4. A copy of this policy shall be at the jobsite for inspection and copy by Regulatory officials and any affected employee. A copy of the completed forms will be kept on each applicable jobsite for inspection purposes.

II. PLAN CONTENT

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

1. **Installation** - Equipment grounding conductors shall be installed as follows:
    a. All 120 volt, single phase, 15- and 20- ampere receptacles shall be of the grounding type and their contacts shall be grounded by connection to the equipment grounding conductor of the circuit supply the receptacle i accordance with the applicable requirements of the National Electrical Code.
    b. All 120 volt cord sets (extension cords) shall have an equipment grounding conductor which shall be connected to the grounding contacts of the connector(s) on each end of the cord.
    c. The exposed concurrent-carrying metal parts of the 120 volt cord and plug-connected tools and equipment that are likely to become energized shall be grounded in accordance with the applicable requirements of the National Electrical Code.

2. **Visual Inspection** - Employees shall be instructed to visually inspect receptacle, flexible cord sets (extension cords), except those that are fixed and not exposed to damage, and equipment connected by cord and plug before each day's use for external defects such as deformed or missing pins or insulation damage and for indication of possible internal damage. Where there is evidence of damage, the damaged item shall be taken out of service and tagged until tested and any required repairs have been made.
3. **Testing Ground** - All 120 volt, single phase, 15 and 20- ampere receptacles which are not a part of the permanent wiring of the building or structure, 1220 volt flexible cord sets, and 120 volt cord and plug connected equipment required to be grounded shall be tested as follows:
    a. All equipment grounding conductors shall be tested for continuity and shall be electrically continuous.
    b. Each receptacle and attachment cord or plug shall be tested or correct attachment of the equipment grounding conductor. The equipment grounding conductor shall be connected to its proper terminal.
4. **Testing Schedule** - All required tests shall be performed:
    a. Before first use
    b. Before equipment is returned to service following any repairs
    c. Before equipment is used after any incident which can be reasonably suspected to have caused damage (for example, when a cord set is run over)
    d. At intervals not to exceed three (3) months, except that cord sets and receptacle which are fixed and not exposed to damage shall be tested at intervals not exceeding six (6) months
5. **Test Records** - Test verification shall be by means of numeric or color coded marking tape ion the receptacle, cord set or equipment to identify that it has passed the test and to indicate the date (month or quarter) in accordance with section 5.0 Coding Scheme.
6. **Color Scheme** - Coding schemes for assured equipment grounding conductor test record. All cords, temporary wiring and portable equipment will be marked in accordance with the below color scheme.

Electrical Cord Color Coding Scheme		
Month/Quarter	**Quarter**	**Month**
January	**White**	**White**
February		**Yellow**
March		**Blue**
April	**Green**	**Green**
May		**Yellow**
June		**Blue**
July	**Red**	**Red**
August		**Yellow**
September		**Blue**
October	**Orange**	**Orange**
November		**Yellow**
December		**Blue**
Repair/Incident	**Brown**	**Brown**

III. References

CFR 1926.404

REVISION DATE	REVIEW DATE	REVISION NUMBER	REVISION COMMENTS	AUTHOR
03/10/2016	03/10/2016	1	Created the document	Bill Oswald
09/09/2016	09/09/2016	1.1	Logo Change from SCS to Strategic Construction Solutions	Bill Oswald

Attachment A

Assured Equipment Grounding Conductor Inspection Log

Project Name				
Location				
Job Number				
ID of Equipment Tested	Date Tested	Action, if any	Reason A,B,C,D	Tested By (signature)

***REASON FOR TEST:**

A. BEFORE FIRST USE

B. BEFORE EQUIPMENT IS RETURNED TO SERVICE FOLLOWING ANY REPAIRS

C. BEFORE EQUIPMENT IS USED, AFTER ANY INCIDENT WHICH CAN BE REASONABLY SUSPECTED TO HAVE CAUSED DAMAGE.

D. AT INTERVALS NOT TO EXCEED THREE (3) MONTHS, EXCEPT THAT CORD SETS AND RECEPTACLES WHICH ARE FIXED AND NOT EXPOSED TO DAMAGE SHALL BE TESTED AT INTERVALS NOT EXCEEDING SIX (6) MONTHS.

Authorized Signature: _____ Date: _____.

HSE MANUAL

SECTION # HS B004

Benzene Awareness Policy

Revision 1.1_09SEP2016

I. SCOPE

A. Strategic Construction Solutions is committed to providing a safe and healthy work environment for our employees. Strategic Construction Solutions has adopted and initiated this policy for the prevention of exposure to Benzene in accordance with the following OSHA regulations:
   1. 1910.1028 – Benzene, and Appendices A, B, C, and D
   2. 1910.1200 – Hazard Communication Standards for Employers

B. Strategic Construction Solutions has implemented this policy to ensure that no employee is exposed to Benzene at levels in excess of the permissible exposure limits (PELs).

II. PROGRAM OVERVIEW

A. When Strategic Construction Solutions performs work activities on client locations that require working around benzene or equipment that may contain benzene like petroleum pipelines, Distribution hubs, Strategic Construction Solutions management and supervisors are responsible for ensuring the following engineering controls and work practices are enforced:

1. Strategic Construction Solutions will provide and/or arrange for employees to receive information and training at the time of their initial assignment to a work area where benzene is present. If exposures are above the action level (PEL), employees will be provided with information and training at least annually thereafter.

2. Employees will be informed of all regulated areas and are properly trained in entrance procedure, safety requirements, and practices when in regulated areas.

3. Employees are required to wear the appropriate PPE as necessary, eye, face, boots, gloves, sleeves and aprons.

4. Strategic Construction Solutions has implemented and will maintain a Respiratory Protection Program. The Respiratory Protection Program and respiratory protective equipment is provided for all employees with potential for exposure to benzene. Respirators will be used during:
   a) Periods necessary to install or implement feasible engineering and work practice controls
   b) Emergencies
   c) Work operations for which feasible engineering and work-practice controls are not yet sufficient to reduce employee exposure to or below the PEL

5. Project managers and supervisors will select approved respirators according to airborne concentrations of benzene and condition of use from Table 1 below:

Table 1 – Respiratory Protection for Benzene

Airborne concentration of benzene	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.
(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.

6. Employees will wear appropriate PPE at all times when working in the proximity of Benzene. This PPE will include proper eye and face protection, boots, gloves, sleeves, aprons, etc. in accordance with 29 CFR 1910.133 where appropriate.

7. Personal protective clothing and equipment will be worn where appropriate to prevent eye contact and limit dermal exposure to liquid benzene. Protective clothing and equipment will be provided by Strategic Construction Solutions at no cost to the employee and Strategic Construction Solutions will assure its use where appropriate.

8. Adequate ventilation will be ensured in all enclosed work areas.

9. 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.

10. Strategic Construction Solutions will make available a medical surveillance program for employees who potentially may be exposed to Benzene at or above the action level or PEL. This service will be provided at no cost to employees under the supervision of a licensed physician.

11. Strategic Construction Solutions will make available a medical surveillance program for employees who are or may be exposed to benzene at or above the action level 30 or more days per year; for employees who are or may be exposed to benzene at or above the PEL 10 or more days per year; for employees who have been exposed to more than 10 ppm of benzene for 30 or more days in a year prior to the effective date of the standard when employed by their current employer.

12. All appropriate signs and labels will be posted in areas of potential exposure to Benzene.

13. All containers or vessels containing Benzene will be appropriately labeled to indicate the contents and the hazards of the contents.

14. Employees will be instructed as to potential locations where they may be exposed to Benzene including:
    a) Petroleum refining sites
    b) Tank Gauging (tanks at producing, pipeline, and refining operations).
    c) Field maintenance

15. Employees will be instructed as to the characteristics of Benzene including:
    a) Toxicity
    b) Color
    c) Odor
    d) Solubility
    e) Flammability
    f) Toxic by-products

16. Employees will be instructed as to the health effects of overexposure to Benzene including:

    a) Short-term (acute) overexposure: If you are overexposed to high concentrations of Benzene, well above the levels where its odor is first recognizable, you may feel breathless, irritable, euphoric, or giddy; you may experience irritation in eyes, nose, and respiratory tract. You may develop a headache; feel dizzy, nauseated, or intoxicated. Severe exposures may lead to convulsions and loss of consciousness.

b) Long-term (chronic) exposure: Repeated or prolonged exposure to Benzene, even at relatively low concentrations, may result in various blood disorders, ranging from anemia to leukemia, an irreversible, fatal disease. Many blood disorders associated with Benzene exposure may occur without symptoms.

17. 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.

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

19. Employees will be informed where Benzene is used at the host facility and be made aware of additional plant or work site safety rules.

20. SDS for Benzene and all other hazardous materials Strategic Construction Solutions uses are available to employees for review upon request.

REVISION DATE	REVIEW DATE	REVISION NUMBER	REVISION COMMENTS	AUTHOR
03/15/2016	03/15/2016	0	created document	Bill Oswald
15MAR2016	15MAR2017	1	Edit/reformatted document	K Rodriguez
09/09/2016	09/09/2016	1.1	Logo Change from SCS to Strategic Construction Solutions	Bill Oswald

STRATEGIC
CONSTRUCTION SOLUTIONS

HSE MANUAL

SECTION # HS B006

Heat Illness Prevention Policy

Revision 2.1_09SEP2016

I. SCOPE

A. Strategic Construction Solutions is committed to providing a safe and healthy work environment for our employees. Strategic Construction Solutions employees who work in outdoor places or who work in other environments where environmental risk factors for heat illness are present are at risk for developing heat related illnesses if they do not protect themselves appropriately. The objective of this program is to reduce the potential for heat illnesses by making employees aware of heat illnesses, ways to prevent illness, and actions to take if symptoms occur.

B. A copy of this program will be made available to all employees and their designated representatives.

II. DEFINITIONS

A. **Acclimatization** means the temporary, gradual adaptation of the body to work in the heat when a person is exposed to it. Usual acclimatization time while working in the heat for at least two (2) hours per day ranges from four (4) to 14 days. Acclimation procedures include close observation of all employees during a heat wave – defined as at least 80 degree Fahrenheit. New employees must be closely observed for their first two weeks on the job.

B. **Emergency response** procedures include effective communication, response to signs and symptoms of heat illness, and procedures for contacting emergency responders to help stricken employees.

C. **Environmental risk factors for heat illness** mean the working conditions that create the possibility for a heat illness to occur. Risk factors include air temperature, air movement, relative humidity, workload, work severity, work duration, radiant heat, conductive heat, and personal protective equipment (PPE) worn by an employee.

D. **Heat illness** means a serious medical illness, which results from the body's inability to cope with a heat load. Heat illnesses include heat cramps, heat exhaustion, heat stroke and heat syncope (fainting).

E. **High-heat procedures** are required for locations that Strategic Construction Solutions is working in when temperatures reach 95 degrees Fahrenheit or above. These procedures include observing and being in constant contact with employees, closely supervising new employees and reminding all workers to drink water. The high heat procedures shall ensure "effective" observation and monitoring, including a mandatory buddy system and regular communication with employees working by themselves. During high heat, employees must be provided with a minimum 10-minute cool-down period every two hours. The industries specified under this modification are: 1) Agriculture, 2) Construction, 3) Landscaping, 4) Oil and gas extraction, 5) Transportation or delivery of agricultural products, construction material or other heavy materials.

F. **Personal risk factors for heat illness** includes factors such as an employee's age, level of acclimatization, health, water consumption, alcohol consumption, caffeine consumption, overall health, and use of prescription medications which may alter the body's ability to retain water or otherwise affect the body's physiological response to heat. (Strategic Construction Solutions shall not request any of the above personal information from an employee).

G. **Preventative recovery period** means a period of time for an employee to recover from a heat illness or signs of a heat illness. The amount of time for a recovery period shall be no shorter than five minutes and shall be taken in a shaded area. Employees taking a preventative cool-down rest must be monitored for symptoms of heat illness, encouraged to remain in the shade, and not ordered back to work until symptoms are gone. Employees with symptoms must be provided appropriate first aid or emergency response.

H. **Shade** means the blockage of direct sunlight. Sufficient blockage is when an object does not cast a shadow in the area of the blockage. Shade is not acceptable if heat in the shaded area prevents the body from cooling. Shade shall be open to the air or otherwise provided with ventilation and/or climate controlled. Access to shade shall be made available at all times.

I. **Shade requirements** must be adequate to accommodate all employees on recovery or rest periods, and those onsite taking meal periods when temperatures reach 80 degrees, and located as close as practicable to the areas where employees are working. When temperatures are below 80 degrees, employers shall provide timely access to shade upon an employee's request.

III. RESPONSIBILITY

A. Health and Safety Department:

1. Will assist Project Managers and Supervisors with developing a site written program which complies with the requirements of this policy
2. Assisting with providing training tools to all potential employees who may be impacted and their supervisors on the risks and prevention of heat illness, including how to recognize symptoms and respond when they appear.

B. Project Managers and Supervisors are responsible for:

1. Identifying all employees who are required to work outdoors or in other environments where potential heat illness could occur and identify the supervisor of the employee.
2. Assuring that adequate water, shade, and necessary rest breaks are available when the environmental risk factors for heat stress are present.
3. Ensuring that all affected employees are trained on heat illness prevention
4. Ensuring that the requirements in this document are followed

C. Affected employees are responsible for:

1. Complying with the provisions of the Heat Illness Prevention Program, as described in this document and in the training sessions they attend.
2. Ensuring that they have the appropriate amount of drinking water available at all times when the environmental risk factors for heat illness are present.
3. Ensuring they have access to a shaded area to prevent or recover from heat related symptoms.
4. Reporting heat related illness symptoms to the supervisor.

IV. PROCEDURES

A. **Procedures for Provision of Water**

1. Employees shall have access to potable drinking water that is fresh, pure, suitably cool, and provided to employees free of charge. The water shall be located as close as practicable to the areas where employees are working. Where drinking water is not plumbed or otherwise continuously supplied, it shall be provided in sufficient quantity at the beginning of the work shift to provide one quart per employee per hour for drinking for the entire shift.
2. At the beginning of each shift, all employees who work outside when environmental risk factors for heat illness are present shall have sufficient quantities and immediate access to at least one (1) quart of potable drinking water per hour for the entire shift (at least two (2) gallons of potable water per person per eight (8)-hour shift).
3. Smaller quantities may be provided if the Strategic Construction Solutions has an effective procedure for replenishment that meets the above quantity and time requirements.
4. Water must be fresh, pure, suitably cool and located as close as practicable to where employees are working, with exceptions made only when infeasibility can be demonstrated by the employer.
5. The importance of frequent drinking water shall be conveyed and encouraged it will also be described in the Heat Illness Prevention Training.

B. **Procedures for Access to Shade**

1. Shade shall be present when the temperature exceeds 80 degrees Fahrenheit. When the outdoor temperature in the work area exceeds 80 degrees Fahrenheit, the employer shall have and maintain one or more areas with shade at all times while employees are present that are either open to the air or provided with ventilation or cooling. Shade structures must be erected if there are no other sources of shade readily available.
2. Even when the temperature does not exceed 80 degrees Fahrenheit, shade or timely access to shade must be provided upon request. When shade from a nearby site is not readily available or accessible, shade structures will be opened and placed as close as practical to the employees. ***Note:*** *The interior of a vehicle may not be used to provide shade unless the vehicle is air conditioned and the air conditioner is on.*
3. Access to shade shall be made available at all times to any employee experiencing heat illness, symptoms of heat illness, or believing a preventative recovery period is needed. Employees with symptoms must be provided appropriate first aid or emergency response.
4. The preventative recovery period shall be at least five (5) minutes. Employees taking a preventative cool down rest must be monitored for symptoms of heat illness, encouraged to remain in the shade, and not ordered back to work until symptoms are gone.
5. Water shall be made available in the shade/preventative recovery period area.
6. When temperatures equal or exceed 80 degrees Fahrenheit or during a heat wave, adequate shade must be provided to accommodate all employees on recovery or rest periods, and those onsite taking meal periods.

C. **Procedures for Monitoring the Weather**

1. To identify if environmental risk factors are present, the Supervisor shall obtain temperature and humidity measurements for the work areas, either by direct measurements or by weather forecasts that are adjusted to match worksite conditions.
2. To evaluate if an environmental risk factor is present, Supervision shall obtain the Heat Index, calculated by the National Weather Service, to rate the risk of heat illness depending on air temperature and humidity. The use of the Heat Index Hydration Chart has been put together to assist in making work rest decisions. Strategic Construction Solutions shall assume there is a significant risk of heat illness when the Heat Index for an employee working in the sun is 80 degrees Fahrenheit or above, and 90 degrees Fahrenheit or above when employees are working in the shade.
3. High-heat procedures shall include, but are not limited to:
    a) Effective communication by voice, observation or electronic means
    b) Observation of employees for alertness and signs/symptoms of heat illness
    c) Designating one or more employees on each worksite as authorized to call for emergency medical services
    d) Reminding employees to drink water throughout the shift
    e) Pre-shift meetings before beginning work to review the high heat procedures, encourage drinking water, and remind employees of their right to take a cool-down rest when necessary.
4. To control and reduce the exposure to environmental risk factors, Strategic Construction Solutions shall utilize the following control measures (mark all that apply):
    a) Provide shade for work areas
    b) Schedule outdoor and/or vigorous work in the cooler hours of the day
    c) Schedule more breaks during the day
    d) Provide misters or other cooling devices

D. **Identifying, Evaluating and Controlling Personal Risk Factors for Heat Illness**

1. Strategic Construction Solutions shall train employees on the factors that can affect their vulnerability to heat illness. These factors include an employee's age, level of acclimatization, health, water consumption, alcohol consumption, caffeine consumption, overall health, and use of prescription medications that may alter the body's ability to retain water or otherwise affect its physiological response to heat. Strategic Construction Solutions shall convey the importance of acclimatization, and shall take steps to aid employees in becoming acclimatized.

Heat Index Hydration Chart

Important Consideration: NOAA devised the heat index values for shaded conditions and light winds. Full sunshine can increase heat index values by up to 15° F. Strenuous work and the use of heavy specialized protective clothing also have an added effect.		**EASY WORK**		**MODERATE WORK**		**HARD WORK**	
		Walking on hard surface at 2.5 mph < 30 lb. load		Walking on loose sand at 2.5mph with load Walking hard surface at 3.5mph < 40lb load.		Walking on hard surface at 3.5mph > 40lb load Walking loose sand at 2.5mph with load.	
Heat Category	**WBGT** Index F°	Work/ Rest (min)	Water Intake (qt/hr)	Work/Rest (min)	Water Intake (qt/hr)	Work/Rest (min)	Water Intake (qt/hr)
1	**<80°**	NL	½	NL	¾	40/20 min	¾
2 (Green) **Low Caution**	**81°-90°**	NL	½	50/10 min	¾	30/30 min	1
	Basic heat safety and planning. Provide adequate amounts of drinking water in convenient, visible locations close to the work area.						
3 (Yellow) **Moderate**	**91°-103°**	NL	¾	40/20 min	¾	30/30 min	1
	Implement precautions and heighten awareness. Remind workers to drink water often (about 4 cups/hour)**						
4 (Red) **High**	**103°-115°**	NL	¾	30/30 min	¾	20/40 min	1
	Additional precautions to protect workers. Alert workers of high risk conditions. Actively encourage workers to drink plenty of water (about 4 cups/hour)**						
5 (Black) **Extreme**	**>115°**	50/10 min	1	20/40 min	1	10/50 min	1
	NO WORK						

E. **Reporting Symptoms or Signs of Heat Illness to Supervision**

1. Employees exhibiting signs or symptoms of heat illness, or who observe a co-worker with signs or symptoms, shall report these symptoms to the supervisor or foreman immediately.
2. It shall be the responsibility of the supervisor or foreman to respond to all reports and/or observations of heat illness symptoms and signs.
3. When a sick employee is unable to communicate, it shall be the responsibility of onsite supervision to contact emergency services when required, and to provide accurate and precise directions to the employee's location. This individual shall be immediately available to perform this function.
4. Strategic Construction Solutions shall account for the whereabouts of all employees at appropriate intervals during and at the end of the work shift. This procedure shall be followed whenever the outdoor work environment creates a heat hazard that could result in the collapse of an employee due to heat illness. Communication between the Supervisor and their crew is of the utmost importance.

V. EMPLOYEE INFORMATION AND TRAINING

A. Training shall be administered to all employees and their supervisors who fall under the scope of this policy. Strategic Construction Solutions shall ensure the effectiveness of the training by one of the following methods:

1. Tailgate meetings before a shift begins
2. Test employees/supervisors after training
3. Conduct the training on a regular basis

B. Supervisory and non-supervisory employees shall be trained on:

1. Environmental and personal risk factors for heat illness
2. Strategic Construction Solutions procedures for identifying, evaluating and controlling the exposure to environmental and personal risk factors for heat illness
3. Importance of frequent consumption of small amounts of water under extreme conditions
4. Acclimatization and its importance
5. Types of heat illness and their symptoms, signs, and differences
6. Procedure for immediately reporting the signs and symptoms of heat illness in themselves or in a co-worker to their employer, and its importance
7. Procedures for Strategic Construction Solutions to respond to symptoms of heat illness, which shall include how emergency medical services will be provided, if needed
8. Procedures for contacting emergency medical services and transporting employees to a readily accessible location for emergency medical services to reach them
9. Procedures on and how to provide clear and precise directions to emergency medical services

C. Supervisors will be trained prior to assignment as a supervisor. Supervisors shall be trained on:

1. All information included in the above section
2. Procedures a supervisor shall follow when implementing this Heat Illness Prevention Plan

3. The procedures a supervisor shall follow when an employee exhibits symptoms of a possible heat illness, which includes emergency response procedures

VI. PROGRAM REVIEW

A. Health & Safety will conduct a periodic program review at least once every three (3) years.

VII. REFERENCES

29 CFR 1910.1200
OSHA and Cal/OSHA Hazard Communication Standard, CFR 1910.1200 and CCR Title 8, §5194)

REVISION DATE	REVIEW DATE	REVISION NUMBER	REVISION COMMENTS	AUTHOR
10/27/2015	10/27/2015	1	Reformatted and edited document	Bill Oswald
26JAN16		2	Reformatted and edited document	K. Rodriguez
09/09/2016	09/09/2016	1.1	Logo Change from SCS to Strategic Construction Solutions	Bill Oswald

STRATEGIC
CONSTRUCTION SOLUTIONS

HSE MANUAL

SECTION #HS B007

Electrical Safety Awareness

Revision 1.1_09SEP16

I. SCOPE

This section sets forth requirements for electrical safety. It specifically addresses working in restricted areas; working near exposed energized overhead lines or parts; operating equipment near radio and microwave transmission towers; working on electrical equipment and systems; personal protective grounding; temporary wiring; disconnect and overcurrent protection; ground-fault protection; hazardous locations; wet locations; and battery charging.

II. COVERED TASKS

1. **General Electrical Safety Requirements**

   All electrical work practices must comply with applicable sections of the Occupational Safety and Health Administration (OSHA), National Fire Protection Association (NFPA), National Electrical Code, National Electrical Safety Code, and State adopted electrical codes.

   a. **Approval Required.** Use only electrical wire, conduit, apparatus, and equipment for the specific application that is approved or listed by Underwriters Laboratories (UL), or Factory Mutual Corporation (FMC). Install and use listed, labeled, or certified equipment according to the instructions included in the listing, labeling, or certification.

   b. **Qualified Persons.** Only qualified personnel familiar with code requirements, safety standards, and experienced in the type work may work on electrical circuits and equipment. NFPA 70E and OSHA 29 CFR 1910.269 contain references for training requirements.

   c. **Safety Requirements before Performing Electrical Work.** Strategic Construction Solutions will determine, by inquiry, direct observation, or instruments, the location of any part of an energized electric power circuit, exposed or concealed. If the work may cause any person, tool, or machine to penetrate the boundaries set forth in table 5.1, de-energize the circuit(s) and ground them, as appropriate. Additionally, all of the following must be required:

   d. **Underground Lines.** Protect all underground lines with surface signs and a longitudinal warning tape buried 12 inches to 18 inches above the lines. Do not perform drilling, auguring, or material excavating operation within six (6) feet of underground lines unless the lines have been de-energized.

   e. **Job Briefing.** The supervisor or designee must conduct a job briefing with affected workers. The supervisor or designee must hold additional job briefings if significant changes occur during the course of work. The briefing must cover the following:

      i) **Job Safety Analysis (JSA).** Identify all hazards associated with the job in a written JHA and discuss them.

      ii) **Nonelectrical Hazards**. Identify, in a written JSA, hazards not associated with the electrical work but expected to be encountered, and discuss them.

      iii) **Personal Protective Equipment (PPE).** Provide and use the appropriate PPE needed to accomplish the job safely. Use flash- protection clothing in accordance with NFPA 70E if the job requires operating, racking, circuit

breakers with the doors open or, working within reaching distances of exposed energized parts. Employees working on energized lines and equipment rated at 440 volts or greater must use rubber gloves, hard hats, safety boots, and other approved protective equipment or hot-line tools that meet ASTM standards.

f. **Other Procedures**. Perform procedures related to electrical work in accordance with the following:

   i) HS B016, Lock Out Tag Out Policy

   ii) HS C010, Personal Protective Equipment

III. GENERAL SAFE PRACTICES

1. Safety-related work practices shall 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 which are or may be energized.
2. Only

3. If the exposed live parts are not deenergized, other safety-related work practices shall be used to protect employees who may be exposed to the electrical hazards involved. Such work practices shall protect employees against contact with energized circuit parts directly with any part of their body or indirectly through some other conductive object.

4. All electrical equipment and systems shall be treated as energized until tested or otherwise proven to be de-energized.

5. While any employee is exposed to contact with parts of fixed electric equipment or circuits which have been deenergized, the circuits energizing the parts shall be locked out or tagged or both.

6. Strategic Construction Solutions will follow it written Lock Out policy HS B016, when performing lock out, tag out, try out procedures.

IV. DEENERGIZING EQUIPMENT

1. Safe procedures for deenergizing circuits and equipment shall be determined before circuits or equipment is deenergized.

2. The circuits and equipment to be worked on shall be disconnected from all electric energy sources.
   a. Control circuit devices, such as push buttons, selector switches, and interlocks, may not be used as the sole means for deenergizing circuits or equipment.
   b. Interlocks for electric equipment may not be used as a substitute for lockout and tagging procedures.

3. Stored electric energy which might endanger personnel shall be released. Capacitors shall be discharged and high capacitance elements shall be short-circuited and grounded, if the stored electric energy might endanger personnel.

a. If the capacitors or associated equipment are handled in meeting this requirement, they shall be treated as energized.

4. Stored non-electrical energy in devices that could reenergize electric circuit parts shall be blocked or relieved to the extent that the circuit parts could not be accidentally energized by the device.

5. "Application of locks and tags." A lock and a tag shall be placed on each disconnecting means used to deenergize circuits and equipment on which work is to be performed. The lock shall be attached so as to prevent persons from operating the disconnecting means unless they resort to undue force or the use of tools.

6. Each tag shall contain a statement prohibiting unauthorized operation of the disconnecting means and removal of the tag.

7. Verification of deenergized condition. The requirements of this paragraph shall be met before any circuits or equipment can be considered and worked as deenergized.

8. A qualified person shall operate the equipment operating controls or otherwise verify that the equipment cannot be restarted.
   a. A qualified person shall use test equipment to test the circuit elements and electrical parts of equipment to which employees will be exposed and shall verify that the circuit elements and equipment parts are deenergized.
   b. The test shall also determine if any energized condition exists as a result of inadvertently induced voltage or unrelated voltage back feed even though specific parts of the circuit have been deenergized and presumed to be safe.
   c. If the circuit to be tested is over 600 volts, nominal, the test equipment shall be checked for proper operation immediately after this test.

9. Reenergizing equipment- These requirements shall be met, in the order given, before circuits or equipment are reenergized, even temporarily.
   a. A qualified person shall conduct tests and visual inspections, as necessary, to verify that all tools, electrical jumpers, shorts, grounds, and other such devices have been removed, so that the circuits and equipment can be safely energized.
   b. Employees exposed to the hazards associated with reenergizing the circuit or equipment shall be warned to stay clear of circuits and equipment.

   c. Each lock and tag shall 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:
      i. The employer ensures that the employee who applied the lock or tag is not available at the workplace, and
      ii. The employer ensures that the employee is aware that the lock or tag has been removed before he or she resumes work at that workplace.
      iii. There shall be a visual determination that all employees are clear of the circuits and equipment.

V. RESTRICTED AREAS

1. **General.** Provide effective barriers or other means to ensure that people do not use areas with electrical circuits or equipment as passageways when energized lines or equipment are exposed.

Effectively guard live parts of wiring or equipment to protect persons or objects from harmful contact. Use special tools insulated for the voltage when installing or removing fuses with one or both terminals energized.

2. **High-Voltage Equipment (over 600 volts nominal).** Isolate exposed high-voltage equipment, such as transformer banks, open switches, and similar equipment with exposed energized parts to prevent unauthorized access. Isolation must consist of locked rooms, fences or screened enclosures, walls, partitions, or elevated locations. Keep entrances to isolated areas locked when not under constant observation. Post **DANGER—HIGH VOLTAGE** warning signs at entrances to these areas. Properly ground conductive components, fences, guardrails, screens, partitions, walls, and equipment frames and enclosures.

3. **Temporary Fences.** When extending a fence or removing it for work on high voltage equipment, erect a temporary fence of comparable construction and protection. Electrically bond the temporary fence to the existing fence. If the fence is more than 40 feet long, bond posts to the ground mat at no more than 40-foot intervals. Bond posts at each side of gates or openings to the ground mat/grid and install a bonding jumper across all gate hinges. Bond all corner posts to the ground mat.

4. **Perimeter Markings.** Use approved perimeter markings to isolate restricted areas from designated work areas and entryways. Erect them before work begins and maintain them for the duration of work. Approved perimeter marking must be:

   a. **Barrier Tape**. Install red barrier tape printed with the words "**DANGER—HIGH VOLTAGE**" around the perimeter of the work area and access way approximately 42 inches above the floor or work surface.

   b. **Synthetic Rope Barrier**. Install a barrier of yellow or orange synthetic rope 36 to 45 inches from the floor with standard danger signs of non-conductive material attached at 10-foot intervals containing the words "**DANGER–HIGH VOLTAGE**."

VI. WORKING NEAR EXPOSED ENERGIZED OVERHEAD LINES OR PARTS

1. **General** - For troubleshooting and testing purposes only, qualified persons using proper test equipment and personal protective equipment must adhere to the boundaries shown in figure 4.1 and specified in table 4.1. For adjusting, tightening, calibrating or any other work, the circuits must be de- energized, or employees must use voltage-rated gloves and voltage-rated insulated tools.

   a. **Low Voltage Testing -** For low voltage troubleshooting and testing purposes only, i.e., **fewer than 480 volts**, a qualified person may penetrate the prohibited approach

boundary shown in table 4.1, column 5, with test instrument probes, leads, CT's, etc. The qualified person must wear Class 00 (500 volt-rated) gloves.

b. **Unqualified Person Restrictions** - When a person without electrical training works on the ground or in an elevated position near overhead lines or any other exposed energized parts, supervisors and employees must ensure that the unqualified person and the longest conductive object they might contact or handle, can never come closer to any energized line or part than those distances listed in table 4.1, column 2, for energized lines or column 3 for other exposed live parts.

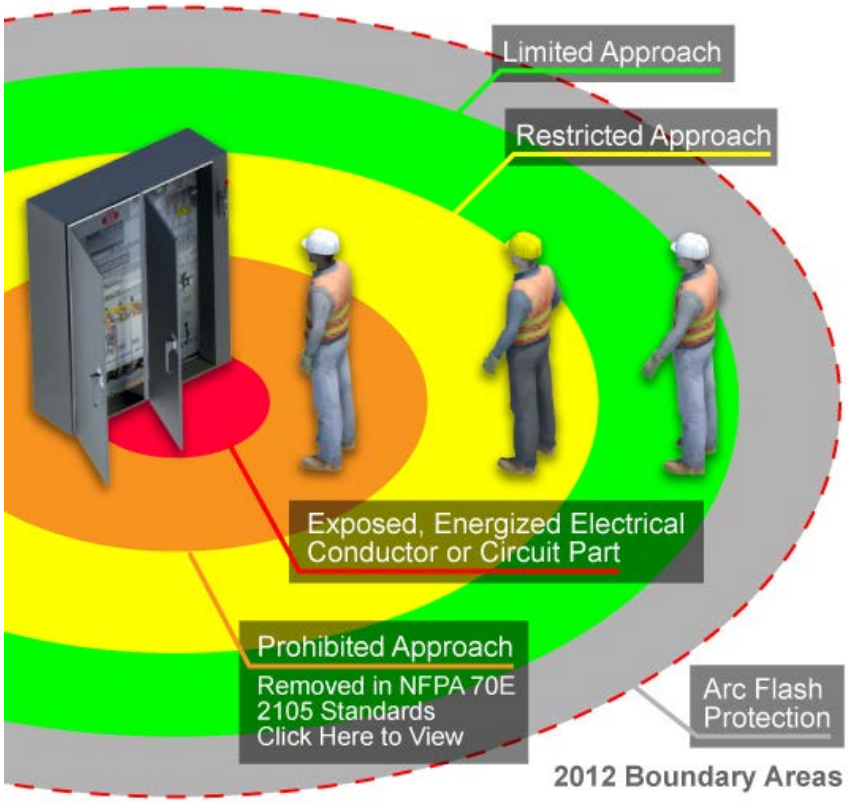


Figure 4.1 – Boundaries

Table 4.1.—Approach boundaries to exposed energized conductors/parts for qualified employees (All dimensions are distances from energized conductor/part to employee)

1	2		3		4		5	
Nominal voltage phase to phase, or single phase	Limited approach boundaries: Exposed moveable conductor		Limited approach boundaries: Exposed fixed circuit part		Restricted approach boundary includes inadvertent movement		Prohibited approach boundary	
0 to 50	not specified		not specified		not specified		not specified	
51 to 300	10-ft	0-in	3-ft	6-in	avoid contact		avoid contact	
301 to 750	10-ft	0-in	3-ft	6-in	1-ft	0-in	0-ft	1-in
751 to 15 kV	10-ft	0-in	5-ft	0-in	2-ft	2-in	0-ft	7-in
15.1 kV to 36 kV	10-ft	0-in	6-ft	0-in	2-ft	7-in	0-ft	10-in
36.1 kV to 46 kV	10-ft	0-in	8-ft	0-in	2-ft	9-in	1-ft	5-in
46.1 kV to 72.5 kV	10-ft	0-in	8-ft	0-in	3-ft	3-in	2-ft	1-in
72.6 kV to 121 kV	10-ft	8-in	8-ft	0-in	3-ft	2-in	2-ft	8-in
138 kV to 145 kV	11-ft	0-in	10-ft	0-in	3-ft	7-in	3-ft	1-in
161 kV to 169 kV	11-ft	8-in	11-ft	8-in	4-ft	0-in	3-ft	6-in
230 kV to 242 kV	13-ft	0-in	13-ft	0-in	5-ft	3-in	4-ft	9-in
345 kV to 362 kV	15-ft	4-in	15-ft	4-in	8-ft	6-in	8-ft	0-in
500 kV to 550 kV	19-ft	0-in	19-ft	0-in	11-ft	3-in	10-ft	9-in
765 kV to 800 kV	23-ft	9-in	23-ft	9-in	14-ft	11-in	14-ft	5-in

Notes: *This table is taken from NFPA 70E table 2-1.3.4 and OSHA 29 CFR,1910.269 table R6*.

c. **Limited Approach Boundaries -** A shock protection boundary to be crossed only by qualified persons (at a distance from a live part). Unqualified persons must not cross this boundary unless accompanied by a qualified person.

d. **Restricted Approach Boundary -** A shock protection boundary to be crossed only by qualified persons (at a distance from a live part). The boundary's proximity to a shock hazard requires the use of shock protection techniques and equipment when crossed.

e. **Prohibited Approach Boundary -** A shock protection boundary to be crossed only by qualified persons (at a distance from a live part). When crossed by a body part or object, this boundary requires the same protection as if direct contact is made with a live part (i.e., requires voltage rated tools and voltage rated gloves and, in some cases, other voltage rated clothing).

2. **Equipment Transit Clearances** - A signal or flag person must guide cranes, cherry pickers, high lifts, and other equipment in transit near exposed energized lines or parts at all times. Do not move any equipment or machinery under energized overhead high-voltage lines or near exposed energized parts, unless clearances listed in table 4.2 are maintained. Unload and lower any boom or mast to transport position. Ground the equipment while it is being transported. Two grounds must be leap-frogged as the vehicle is moved or the vehicles must be treated as energized.

Table 4.2 – Equipment In Transit Clearances	
Up to 50 kV	4 FT
50 kV up to and including 345 kV	10 FT
Over 345 kV up to 750 kV	16 FT

3. **Sign Posting** - Post all crossings where equipment will be moved under energized high-voltage line(s) with appropriate signs. Place the signs 50 feet from and on both sides of the line(s). They must be large enough to be easily read from moving equipment. The sign must include the following information:
    a. Warning of the high-voltage line
    b. Line voltage
    c. Maximum height of equipment that may pass under the line
    d. Determine the maximum height of the equipment by subtracting the clearance distance shown in table 4.2 from the actual line to ground distance during maximum sag conditions.
4. **Equipment Operation Near Energized Lines** - Prohibit equipment from coming any closer to overhead high-voltage lines or exposed energized parts than distances shown in table 4.3, unless both subparagraphs a. and b. below are satisfied, or subparagraph c. below is satisfied.
    a. Before beginning work, place a clearance, ground and de-energize the line or exposed energized parts, and implement hazardous energy control procedures to prevent re-energization.
    b. Equipment does not have the capability of coming within distances shown in table 4.3.
    c. In addition to the clearances in table 4.3, effectively ground all equipment with booms or extensions above cab level while it is operating in a substation, switchyard, or on a transformer deck, or any other location near high voltage energized lines/parts.

Table 4.3 - Equipment Operation Near Energized Lines Table of minimum clearances (FT) for nominal system voltages (kV)	
kV	**FT**
50 (or less)	10
69	11
115	12
230	16
500	25

Note: Table 4.3 shows only common reclamation voltages and rounds them up to the nearest foot. For other voltages, use the 10-foot minimum and add 4 inches for every 10 kilovolts over 50 kilovolts. For example, 60 kilovolts would be 10 feet plus 4 inches; rounding up to the nearest foot would require an 11-foot clearance.

Always round up because the clearance is usually only an estimate. It is difficult, if not impossible, to accurately measure the actual distance unless you de-energize the line and/or equipment.

5. **Placard Posting in Equipment Cabs** - Post a placard of minimum clearances (table 5.3) in the cab of all cranes, cherry pickers, shovels, backhoes, and any other equipment with booms or extensions that could possibly contact high-voltage lines. Tables posted in machines must be of substantial material and suitable for the environment.

V. OPERATING EQUIPMENT NEAR RADIO AND MICROWAVE TRANSMISSION TOWERS

1. **General** - Because of high frequency, low power output, and point-to- point transmissions, microwave transmissions do not present an induced charge hazard. However, many microwave towers are mounted on VHF radio transmission antennas. Therefore, the following safety precautions apply to all transmission towers. Vehicles will rarely need to be grounded at transmission towers. Tires contain carbon compounds and are conductive or semi conductive and static charges will bleed off through tires and/or out- riggers. However, voltage could build up if all tires were insulated from the earth by dry rip-rap or other insulation.
2. **Requirement** - Shut down the transmitter or ground and test the equipment to determine if a hazard exists before working near any transmission tower where an electrical charge may be induced in the equipment or materials being handled. To conduct a test, connect an insulated wire to the vehicle and touch it to the tower base. If you see or hear the spark, you must ground the vehicle.
3. **Grounding Mobile Equipment Near Transmission Towers** - If needed, ground the equipment to dissipate static electrical charge. On equipment with a rotating boom, attach a ground wire to the structure supporting the boom. Place and remove ground wires using hot-sticks or voltage-rated gloves. Attach the ground connection first (if possible, to the tower ground), then attach the other end to the equipment. These ground wires do not have to be sized to carry fault current. They need only to carry low level current to bleed off static voltage charges induced on the vehicle or lifted materials. Any convenient wire size that will mechanically withstand the service will be sufficient. A smaller conductor would carry the current, but an insulated #2 copper conductor is recommended for mechanical strength.
4. **Material Ground Wire** - Also, attach a ground wire to conductive materials handled by hoisting equipment. Attach the ground connection first, and then attach the other end on the materials. Alternatively, provide a ground jumper from the load to the required grounding conductor installed on the structure.

VI. WORKING ON ELECETRICAL EQUIPMENT AND SYSTEMS

1. **General** - Electrical installations must comply with the applicable provisions of the current editions of the National Electrical Safety Code, National Electrical Code, OSHA Regulations, and the Reclamation Safety and Health Standards. The Underwriters Laboratories (ul), Factory Mutual Laboratories (FMC), or other nationally recognized testing laboratory must approve or list electrical wire, conduit, apparatus, power tools and equipment, for the specific application. This approval/listing must appear on each piece of equipment or tool as part of the “marking or labeling” required below.
2. **Marking or Labeling** - Do not use electrical equipment unless the manufacturer’s name, trademark, and other descriptive marking by which the manufacturer may be identified, is located on the equipment. Markings must also provide voltage, current, wattage,

approvals/listings, and ratings as required by the edition of the National Electric Code in effect at the time of purchase. Markings must be sufficiently durability to withstand the environment.

3. Working Space

a. Figure 6.2 and Table 6.4 provide access and working space distances around electrical equipment and enclosures, e.g., panel boards, motor controls, disconnects, etc., to permit ready and safe operation and maintenance. Keep working space clear at all times.

b. Provide a working space of at least 30 inches horizontally where rear or side access is required to work on de-energized parts of enclosed equipment (see figure 6.3).

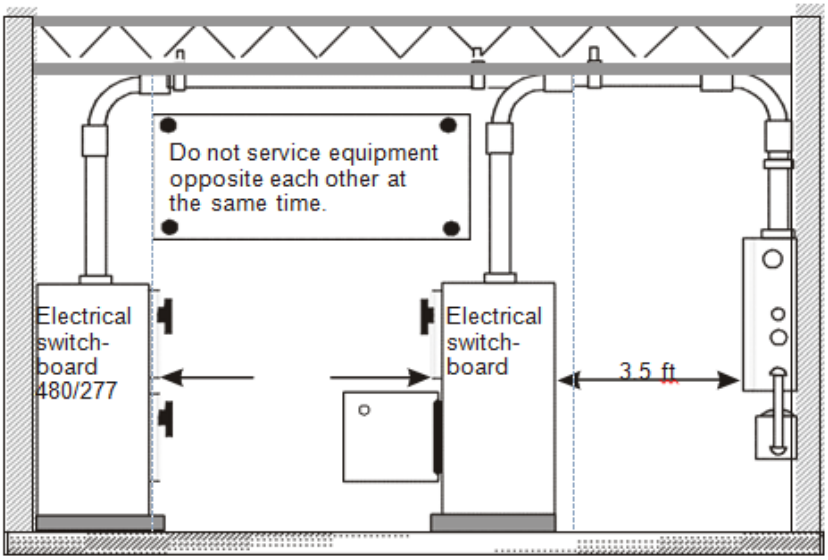


Figure 6.2 – Access and working space requirements around enclosures and equipment

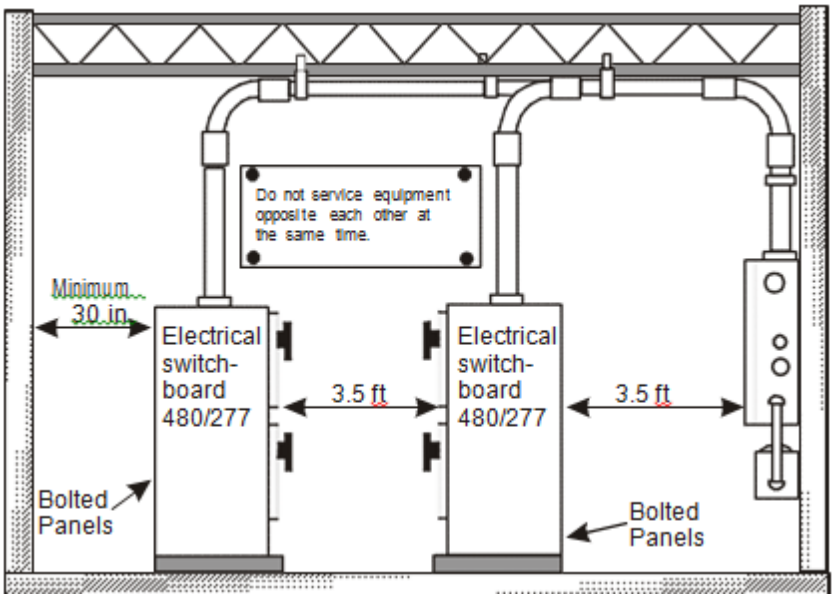


Figure 6.3 – Working space requirements for rear or side access

Table 6.4 – Working Spaces Around Enclosures and Equipment			
Nominal Voltage to Ground	Minimum Clear Distance (FT)		
	Condition 1	Condition 2	Condition 3
0 - 150	3	3	3
151 - 600	3	3.5	4
601 – 2,500	3	4	5
2,501 – 9,000	4	5	6
9,001 – 25,000	5	6	6

Condition 1 *- Exposed live parts on one side and no live parts or grounded parts on the other side of the working space, or exposed live parts on both sides effectively guarded by suitable wood or other insulating materials. Insulated wire or insulated bus bars operating at not over 300 volts to ground shall not be considered live parts.*

Condition 2 *- Exposed live parts on one side and grounded parts on the other side. Consider concrete, brick, or tile walls grounded.*

Condition 3 *- Exposed live parts on both sides of the work space (not guarded or enclosed, as provided in Condition 1) with the worker between.*

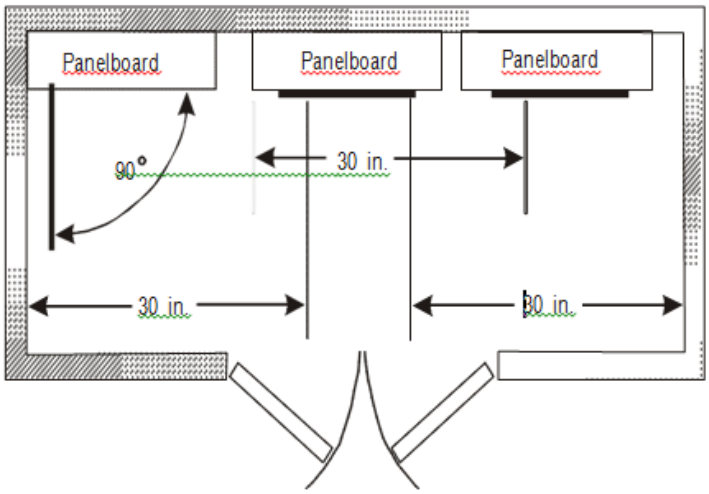


Figure 6.4 – Working space requirements for doors and hinged panels

c. **Doors and hinged panels** - Doors and hinged panels must have at least at least a 90-degree opening. Keep working space clear at all times. Do not store parts, tools, and equipment in the clear space (see figure 6.4).

d. **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.

4. **Passageway Barriers** - Provide effective barriers or other means (barrier tape) to ensure that areas containing electrical circuits or equipment are not used as passageways when energized lines or equipment are exposed for testing or maintenance. This includes open doors on motor control centers, and switchgear.
5. **Confined or enclosed work spaces** - When an employee works in a confined or enclosed space (such as a manhole or vault) that contains exposed energized parts, Strategic Construction Solutions shall provide, and the employee shall use, protective shields, protective barriers, or insulating materials as necessary to avoid inadvertent contact with these parts. Doors, hinged panels, and the like shall be secured to prevent their swinging into an employee and causing the employee to contact exposed energized parts.
6. **Portable ladders** shall have nonconductive side rails if they are used where the employee or the ladder could contact exposed energized parts.
7. **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.

VII. PERSONAL PROTECTIVE GROUNDING

1. **General -** Qualified persons must comply with applicable provisions of Health and Safety Policy HS C010 Personal Protective Equipment. Include written grounding procedures in all clearances, special work permits, etc. The JSA must include the procedures, and employees must discuss them before beginning work.
2. **Over 600 Volts** - Place grounds as close as possible to the work and within sight of the workers for all electrical circuits and equipment operated in excess of 600 volts. The clearance holder is personally responsible for proper placement and removal of protective grounds.
3. **Personal Protective Ground Cables** - Personal protective grounds and clamps must be capable of conducting the calculated maximum fault current available for the time necessary to clear the fault. They must be sized in accordance with Health and Safety Policy HS C010.
4. **Prior to Applying Grounds** - After implementing hazardous energy control, use a hot-stick “noise tester” or similar approved device of sufficient insulating capacity to verify that the circuit or equipment is de-energized before placing personal protective grounds. Test the voltage tester immediately before use on a known energized source of similar voltage before testing the equipment to be worked on. The circuit/equipment to be worked on must be considered energized while conducting the test.
5. **Placement and Removal of Personal Protective Grounds** - After de-energization, install personal protective grounds so that all phases of lines and equipment are visibly and effectively bonded together in a multi-phase short and connected to ground at one point. Do not use single-phase personal protective grounds or grounding chains. Install personal protective grounds using a hot-stick or voltage-rated gloves on both sides of the work area, if possible. This precaution prevents a possible back feed, especially when working on transformers and related equipment. When attaching grounds, attach the ground end first, and then attach the other end to the de-energized circuit. When removing personal protective grounds, first remove the grounding clamp from the de-energized circuit using a hot stick or voltage rated gloves, and then remove the other end from the ground connection.

VIII. TEMPORARY WIRING

1. **Installation -** Temporary wiring must meet all the requirements of the National Electrical Code (NEC). Permit temporary wiring only during the period of construction, remodeling, maintenance, repair, or demolition. Remove temporary wiring immediately upon completion of construction or purposes for which the wiring was installed. Permit temporary wiring used for feeders and branch circuits in multi-conductor cord or cable assemblies or open conductors, and guard, bury, or isolate it by elevation to prevent accidental contact by personnel or equipment. Allow at least 10 feet of vertical clearance above walkways for circuits rated 600 volts or less. Support all exposed temporary wiring on insulators. Provide ground fault protection for personnel for all temporary wiring installations to comply with the NEC.
2. **Weatherproof** - Conductors used in tunnels, shafts, trenches, and wet or damp locations must be of a type approved for the purpose as listed in Article 310 of the NEC.
3. **Bushings** - Wiring installed in conduit must be equipped with bushings at ends of conduit.
4. **Receptacles -** All receptacles must be of the grounding type and must be electrically connected to the equipment grounding conductor. Do not install receptacles on construction sites on branch circuits that supply temporary lighting. Do not connect receptacles to the same ungrounded conductor of multi-wire circuits that supply temporary wiring.
5. **Lighting Strings** - Temporary lighting strings must consist of nonconductive lamp sockets and connections permanently molded to the conductor insulation. Use lamp guards to protect bulbs attached to festoon lighting strings and extension cords. Promptly replace broken or defective bulbs. Protect all lights used for illumination from accidental contact or breakage.
6. **Extension Cords** - Extension cords must be 3-wire grounded type, must be designated for hard service or extra hard service, and must be listed by the Underwriters Laboratories (uL). Do not exceed the rated load. Use cords only in continuous lengths without splice. Do not use worn or frayed extension cords. To protect cable assemblies, flexible cords, and cables from damage, support them in place with approved staples, cable ties, straps, or similar type fittings installed to prevent damage.

IX. DISCONNECT AND OVERCURRENT PROTECTION

1. **Marking** - Plainly mark, label, or arrange switches, fuses, and automatic circuit breakers to identify the circuits or equipment controlled by them.
2. **Switches** - Switches must be of the enclosed safety type, with the enclosures grounded, and installed so as to minimize the possibility of accidental operation.
3. **Lockout Provision** - Provide disconnects and breakers with a means of locking in the OFF position. Also, fuse cabinets and circuit breaker cabinets must be equipped with lockable doors.
4. **Wet and Outside Locations** - Enclose switches, circuit breakers, fuse panels, and motor controllers in wet or outside locations in approved weatherproof cabinets or enclosures. Prevent moisture or water from entering or accumulating within the cabinets or enclosure.
5. **Shielding** - Isolate or shield the disconnecting means to protect employees.
6. **Service Entrance Disconnect** - Install the service entrance disconnecting means in a readily accessible location, as close as possible to the point where the service entrance conductors enter the premise. The service disconnecting means must disconnect all the ungrounded service entrance conductors supplying power to the service equipment. This disconnecting means must plainly indicate that it is either in the open or closed position.

7. **Overcurrent Protection** - Fuses or circuit breakers must provide overcurrent protection for all ungrounded conductors. All overcurrent protection devices and conductors must be designed and installed according to the latest provisions of the NEC to ensure protection and proper installation. Do not place any overcurrent device in any permanently grounded conductor, except where the overcurrent device simultaneously opens all conductors of the circuit.

X. GROUND FAULT PROTECTION

1. **Requirement** - Protect all 125-volt, single-phase, 15 and 20 ampere receptacles outlets used in locations such as laboratories, shops, garages, wet locations, outdoor receptacles, bathrooms, kitchens, and for construction operations with a ground-fault circuit interrupter (GFCI). For temporary wiring, all 125 volt, single-phase, 15-, 20-, and 30-ampere receptacle outlets that are not a part of the permanent wiring of the building or structure and that employees use must have ground-fault circuit interrupter protection for personnel. For temporary wiring, receptacles other than 125 volt, single- phase, 15-, 20-, and 30-ampere receptacles must have ground-fault circuit protection or protection in accordance with the assured equipment grounding conductor program. The ground-fault interrupter must open the circuit on a ground current of 5 mill amperes plus or minus 1 and must be equipped with an integral push-button test circuit. Install the GFCI in accordance with the manufacturer's instructions and test it before initial use and periodically thereafter.
2. **Assured Equipment Grounding Conductor Program** - Where GFCI protection is not provided for personnel, the Assured Equipment Grounding Conductor Program must be implemented. This program must be used on all receptacle outlets, except 125-volt, single-phase, 15-, 20-, and 30-amp receptacle outlets, used during construction, remodeling, maintenance, repair or demolition of buildings, structures, equipment, or similar activities. Receptacle outlets must not be connected to any branch circuits that supply power to lighting outlets, per NEC 527.4(D).
    a. All cord sets and receptacles that are not part of the permanent wiring of the building or structure, as well as cord and plug connected equipment required to be grounded, must meet the following requirements:
        i. Have a written description of the program
        ii. Have a qualified person to implement the program
    b. All equipment grounding conductors must be tested for continuity and be electrically continuous.
    c. Each receptacle and attachment plug must be tested for correct attachment of the equipment grounding conductor.
    d. Tests are required under the following conditions for an Assured Equipment Grounding Program:
        i. Before first use onsite
        ii. When there is evidence of damage
        iii. Before equipment is returned to service following any repairs
        iv. At intervals not exceeding 3 months
    e. The required test for all equipment grounding conductors and each receptacle and attachment plug above must be recorded and available for inspection.

XI. HAZARDOUS LOCATIONS

1. **General** - A hazardous location is any location where a potential hazard, either a fire or an explosion, can exist because of the presence of flammable, combustible, or ignitable materials. These materials can consist of gases, vapors, liquids, dust, fibers, etc. Hazardous locations are classified according to the properties and quantities of the hazardous material that may be present. Hazardous locations are divided into three classes, two divisions, and seven classified groups as follows: Class I, II, and III; Division 1 and 2; and Groups A, B, C, D, E, F, and G. Wiring methods used in hazardous locations must comply with more stringent requirements than wiring methods used in other locations.
2. **Requirement** - Electrical wiring and equipment installed in hazardous locations, as defined in the National Electrical Code, must conform to the respective standards. All components and equipment used in hazardous locations must be from among the equipment listed by a nationally recognized testing laboratory, such as Underwriters Laboratories, Inc. (uL), or FMC.
3. **Marking** - Approved equipment must be marked to show the class, group, and operating temperature or temperature range referenced to a 40 degree C ambient. Install approved equipment in accordance with the requirements of the NEC.
4. **Intrinsically Safe Systems** - Permit intrinsically safe apparatus and wiring in any hazardous (classified) location for which it is approved.
5. **Maintenance** - Maintain wiring components and equipment as explosion-proof. There must be no loose or missing screws, gaskets, threaded connections, seals, or other impairments to tight conditions.

XII. WET LOCATIONS

1. **Requirement** - Only the following type electrical systems are permissible for use in wet areas where there is danger of electrical shock:
    a. Ground-Fault Circuit Interrupter. Electrical circuits for lighting and hand tools must not exceed 120 volts and must be protected by UL-listed ground-fault circuit interrupters installed in conformance with the manufacturer's specifications, and tested before beginning work.
    b. Stationary Portable Equipment. Connect stationary portable electrically powered equipment, such as pumps, heaters, blowers, welders, transformers, etc., to a circuit protected by a ground-fault circuit interrupter or effectively ground the equipment with both an internal grounding system and a visible flexible copper ground wire.
    c. Substitute Equipment. Whenever practical, substitute air, battery, or hydraulically powered tools for electrically powered tools.
2. **Receptacles** - Receptacles and cord connectors used in damp or wet locations must be designed for use in wet or damp locations and, unless approved for submersion, must not be allowed to lie in water.

XIII. BATTERY CHARGING

1. **Requirement** - Restrict battery charging operations to well-ventilated areas designated for that purpose. Post signs with the following wording (or equivalent) at all entrances when explosive gases are produced: BATTERY ROOM - NO SMOKING OR OPEN FLAME WITHIN 25 FEET

2. **Ventilation** - Ventilation must be adequate to ensure diffusion of the battery gases and prevent accumulation of an explosive mixture.
3. **Vented Batteries** - Locate non seal-type batteries in enclosures with outside vents or in well-ventilated rooms, arranged to prevent the escape of fumes, gases, or electrolyte spray or liquid into other areas. Keep safety vent caps in place during charging.
4. **Racks and Trays -** Racks and trays must be of sufficient strength and treated with an electrolyte resistive coating.
5. **Housekeeping** - Keep battery storage and charging areas free of combustible materials and scrap. Promptly clean up and dispose of acid or corrosive spills.
6. **Protective Equipment -** Provide face shields, goggles, aprons, and rubber gloves for employees who handle acids or recharging batteries.
7. **First Aid** - Provide facilities for quick emergency drenching of the eyes and body within 25 feet of a battery charging area.

IX. TRAINING REQUIREMENTS FOR ELECTRICALLY QUALIFIED PERSONS

1. **General** - NFPA 70E, 2015 Edition, and OSHA 29 CFR 1910.269 contains references for training requirements. A person must have all the training listed below to be a qualified person.
    a. Required training must be of classroom and on-the-job training.
    b. Qualified persons must be trained in and familiar with Safety-Related Work Practices, safety procedures, and other safety requirements pertaining to their work. Qualified persons must be trained in First Aid and CPR and be familiar with applicable emergency procedures. They must be trained in any other safety practices, including those not specifically addressed in this section such as confined space entry, manhole and pole-top rescue, fall protection, personal protective equipment, etc.
    c. Qualified persons must be trained and knowledgeable in Job Safety Analysis (JSA). This training and knowledge includes recognizing work hazards, doing the work safely, writing a JSA, and communicating hazards and safety work practices to fellow employees.
    d. Qualified persons must be trained and knowledgeable in the construction, operation, and maintenance of equipment and specific work methods. They must be trained to recognize and avoid hazards with respect to equipment or work methods and must be familiar with applicable codes and standards. They shall be familiar with the proper use of special precautionary techniques, personal protective equipment, insulating and shielding materials, and insulated tools and test equipment.
2. **Unqualified employee Training requirements** – Unqualified employees working in areas with potential electrical shock but are not qualified persons shall be trained and familiar with electrical related work practices in general and related to their respective job assignment. In addition unqualified personnel will be trained on safe work clearances when working around live energized conductors.
3. **Additional Training Required** - Qualified persons permitted to work within limited approach boundaries (Table 4.1) of exposed conductors and parts must, at a minimum, be additionally trained in all of the following:
    a. Skills and techniques necessary to distinguish exposed energized parts from other parts.

b. Skills and techniques necessary to determine the nominal voltage of exposed energized parts. These skills and techniques include those necessary to safely use high and low-voltage meters, test instruments, and personal protective equipment while performing measurements and testing.

c. The approach distances specified in Table 4.1 and corresponding voltages to which the qualified person will be exposed. (Post Table 4.1 in the Electric Shop and hand it out to each team member before beginning work on a project that involves work near exposed energized lines or other equipment.)

d. The decision-making process to determine the degree and extent of the hazard and the personal protective equipment necessary to perform the task safely. For example, clothing that would increase injury by fire is not permitted. Clothing made of acetate, nylon, polyester, and rayon is prohibited. Refer to OSHA 29 CFR 1910.269 on apparel.

e. Lock Out/Tag Out and clearance procedures of HS B016, Lock Out Tag Out Policy

4. **In-Training** - A unqualified person who is undergoing on-the-job training and who, in the course of this training, has demonstrated the ability to perform specific duties safely at his or her level of training, and is under the direct supervision of a qualified person, is considered a qualified person for the performance of those specific duties only. For qualified persons, Strategic Construction Solutions must determine by regular supervision and inspections of the employee's work and his/her on-the-job work practices, at least annually, that each qualified person is complying with the safety-related-work practices required.

5. **Training Documentation** - Strategic Construction Solutions must generate and maintain written documentation that each employee has received the required training. Strategic Construction Solutions must verify that the training has been accomplished and is current. The documentation must contain the employee's name, the training he/she has received, and dates of training. Employee must demonstrate their competence by their proficiency in safety-on-the-job and work practices. Maintain training records in the employee's training file for the duration of employment. Employment records that indicate an employee has received the required training are an acceptable means of meeting this requirement.

6. ***An employee must receive additional training (or retraining) under any of the following conditions***:

a. If supervision and/or annual inspections of the employees work and on- the-job, safety-related work practices indicate the employee is not knowledgeable or complying with the requirements of this section.

b. If new technology, new type equipment, or changes in procedures dictate the use of safety-related work practices that are different from those which the employee would normally use.

c. If the worker must use safety-related practices not normally used during normal job duties.

d. If the worker has not performed this specific task within 1 year or feels a need for additional training to perform the job safely.

e. If the worker's other qualifications have expired, such as First Aid and CPR.

Note: An employee who performs a task less than once a year must receive hazard retraining before the employee may perform the task again. Retraining may be done during the JSA, but must also include a jobsite visit to discuss hazards. Performing a task less than once a year is not considered a part of normal job duties.

REVISION DATE	REVIEW DATE	REVISION NUMBER	REVISION COMMENTS	AUTHOR
12FEB2016	12FEB2017	1	Reformatted and edited document	K. Rodriguez
09/09/2016	09/09/2016	1.1	Logo Change from SCS to Strategic Construction Solutions	Bill Oswald

HSE MANUAL

SECTION #HS B008

Fall Protection/Working from Heights Policy

Revision 3.1_09SEP2016

I. SCOPE

1. Strategic Construction Solutions has implemented this policy to establish minimum requirements for practices and procedures to protect employees from hazards of falls when working in or from elevated work areas.
2. This policy applies to all Strategic Construction Solutions employees work sites, i.e., offices, client job sites, etc., where field construction related activities involve exposure to heights greater than or equal to (4) four feet exist. Strategic Construction Solutions has chosen to follow a (4) four foot high rule for all applications of fall protection.

II. PLAN CONTENT

1. **Anchorage** -means a secure point of attachment for lifelines, lanyards, or deceleration devices that is capable of supporting 5,000 lbs. per employee or two times the intended impact load, whichever is greater, or for a positioning system, 3,000 lbs. without failure.
2. **Aerial Personnel Lift -** Mechanical device that lifts personnel to heights in a work basket.
3. **Approved** - means, for the purpose of this section, authorized by the Director of Safety, tested and certified by the manufacturer or any recognized national testing laboratory to possess the strength requirements specified in this section.
4. **Catenary Line** – see Horizontal Lifeline.
5. **Competent Person** - means an individual knowledgeable (through experience and/or training) of fall protection equipment, including the manufacturer's recommendations and instructions for the proper use, inspection, and maintenance; who is capable of identifying existing and potential fall hazards; who has the authority to take prompt corrective action to eliminate those hazards; and who is knowledgeable of the rules contained in this section regarding the erection, use, inspection, and maintenance of fall protection equipment and systems.
6. **Controlled Access Zone** - means an area in which certain work may take place without the use of guardrail systems, personal fall arrest systems, or safety net systems and access to the zone is controlled.
7. **Deceleration Device** - means a device manufactured (fall) shock-absorbing device whereby the forces of the fall are rapidly reduced to meet acceptable levels.
8. **Drop Line** - means a vertical lifeline secured to an upper anchorage for the purpose of attaching a lanyard or device.
9. **Fall Arrest System (Personal)** - means the use of multiple, approved safety equipment components such as body harnesses, shock absorbing lanyards, deceleration devices, drop lines, horizontal and/or vertical lifelines and anchorages, interconnected and rigged to one's body as to arrest a free fall.
10. **Fall Protection Work Plan** - means a written planning document in which the employer identifies areas in the work area where a fall hazard of six (6) feet or greater exists, whereby conventional Fall Restraint and Fall Arrest Systems cannot be utilized.
11. **Fall Restraint System** - means an approved device and any necessary components that function together to restrain an employee in such a manner as to prevent that employee from falling to a lower level.

12. **Fall Distance** - means the actual distance from the employee's work platform (area) to the level where a fall would stop (ground level or otherwise).
13. **Full Body Harness** - means a configuration of connection straps to distribute a fall arresting force over at least the thighs, shoulders and pelvis, with provisions for attaching a lanyard, lifeline, positioning rings, or deceleration devices.
14. **Full Body Harness System** - means a Class III full body harness and shock absorbing lanyard attached to an anchorage or attached to a horizontal or vertical lifeline which is properly secured to an anchorage(s) capable of withstanding the forces specified in the applicable sections.
15. **Hardware -** means snap hooks, D-rings, buckles, carabineers, and adjusters used to attach the components of a fall protection system together.
16. **Holes (floor, roof or walking surface)-** means any opening in the floor greater than two inches whereby falling objects or an employee fall equal to, or greater than (6) six feet is possible.
17. **Horizontal Lifeline** - means an approved rail, rope, or synthetic cable installed in a horizontal plane between two anchorages and used for attachment of an employee's lanyard or lifeline device while moving horizontally.
18. **Lanyard** - means a flexible line of webbing, rope or cable (usually in (2) two, (4) four or (6) six foot lengths) used to secure a harness to a lifeline or an anchorage point.
19. **Leading Edge** - means the advancing edge of a floor or roof, where a fall of more than (6) six feet is possible to the ground or to another level.
20. **Lifeline (Vertical or Horizontal)** - means an approved vertical line from a fixed overhead anchorage or horizontal line between two horizontal anchorages, independent of walking or working surfaces, to which a lanyard or device is secured.
21. **Restraint Line** - means a line from a fixed anchorage or between two anchorages to which an employee is secured in such a way as to restrict the employee from reaching a point where falling to a lower level is possible.
22. **Shock Absorbing Lanyard** - means a flexible line of webbing or rope used to secure a harness to a lifeline or anchorage point that has an integral shock absorber of either a rip-stitch or retractable configuration.
23. **Snap hook** - means a locking hook at the end of a lanyard or restraining/positioning line that has a double-action locking mechanism intended to eliminate unintentional unhooking from the D-ring of a body harness. Non-locking snap hooks are prohibited.
24. **Standard Guardrail** - means a top rail at 42 inches high (plus or minus (3) three inches), a mid-rail installed midway the top edge of the guardrail system and the surface.
25. **Toe board** - means a barrier at the base of the guardrail system to prevent material and objects from falling off the surface. They are at least four (4) inches of nominal height with no less than one (1) inch clearance from the surface.
26. **Unprotected Sides and Edges -** means any side or edge (except at entrances to points of access) of a floor, roof, ramp, or runway where there is no wall or guardrail system.
27. **Walking/Working Surface -** means for the purpose of this section, any area whose dimensions are 45 inches or greater in all directions through which employees pass or conduct work, and can include scaffolding and aerial lifts regardless of surface dimensions.

28. **Wall Opening -** means a gap in a wall where the outside bottom edge is (6) six feet or more above lower levels, and the inside bottom edge (e.g. parapet wall) is less than 39 inches above the walking/working surface.
29. **Work Area** - means that portion of a walking/working surface where work activities are being performed.

III. TRAINING

1. Scaffold User Training
    a. The following topics shall be covered in scaffold user training:
        i. Hazard recognition and control
        ii. Fall protection equipment. Users of fall protection equipment will be trained on fall hazards of the work being performed and the correct procedures for erecting, maintaining, disassembling, and inspecting fall protection equipment. Fall protection systems including fall arrest systems, positioning device systems and warning line systems
        iii. Ladder use
        iv. Falling object protection
        v. Electrical hazards
        vi. Scaffold loading
        vii. Written examination
2. Aerial Lift Operators
    a. Aerial lift operators are required to have completed the following training:
        i. Scaffold user training
        ii. The aerial lift Physical Hazard Data sheet review
        iii. Review of the specific manufacturer's operating instructions
        iv. Review (or have explained by a Qualified Person) of all decals, warnings and instructions displayed on the aerial lift
3. Fall Protection Training Program
    a. Thorough training in the selection and use of personal fall arrest systems is imperative. Employees must be trained by a competent person in the safe use of the fall protection system.
    b. Employees must be periodically re-trained. Circumstances where retraining is required include, but are not limited to include, changes in the workplace which render previous training obsolete, changes in the types of fall protection systems, or inadequacies in an affected employee's knowledge or use of fall protection systems.
    c. Training documentation shall be provided and maintained to verify the employee trained.

IV. HAZARDS

1. Fall Hazards

    a. Where a worker could fall a specific distance as described in the applicable legislation for the area in which the work is being performed, or is exposed to an unusual risk of injury, and is not protected by guardrails, fall protection must be worn. Strategic Construction Solutions recognizes that working at elevated heights poses a higher risk of injury in the event of a fall. In situations where guardrails are not effective, or could cause greater risk if they were in place, fall protection in the form of a fall arrest system needs to be used.

    Note: *Permanent facilities are covered in applicable legislation for the area in which you are working. Guardrails are required in facilities on every open-sided floor or platform more than (4) four feet (1.2 meters) above the adjacent floor or ground level. Whenever performance of any task would allow a worker to fall a distance of (4) four feet (1.2 meters) or more for general/maintenance tasks, or any distance where the likelihood of a serious or fatal injury exists, the hazards of falling must be identified, evaluated and controlled based on the hierarchy of controls. Ensure you are aware of the legislative requirements for the area in which the work is to take place.*

    b. Falls and subsequent injury may occur because of:

        i. Lack of fixed, guarded, work platforms

        ii. Inadequate lighting or space to conduct tasks

        iii. Difficult access because of the proximity of other equipment

        iv. Lack of a solid base for portable ladders

        v. Carrying tools and equipment to elevated locations

        vi. Inadequate training

        vii. Improper use of fall protection equipment

2. Engineering Controls

    a. Facility or Field Management shall have a competent person determine if engineering controls can eliminate or lessen the hazard of the work area or job site. Engineering controls shall be provided where possible to minimize fall hazards.

V. REQUIREMENTS

1. Fall Protection

    Strategic Construction Solutions recognizes that working at elevated heights poses a higher risk of injury in the event of a fall. In situations where guardrails are not effective, or could cause greater risk if they were in place, fall protection in the form of a fall arrest system needs to be used. This section outlines the requirements of a fall arrest system that will need to be used.

    Note: *Guardrails are required in facilities on every open-sided floor or platform more than (4) four feet above the adjacent floor or ground level.*

    a. Fall Arrest System – General Requirements

i. The back D ring between the shoulders should be used for fall arrest. The front chest ring may be used for ladder climbing systems, and the side D rings are for positioning or restraint only.

ii. Do not use a lanyard with a knot in the lanyard. Do not connect one lanyard to another. Do not use hooks or connectors that will not completely close over the anchor.

iii. Personal fall arrest systems and their use shall comply with the provisions set forth below. Body belts are not acceptable as part of a personal fall arrest system.

NOTE: *The use of a body belt in a positioning device system is acceptable.*

iv. Connectors shall be drop forged, pressed or formed steel, or made of equivalent materials and approved for use as fall protection. Connectors shall have a corrosion-resistant finish, and all surfaces and edges shall be smooth to prevent damage to interfacing parts of the system.

v. Snap hooks shall be:

   a. Sized for compatibility with the member to which they are connected

   b. Designed in order to prevent their disengagement through contact with the connecting member

   c. Used to connect to a horizontal lifeline, which may become a vertical lifeline, on suspended scaffolds (or similar work platforms). Snap hooks shall be capable of locking in both directions

vi. Horizontal lifelines shall be designed, installed, and used under the supervision of a qualified person, as part of a complete personal fall arrest system, which maintains a safety factor of at least two.

vii. Lanyards and vertical lifelines shall have a minimum breaking strength of 5,000 pounds.

viii. Lifelines shall be protected against being cut or abraded.

ix. Anchorages used for attachment of personal fall arrest equipment shall be independent of any anchorage being used to support or suspend platforms and be capable of supporting at least 5,000 pounds per employee attached, or shall be designed, installed, and used as follows:

   a. As part of a complete personal fall arrest system, which maintains a safety factor of at least two; and

   b. Under the supervision of a qualified person

x. Personal fall arrest systems, when stopping a fall, shall be rigged such that an employee can neither free fall more than (4) four feet nor contact any lower level.

xi. Full body harnesses, and components shall be used only for employee protection and not to hoist materials.

xii. Personal fall arrest systems and components subjected to impact loading shall be immediately removed from service and shall not be used again for employee protection until inspected and determined by a competent person to be undamaged and suitable for reuse.

xiii. Preplan to provide for prompt rescue of employees in the event of a fall or ensure that employees are able to rescue themselves.

xiv. Personal fall arrest systems shall be inspected prior to each use for wear, damage and other deterioration, and defective components shall be removed from service. Inspections should follow the manufacturers' recommendations but at a minimum, the inspection should evaluate the conditions of D rings, buckles, keepers, back pads, webbing, stitching and labels.

b. Positioning Device Systems

Positioning device systems and their use shall conform to the following provisions:

i. Positioning devices shall be rigged such that an employee cannot free fall more than (2) two feet.

ii. Positioning devices shall be secured to an anchorage capable of supporting at least twice the potential impact load of an employee's fall or 3,000 pounds, whichever is greater.

iii. Connecting assemblies shall have a minimum tensile strength of 5,000 pounds.

iv. Snap hooks shall be:

a. Sized for compatibility with the member to which they are connected

b. Designed in order to prevent their disengagement through contact with the connecting member

v. Positioning device systems shall be inspected prior to each use for wear, damage, and other deterioration and defective components shall be removed from service.

vi. Body belts, harnesses, and components shall be used only for employee protection and not to hoist materials.

c. Warning Line Systems

Warning line systems and their use shall comply with the following provisions:

i. The warning line shall be erected around all sides of the roof work area.

ii. When mechanical equipment is not being used, the warning line shall be erected not less than (6) six feet (1.8 m) from the roof edge.

iii. When mechanical equipment is being used, the warning line shall be erected not less than (6) six 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.

iv. Points of access, materials handling areas, storage areas, and hoisting areas shall be connected to the work area by an access path formed by two warning lines.

v. 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, shall be placed across the path at the point where the path intersects the warning line erected around the work area, or the path shall be offset such that a person cannot walk directly into the work area.

vi. Warning lines shall consist of ropes, wires, or chains, and supporting stanchions erected as follows:

a. The rope, wire, or chain shall be flagged at not more than (6) six feet intervals with high-visibility material.

b. The rope, wire, or chain shall be rigged and supported in such a way that its lowest point (including sag) is no less than 34 inches from the walking/working surface and its highest point is no more than 39 inches from the walking/working surface.

c. After being erected, with the rope, wire, or chain attached, stanchions shall be capable of resisting, without tipping over, a force of at least 16 pounds applied horizontally against the stanchion, 30 inches above the walking/working surface, perpendicular to the warning line, and in the direction of the floor, roof, or platform edge.

d. The rope, wire, or chain shall have a minimum tensile strength of 500 pounds and after being attached to the stanchions, shall be capable of supporting, without breaking, the loads applied to the stanchions above.

e. The line shall be attached at each stanchion in such a way that pulling on one section of the line between stanchions will not result in slack being taken up in adjacent sections before the stanchion tips over.

vii. No employee shall be allowed in the area between a roof edge and a warning line unless a personal fall arrest system is used.

viii. Mechanical equipment on roofs shall be used or stored only in areas where employees are protected by a warning line system, guardrail system, or personal fall arrest system.

d. Training

Users of fall protection equipment will be trained on fall hazards of the work being performed and the correct procedures for erecting, maintaining, disassembling, and inspecting fall protection equipment.

2. Scaffold Use

Ensure all scaffold users have received user training.

a. Weather Conditions

Elevated Work Platforms (EWP) must not be used in storms or high wind conditions. Areas of scaffolds affected by snow or ice cannot be used until the snow or ice has been removed and the surface has been sanded or textured to eliminate slips. These areas need to be inspected and approved for use by a competent person.

b. Inspections

Scaffolds and scaffold components shall be inspected for visible defects by a competent person before initial use and after any occurrence, which could affect a scaffold's structural integrity.

Scaffolds and scaffold components shall be inspected for visible defects by a competent person before each shift's use. The tag will be placed adjacent to the scaffold access ladder. Do not use a scaffold that has not been inspected by a competent person for that work shift.

c. Fall Protection

   i. Fall protection in the form of guardrails or fall arrest systems is required whenever erecting, dismantling or using scaffolding. Strategic Construction Solutions requires the use of fall protection when working on scaffolds greater than (6) six feet in height. Height is measured from the ground to the scaffold platform.

   ii. Strategic Construction Solutions will rely on a guardrail system as the primary means of fall protection during scaffold use. If guardrails are not feasible, a fall arrest system will be used. Contact Health & Safety for guidance on alternative protective systems.

   iii. Fall protection is needed on walkways meeting the height requirements specified above.

   iv. The use of fall protection during construction or when dismantling a scaffold may present problems. Contact Health & Safety for recommendations for anchorage points.

d. Access

   i. Ensure shoes are free of debris, oily material, etc. before climbing or working

   ii. Do not carry materials as you climb. Keep both hands on the side rails. Hoist or have materials lifted to the platform.

   iii. Use an access ladder or equivalent for safe access

   iv. Do not climb on braces, cross-braces or guard rails

   v. Maintain a clear path of travel to avoid tripping hazard

e. Construction-information for Scaffold Users

   i. Erecting, moving, dismantling or altering a scaffold may only be performed under the supervision and direction of a trained, competent, qualified person. These actions may only be performed by trained employees selected by the competent person.

   ii. Footing or anchorage shall be sound, rigid and capable of carrying the maximum intended load.

   iii. Do not use unstable objects to support scaffolds or planks. Footing must be sound. Before use, the scaffold must be level, plumb and rigid.

   iv. Scaffold poles, legs or uprights must be plumb and braced securely to prevent swaying or displacement.

   v. Install guardrails and toe boards on all open sides and ends.

   vi. Ensure guardrail height is between 38" and 42" from the base of the work platform. Additional heights must be approved by Health & Safety prior to construction. Guardrails are required on the front edge if the front edge of any platform is more than 12” from the face of work.

   vii. Mid-rails should be approximately mid-way between top rail platform and toe boards. Toe boards must be a minimum height of 4" and must be secured. When the potential exists that workers may be under or walk under the scaffold area, a mesh screen must be added that extends from the top end of the guardrail to the working surface and span the full distance between uprights.

viii. Do not alter the scaffold.

ix. Do not use any scaffold component damaged or weakened beyond the required listed capacity. Questionable components should be immediately repaired or replaced, braced to meet rated capacity, or removed from service until repaired.

x. All planking shall be scaffold grade or equivalent.

xi. All planking and platforms, unless otherwise cleated, restrained by hooks (or an equivalent means), must extend over the supports by the following lengths:

a. For platforms less than 10 feet in length, the planks must extend between 6 -12" over the supports.

b. For platforms more than 10 feet in length, the planks must extend 6–18" over the supports.

xii. If platforms overlap, they must overlap not less than 12" and must occur over supports, unless restrained to prevent movement.

xiii. Abutted planks (continuous run) must rest on separate supports unless designed to rest on common supports (e.g. "hooked").

f. General Use

i. Do not permit debris or materials to accumulate on platforms.

ii. Overhead and falling object protection is required for workers on scaffolds. (Hard hats are always required while working on or around scaffolds).

iii. Makeshift devices (barrels, boxes, etc.) shall not be used to increase the working height of a scaffold.

iv. Ladders shall not be used to increase the working height of a scaffold (Exception: Large area scaffolds are permitted in certain conditions). See definition of Large Area Scaffold and contact Health & Safety.

v. Never alter or move a scaffold horizontally while employees are on them, unless they have been designed by a registered professional engineer specifically for such movement.

vi. Ensure wheels of any rolling scaffold are locked prior to use.

vii. Ensure the walking/working platform is fully planked.

viii. Ladders may not be used as work platforms unless each affected employee uses fall protection.

ix. Shield suspension ropes from heat producing processes.

g. Electrical Hazards

Do not erect, use, dismantle, alter or move scaffolds or have any conductive material handled on them that might come closer to exposed and energized power lines than as follows:

Voltage	Minimum Distance
<300 (Insulated)	3 feet
>300-50,000 (Ins/Un-insulated)	10 feet
> 50,000 (Ins/Un-insulated)	10 feet + 0.4 in for each 1KV over 50,000 volts)

NOTE: *Scaffolds may be closer to power lines if the utility company or other qualified person is contacted and the power lines have been de-energized or relocated to prevent accidental contact.*

i. Use tag lines when a swing load will be hoisted onto or near scaffolds.

ii. Contact Health & Safety if welding or burning will be conducted while on a scaffold.

iii. GFCIs should be used when operating electrical hand tools on scaffolds.

h. Scaffold Loading

Employees must ensure that the maximum intended load capacity of the scaffold in use is not exceeded.

Definition of:

i. Maximum Intended Load (MIL) - 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.

ii. Capacity - As applied to the scope of this Standard, each scaffold and scaffold component shall be capable of supporting, without failure, its own weight and at least (4) four times the maximum intended load applied or transmitted to it. (This is an inherent property of each manufactured component and must be met by the manufacturer.)

iii. Design - Scaffolds shall be designed by a qualified person and shall be constructed and loaded in accordance with that design.

iv. Loading - To avoid overloading a scaffold, the user must understand two factors to properly select and use a scaffold. They are: the maximum intended load and the rated load carrying capacity of the scaffold. Scaffolds are typically rated as light, medium and heavy duty:

v.

Rating	Rated Load Capacity
Light Duty	25lbs per sq./ft.
Medium Duty	50 lbs. per sq./ft.
Heavy Duty	75 lbs. per sq./ft.

i. Access

i. Safe and adequate access to the scaffold must be provided. Various forms are available: ladders, stairs, ramps, walkways, direct access from a structure, integral rungs, etc. Cross braces cannot be used for access. An access method must be provided for any platform more than (2) two feet above or below adjacent levels.

ii. Fabricated frame scaffolds typically have integral prefabricated access. This access must meet the following requirements:

a. Rungs must be at least 8 inches long.

b. Rungs must be uniformly spaced except where frame sections connect and can have a maximum spacing between them of 16.75 inches.

iii. Rest platforms must be provided every 35 feet.

iv. Ladders may not be used as work platforms unless each affected employee uses fall protection.

v. Hook-on and attachable ladders shall be specifically designed for use with the type of scaffold and meet the following requirements:

a. Rungs must be at least 11.5 inches long.

b. Rungs must be uniformly spaced and can have a maximum spacing between them of 16.75 inches.

c. The bottom step must be not more than 24 inches off the floor.

d. Rest platforms must be provided every 35 feet.

e. Ladders must be positioned so that they do not tip the scaffold.

f. Ladders may not be used as work platforms unless each affected employee uses fall protection.

vi. For stairway-type ladders, contact Health & Safety.

3. Platform

a. General - Scaffold platforms come in various forms and can generally be classified into three categories: solid wood, manufactured, or fabricated.

i. If solid wood planking is used, it must be scaffold grade lumber. This is noted by an American Lumber Standards Committee grading stamp on the plank indicating its suitability for scaffolds (e.g. "Scaffold Plank", "Scaf Plk", etc.).

ii. Manufactured is usually a laminated veneer, similar to plywood, except all grains run parallel to the length. Follow manufacturer's specifications for loading, testing, care, use, handling, storage and inspection.

iii. Fabricated platforms can be all metal or wood with metal framing.

b. Platform use guidelines - The following provides general standards for scaffold platforms:

i. Each level where work is conducted (work platforms) must be fully planked for full width with edges close together (no greater than 1" gap).

ii. All planking must be scaffold grade or better.

iii. Platforms and walkways must be at least 18" wide. (If a narrower width is necessary, guard rails and/or a personal fall arrest system (PFAS) are necessary.)

iv. The front edge of all platforms must be 14" or less from the work face (unless guard rails or a PFAS is used).

v. All planking or platforms, unless cleated, restrained by hooks or equivalent, must extend the following lengths over supports:

Platform Length	Extension Over Supports
<10'	6-12”
>10'	6-18”

vi. Abutted planks (or continuous run of planks) shall rest on separate supports unless designed to rest on common supports (e.g. "hooked").

vii. Overlapped planks shall occur over supports and cannot overlap less than 12" (unless nailed together or otherwise restrained to prevent movement).

viii. Do not intermix components of different manufacturers unless authorized by a competent person and components can fit together without force or modification. Structural integrity must be maintained.

ix. Do not use components of dissimilar metals.

x. Remove damaged or weakened planks immediately.

xi. Remove or clean-up, etc. any spills or slippery conditions (chemicals, snow, ice, etc.).

xii. Do not paint or otherwise obscure the platform surface. This could hide defects.

c. Deflection

i. Platforms shall not deflect more than 1/60 of the span when loaded. For example, if a seven-foot (7') plank is used on a standard six-foot (6') span and is loaded at the designed load (250-500 lbs.), it should not deflect more than 1.2".

6 Feet = 72" X 1/60 = 1.2"

ii. Approximately one inch is clearly visible through a visual observation. If deflection is greater, do not use the plank.

d. Inspections

Inspect each platform for defects or damage that could compromise its integrity.

i. Wood

a. Split ends that could cause weakness

b. Damage by fractures or sawed cuts, splintering, rails, concrete or plaster contamination

c. Spills: oil, corrosive or acidic liquids

d. Paint

e. Warping:

i. Bow - Deflection from flat end to end

ii. Crook - Edgewise deviation

iii. Cup - Deviation in the face side to side (forming a "cup")

iv. Twist - Deviation from flat, creating curl or spiral

ii. Metal

Review manufacturer's inspection specification. Evaluate for:

a. Bending

b. Cracks

c. Buckles

d. Corrosion

e. Broken/Missing Hooks

f. Gouges

iii. Scaffold Inspections

a. The dynamic nature of our work environmental produces many new, daily, variable, unanticipated hazards that can create a risk to employees working on elevated work platforms. For this reason, it is necessary to be prepared to take rapid action in the event a hazard is identified. Two steps will minimize the likelihood that dynamic site hazards will create a risk to employees:

i. Daily Inspections

ii. Corrective Action

b. Taking corrective action quickly can help minimize hazards and job delays. Action can include, depending on the nature, exposure, likelihood of risk to the employees working on an Elevated Work Platform (EWP):

i. Speaking to the client, other contractors, etc. to control or eliminate the hazard.

ii. Controlling or eliminating the hazard.

iii. If no action will control or eliminate the hazard, stopping work immediately.

4. Guard Rail System

a. Components

The guardrail system consists of a top and mid-rail.

i. Rail Height:

a. Top – 38”-42"

b. Mid - Approximately mid-way between top edge of top rail and the platform surface

ii. Cross Braces as Guard Rails: Cross braces are an acceptable alternative to standard top and mid-rails in field operations when they meet the following criteria:

a. Top Rail - Cross point is 38-48" above work platform

b. Mid Rail - Cross point is 20-30" above work platform

c. Cross brace end points at the upright must not be more than 48" apart

b. Other Protective System Components

i. Screens/Mesh - When screens or mesh are used they must:

a. Extend from the top edge of the guard rail to the platform surface

b. Extend fully between support members

ii. Intermediate Members (balusters or rails) must:

a. Extend from the top edge of the guardrail to the platform surface

b. Be spaced no more than 19 inches apart

iii. Solid Panels must:

a. Extend from the top edge of the guardrail to the platform surface

iv. Manila or Plastic Rope:

a. When rope is used as a substitute for standard guardrails, it shall be inspected by a competent person as often as necessary, but at least daily, to ensure it continues to meet the strength requirements of 200 lbs. applied as a horizontal or downward force.

v. Design

a. Guard rail system components must be specifically designed for scaffold use. Only those components supplied by the manufacturer or rental company may be used. Contact Health & Safety if an alternative is being considered.

vi. Guard Rail Surface

a. Must be designed to prevent injuries from lacerations

b. Must be smooth and free of defects such as burrs that could cause punctures, lacerations, snagging of clothing, etc.

vii. Prohibitions

a. Rail Ends - Rail ends must not overhang the terminal post unless the overhang does not create a projection hazard.

b. Steel/Plastic Banding - Shall not be used as a guardrail component.

5. Falling Object Protection

a. Employees working on scaffolds shall be protected from falling objects through the installation of toe boards, screens or guardrail systems, or through the erection of debris nets, catch platforms, or canopy structures that contain or deflect the falling objects.

b. Large objects shall be re-located to prevent the fall hazard.

c. Areas below scaffolds shall be protected through the installation of toe boards screens or guardrail systems on the scaffolds, or by barricading the area. If toe boards are used, materials or tools may not be stacked above the height of the toe boards.

6. Aerial Lifts

a. Strategic Construction Solutions is committed to ensuring a safe work environment for our employees. To accomplish this, we have developed an Aerial Lift Standard (HS C020) to ensure that the equipment is complete, functional and used in compliance with regulatory standards and provides a safe elevated work platform for employees.

b. Rental Agreement

a. Please notify the equipment Rental or Leasing Company of the following information when arranging for rental or delivery. Strategic Construction Solutions considers the equipment incomplete if defects, malfunctions, etc. are found during the pre-start inspection performed by Strategic Construction Solutions. We will also consider the equipment incomplete if an up-to-date Operating Manual does not accompany the equipment.

c. Receipt of Equipment

Prior to operation of the equipment, ensure that items specified below are satisfied. If they are not, the equipment cannot be used.

i. Operating Manual - Verify that the Operating Manual accompanies the equipment. Review the manufacturers' operating instructions, user safety rules and other pertinent information contained in the Operating Manual.

ii. Inspection - Inspect the unit to ensure the equipment is sound and fully functional.

iii. Training - Ensure that the training is received by the AL operator and others who will perform work from the aerial lift. All employees who may operate the equipment must receive the training. Only those who received Elevated Work Platform (EWP) Users and aerial lift specific operator training are authorized to operate the equipment.

iv. Application - Ensure that the equipment will be used within the intended application or specified by the manufacturer.

v. Fall Protection - Appropriate fall protection (equipment and personnel) is available and used. A full body harness and lanyard are required on all aerial lifts.

vi. Work Area Inspection - Prior to work or movement of the aerial lift, inspect the work area for the following:

a. Drop-offs or holes

b. Bumps and floor obstructions

c. Debris

d. Overhead obstructions and electrical lines

e. Hazardous atmosphere - ensure that a flammable atmosphere doesn't exist and won't develop

f. Inadequate surface and support to withstand all load forces imposed by aerial lifts in all operating configurations

g. Wind and weather conditions

h. Presence of unauthorized persons

i. Other moving equipment in the area

j. Adequate ventilation for indoor operation (if used indoors)

k. Other possible unsafe conditions

vii. Take appropriate action to control the hazards identified in the work area inspection. If a hazard can't be eliminated or controlled, contact Health & Safety for further direction.

d. Pre-Start Inspections

i. Before each use (by shift) conduct a visual inspection and/or functional test of the following:

a. Operating and emergency controls

b. Safety devices

c. Personal protective devices, including fall protection

d. Air, hydraulic and fuel system for leaks
e. Cables and wiring harness
f. Loose or missing parts
g. Tires and wheels
h. Placards, warnings, control markings and operating and safety manuals
i. Outriggers, stabilizers, extendible axles and other structures
j. Guardrail system
k. Items specified by the manufacturer

ii. Review the Operating Manual to understand appropriate action to evaluate each item.

iii. Adjustments/Repairs - Only Strategic Construction Solutions employees who are trained and authorized are permitted to adjust or repair an aerial lift.

iv. Defect/Malfunction Noted - If a defect, malfunction or other problem is noted during the pre-start inspection, DO NOT OPERATE the equipment. Repairs must be made prior to continuing use of the equipment.

e. Operations

The standards listed below shall be followed when operating an aerial lifts:

i. Battery Charging - Charge in a well ventilated area free of ignition sources.

ii. Elevated Traveling, Maneuvering - Aerial lifts may not be driven while elevated. They may, however, be maneuvered into position using the following guidelines. The operator shall:

a. Maintain a clear view of the path of travel
b. Maintain a safe distance from obstacles, debris, drop-offs, holes, depressions, ramps and other hazards to ensure safe elevated travel
c. Maintain a safe distance from overhead obstacles

NOTE: *Traveling to or from work areas in an elevated position is prohibited.*

iii. Entanglement - Take action to avoid creating a trip hazard from ropes, hoses, electrical cords, etc.

iv. Fall Protection - Full body harnesses and lanyards are required on all aerial lifts. Never attach the lanyard to fixed object that doesn't move with the aerial lifts. Guardrails shall be installed and access gates or openings closed, per manufacturer's instructions.

v. Footing - Maintain firm footing. Ensure trip hazards are removed from the platform. Do not sit or climb on the basket or railings.

vi. Fueling - Shut down the unit before fueling. Perform fueling in a well-ventilated area free of ignition sources.

vii. Height Increasing Methods - Makeshift devices (barrels, boxes, etc.) or ladders or protective structures (toe board, mid-rail, railings) shall not be used to increase working heights.

viii. Load Capacity - Do not exceed the rated capacity of the aerial lift.

ix. Load Distribution - Ensure that the load and its distribution on the platform and any platform extension are in accordance with the manufacturer's rated capacity for that specific configuration.

x. Misuse - Do not use the aerial lift as a crane or jack.

xi. Modifications - Modifications or alterations are not permitted.

xii. Operating Area - Do not operate the unit from a position on trucks, trailers, rail cars, floating vessels, scaffolds, unless permitted by the manufacturer.

xiii. Other Moving Equipment - When present, take precautions to prevent collision. Acceptable methods include: flagging, roping-off area, warning lights, barricading, flag person, etc.

xiv. Overhead Clearance - Ensure there is adequate clearance from overhead obstructions.

xv. Platform Positioning - Do not position against another object to steady the platform.

xvi. Power Lines - The aerial lift cannot be operated closer than the following to exposed and energized power lines:

Voltage	Minimum Distance
<300 (Insulated)	3 feet
>300-50,000 (Ins/Un-insulated)	10 feet
> 50,000 (Ins/Un-insulated)	10 feet + 0.4 in for each 1KV over 50,000 volts)

NOTE: *If work closer than the above distances is necessary, the local Utility or a qualified electrical person can de-energize or relocate the lines.*

xvii. Problems/Malfunctions - Report problems or malfunctions immediately.

xviii. Safety Devices - Do not alter or disable interlocks or other safety devices.

xix. Slopes or Inclines - The aerial platform shall not be driven on grades, side slopes or ramps exceeding those for which the aerial platform is rated by the manufacturer. See the operating manual. Set brakes and chock wheels when the aerial lift will be used on an incline or slope.

xx. Snagged Platform - If the platform or elevating assembly becomes caught, snagged or otherwise prevented from normal motion by adjacent structure or other obstacles such that control reversal does not free the platform, all personnel shall be removed from the platform before attempts are made to free the platform using ground controls.

xxi. Stability Enhancing - The outriggers, stabilizers, extendible axles, or other stability enhancing means, are used as required by the manufacturer. When stabilizers or outriggers are used, sound footing for the stabilizers and outriggers must be ensured.

xxii. Travel Speed - Under all travel conditions, the operator shall limit travel speed according to conditions of ground surface, congestion, visibility, slope, location of personnel, and other factors causing a hazard of collision or injury to personnel.

xxiii. Warnings and Instructions - Observe and follow all warnings and instructions indicated on decals, warnings and instructions displayed on the aerial lift. If obstructions must be approached, contact Health & Safety for an acceptable means to safely manage the hazard.

xxiv. Work Area - Rope off or barricade the work area where extensible and articulating boom platforms present a hazard due to pinch points while swinging the unit or from falling objects (tools, etc.). Ensure that personnel and equipment are cleared from area surrounding the aerial lift before lowering the unit.

xxv. Backing - The vehicle should have a reverse signal alarm audible above the surrounding noise level or the vehicle is to be backed up only when an observer signals that it is safe to do so.

f. Unsafe Conditions

i. Immediately cease operation and notify the supervisor if:

a. A malfunction or a suspected malfunction occurs; or

b. A potentially unsafe condition related to capacity, intended use, or safe operation occurs.

7. Equipment

Equipment purchased for fall protection shall meet the necessary OSHA, ANSI, and ASTM requirements and/or recommendations.

VI. REFERENCES

1. Safety Standards for Scaffold Use, 29 CFR 1910.28-.29.
2. Safety Standards for Scaffold Use, 29 CFR 1926.450.

REVISION DATE	REVIEW DATE	REVISION NUMBER	REVISION COMMENTS	AUTHOR
10/05/2015	10/07/2015	1	Reformatted and edited document	Bill Oswald
10/29/2015	10/29/2016	2	Reformatted and edited document	K. Stovall
15MAR2016	15MAR2016	3	Reformatted and edited document	K. Rodriguez
09/09/2016	09/09/2016	3.1	Logo Change from SCS to Strategic Construction Solutions	Bill Oswald

Attachment A

Fall Arrest Rescue Plan

OSHA standards don't specify a time rescues need to be conducted, however research indicates that suspension in a fall arrest device can result in unconsciousness, followed by death, in less than 30 minutes. The danger begins when someone is unable to move for as little as (5) five minutes. The tolerance varies greatly from person to person, but the negative effects can set in quickly. Strategic Construction Solutions requires that for each time an employee is required to use fall arrest systems this Fall Arrest Rescue Plan will be filled out.

Date:	Job description:
Location:	

ANSWER THE FOLLOWING QUESTIONS:	
Have alternatives to using fall arrest equipment been considered?	
Will the employee be able to self-rescue in the event of a fall?	
If, No what additional support will be available to assist rescue?	

List the steps that will be taken to affect a rescue.
1.
2.
3.
4.
5.
6.

LIST THE RESCUE EQUIPMENT AVAILABLE		
Equipment	Check if Available	Location of Equipment
Ladder		
Rescue pole		
Rescue rope		
Scaffold		
Lifting device		
Block & Tackle		
Other rescue equipment:		

CREW SIGNATURES REQUIRED		

Note: This plan is to be kept on site where work activity is taking place.

Attachment B

INSPECTION AND MAINTENANCE CHECKLIST FOR FALL ARREST SYSTEMS

Warnings: Always read all instructions and warnings contained on the product and packaging before using any fall protection equipment.

Inspection: All fall protection equipment should be inspected prior to each use.

Training: All workers should be trained by a Competent Person in the proper use of fall protection equipment.

Regulations: Understand all Federal, State and Local Regulations pertaining to fall protection before selecting and using the equipment.

System Only: Components that are fully compatible with one another component should be used. Fall arrest systems that are designed and tested as complete systems should be used in this way.

CLEANING

Basic care of all safety equipment will prolong the durable life of the unit and will contribute toward the performance of its vital safety function. Proper storage and maintenance after use are as important as cleaning the equipment of dirt, corrosives, or contaminants. Storage areas should be clean, dry and free of exposure to fumes or corrosive elements.

Nylon or Polyester - Remove all surface dirt with a sponge dampened in plain water. Squeeze the sponge dry. Dip the sponge in a mild solution of water and commercial soap or detergent. Work up a lather with a vigorous back and forth motion; then wipe with a clean cloth. Hang freely to dry, but away from excessive heat.

Drying - Equipment should dry thoroughly without close exposure to heat, steam, or long periods of sunlight.

AFTER A FALL OCCURS, ALL COMPONENTS OF THE FALL ARREST SYSTEM SHOULD BE REMOVED FROM SERVICE AND DESTROYED

Attachment B (continued)
INSPECTION AND MAINTENANCE CHECKLIST FOR FALL ARREST SYSTEMS

HARNESS INSPECTION

1. **Webbing** - Grasp the webbing with your hands (6) six inches to (8) eight inches apart. Bend the webbing in an inverted "U". The surface tension resulting makes damaged fibers or cuts easier to detect. Follow this procedure for the entire length of the webbing, inspecting both sides of each strap. Look for frayed edges, broken fibers, pulled stitches, cuts, burns, and chemical damage
2. **D-Rings** - Check D-rings for distortion, cracks, breaks, and rough or sharp edges. The D-ring should pivot freely.
3. **Attachment of Buckles** - Inspect for any unusual wear, frayed or cut fibers, or broken stitching of the buckle or D-ring attachments.
4. **Tongue/Grommets** - the tongue receives heavy wear from repeated buckling and unbuckling. Inspect for loose, distorted or broken grommets. Webbing should not have additional holes punched.
5. **Tongue Buckles** - Buckle tongues should be free of distortion in shape and motion. They should overlap the buckle frame and move freely back and forth in their socket. Roller should turn freely on the frame. Check for distortion or sharp edges.
6. **Friction and Mating Buckles** - Inspect the buckle for distortion. The outer bars and center bars must be straight. Pay special attention to corners and attachment point at the center bar.

Attachment B (continued)
INSPECTION AND MAINTENANCE CHECKLIST FOR FALL ARREST SYSTEMS

LANYARD INSPECTION

When inspecting lanyards, begin at one end and work to the opposite end, slowly rotating the lanyard so that the entire circumference is checked.

7. **Hardware Snaps**: Inspect closely for hook and eye distortions, cracks, corrosion, or pitted surfaces. The keeper (latch) should seat into the nose without binding and should not be distorted or obstructed. The keeper spring should exert sufficient force to firmly close the keeper. Keeper locks must prevent the keeper from opening when the keeper closes.

8. **Web Lanyard:** While bending webbing over a pipe, observe each side of the webbed lanyard. This will reveal any cuts or breaks, swelling, discoloration, cracks and charring are obvious signs of chemical or heat damage. Observe closely for any breaks in stitching.

9. **Shock Absorber Pack**: The outer portion of the pack should be examined for burn holes and tears. Stitching on areas where the pack is sewn to D rings. Belts or lanyards should be examined for loose strands, rips, and deterioration.

10. **Shock-Absorbing Lanyard:** Shock-absorbing lanyards should be examined as a web lanyard (described in Item 3 above). However, also look for the warning flag or signs of deployment. If the flag has been activated, remove this shock absorbing lanyard from service.

11. **Self-Retracting Lanyard**: Check Housing – Before every use, inspect the unit's housing for loose fasteners and bent, cracked, distorted, worn, malfunctioning or damaged parts.

Retraction and Tension: Test the lifeline retraction and tension by pulling out several feet of the lifeline and allow it to retract back into the unit. Always maintain a light tension on the lifeline as it retracts. The lifeline should pull out freely and retract all the way back into the unit. Do not use the unit if the lifeline does not retract.

12. **Lifeline:** The lifeline must be checked regularly for signs of damage. Inspect for cuts, burns, corrosion, kinks, frays or worn areas. Inspect any sewing (web lifelines) for loose, broken or damaged stitching.

13. **Braking Mechanism**: The braking mechanism must be tested by grasping the lifeline above the impact indicator and applying a sharp steady pull downward which will engage the brakes. There should be no slippage of the lifeline while the brakes are engaged, once tension is released, the brakes will disengage and the unit will return to the retractable mode. Do not use the unit if the brakes do not engage.

Attachment B (continued)

INSPECTION AND MAINTENANCE CHECKLIST FOR FALL ARREST SYSTEMS

Full Body Harness and Lanyard Inspection Report										
Inspector :						Date:				
Instructions: 1. All parts of the body harness and its attachments must be inspected for wear and damage. 2. This √ symbol is for YES or OK. This **X** symbol is for NO or REPLACE. 3. Inspect and document monthly 4. Maintain the completed inspection report so that it is readily available for review.			Harness Webbing and/or Leather	All Stitching	Rivets & Eyelets	D-Ring(s) & Buckle(s) if applicable	Lanyard & Deceleration Device	Hook Safety Latch	Certification or Data Tag
Month	Harness Serial Number	Lanyard Serial Number							
January									
February									
March									
April									
May									
June									
July									
August									
September									
October									
November									
December									

HSE MANUAL

SECTION # HS B011

Hydrogen Sulfide H_2S Awareness Policy

Revision 1.1_09SEP2016

I. SCOPE

A. Strategic Construction Solutions is committed to providing a safe and healthy work environment for our employees. The purpose of this program is to establish minimum requirements for site specific H2S safety, which will enhance safety in the occupational setting where hydrogen sulfide is present or is recognized as being potentially present.

B. This program sets forth accepted practices for Hydrogen Sulfide (H2S). This program applies to all Strategic Construction Solutions employees, temporary employees, and any contractors working for Strategic Construction Solutions. When work is performed on a non-owned or client site, the clients program shall take precedence, however, this document covers company employees and contractors and shall be used on owned premises, or when an operator's program doesn't exist or is less stringent.

II. DEFINITIONS

A. **Contingency Plan**: a site-specific written document that provides an organized plan for alerting and protecting the public within an area of exposure following the accidental release of all potentially hazardous atmospheric concentrations of hydrogen sulfide.

B. **Exposure Level**: permissible exposure level of hydrogen sulfide is 10 PPM for an 8-hour, time weighted average.

C. **Gas Detector Instrument**: An instrument/detector to measure levels of H2S. Instruments may be electronically or manually operated.

D. **Hydrogen Sulfide (H2S)**: is an extremely deadly, toxic gas that in its pure state is colorless and is heavier than air. Additionally:

1. It is the second most toxic gas known to man, ranking behind hydrogen cyanide and ahead of carbon monoxide
2. It has the odor of rotten eggs at low concentrations
3. In higher concentrations rapidly paralyzes the olfactory nerves (sense of smell)
4. Is soluble in water and is flammable and poses a definite threat of explosion

E. **Parts Per Million (PPM)**: parts of vapor or gas per million parts of contaminated air by volume.

F. **Personal H2S Monitor:** An electronic instrument worn on the person that is set to alarm at 10 PPM of H2S.

G. **Possible Locations of H2S**: While clients are required to notify Strategic Construction Solutions of known H2S locations, the majority of time H2S can be located in drilling operations, recycled drilling mud, water from sour crude wells, blowouts, tank gauging, during routine field maintenance involving hydrocarbons, tank batteries, and wells.

H. **Venting**: Is the process of discharging a material to the atmosphere through a series of piping and/or venting devices, to facilitate the proper and safe dispersion of toxic materials and to minimize personnel exposure.

III. RESPONSIBILITIES

A. Managers and Supervisors

1. Shall ensure all employees who are to be assigned to work at locations where hydrogen sulfide is known to be present, or suspected to be present in any concentration, have been trained in hydrogen sulfide safety.
2. To ensure employees have been medically approved to wear respirators and trained on the safe use of respirators, including a respirator fit test in accordance with the company Respiratory Protection Program (HS C012).
3. To ensure employees have been trained and are familiar with personal H2S monitors and gas detection instruments.
4. To have been provided with the client's safety procedures.
5. To ensure the necessary respiratory equipment to perform the work safely is available.
6. Each employee has been provided with a copy or access to review this program.

B. Employees

1. Employees are responsible to comply with this program.

IV. PROCEDURE

A. Physical Effects of Hydrogen Sulfide

1. H2S paralyzes the sense of smell. Do not rely on smell to detect H2S – Rely strictly on instruments designed to measure concentrations of H2S.
2. Hydrogen sulfide is a very dangerous and deadly gas - it is colorless and heavier than air.
3. It can accumulate in low places and in small concentrations it has a strong, pungent, somewhat distasteful odor similar to rotten eggs. In higher concentrations, it can deaden the sense of smell (olfactory nerve).
4. Exposure to certain concentrations of H2S can cause serious injury or death.

Toxic Effects of Hydrogen Sulfide

CONCENTRATION	PHYSICAL EFFECT
.01 PPM	Can smell odor.
10 PPM	Obvious and unpleasant odor. Beginning eye irritation. ANSI permissible exposure level for 8 hours (enforced by OSHA).
100 PPM	Immediately Dangerous to life or Health (IDLH) Kills smell in 3-15 minutes; may sting eyes and throat. May cause coughing and drowsiness. Possible delayed death within 48 hours.
200 PPM	Kills smell shortly, stings eyes and throat. Respiratory irritation. Death after 1-2 hours exposure.
500 PPM	Dizziness; breathing ceases in a few minutes. Need prompt rescue breathing (CPR). Self-rescue impossible because of loss of muscle control.
700 PPM	Unconscious quickly; death will result if not rescued promptly. 1000 PPM Unconscious at once, followed by death within minutes.

B. General

1. Each person entering a H2S designated location, regardless of the concentration, shall wear a personal H2S monitor that is set to alarm at 10 PPM.

C. Safe Work Procedures

1. Maintain compliance with permit requirements of Strategic Construction Solutions and any requirements by the client.
2. Verify that proper safety equipment is available, functioning properly and is utilized.
3. Check and remain aware of wind conditions and direction.
4. Perform a thorough check of the downwind area prior to the start of any potentially hazardous work activity.
5. Check for other personnel and ignition sources.
6. Ventilate work areas by venting and purging lines and vessels prior to beginning any work activities.
7. Keep all non-essential personnel away from work areas.
8. Immediately vacate the area when any H2S monitor sounds and do not re-enter without proper respiratory protection.

D. Equipment

1. The following equipment shall be provided and used as required by this program:
2. Personal H2S monitor set to alarm at permissible exposure limit of 10 PPM for OSHA 1926 requirements and 20 PPM for OSHA 1910 requirements. Fixed monitors may be present as well at the same alarm setting.
3. Portable H2S gas testing instrument, either electronic or manual pump operated, capable of testing the suspected concentrations of H2S in the system.
4. Each testing instrument must be capable of testing the suspected concentrations of H2S by using the manufacturer's recommended calibrated tube or other means of measuring the concentration of gas.
5. Testing instruments shall be calibrated periodically according to the manufacturer's recommendation, and at least annually.
6. Calibration kits with regulator for calibrating the personal monitor.
7. Calibration gas cylinder for testing the personal monitor
8. NIOSH certified self-contained breathing apparatus (air pack) with a minimum of a 30-minute air supply or airline respirator with escape SCBA should be used.
9. Full face, air supplied, positive pressure hose line respirator, with (5) five minute escape pack attached.
10. Respirator wearers requiring corrective eyewear will be fitted with spectacle kits according to the respirator manufacturer, at no expense to the employee.
11. Respirators and their components, including all fittings of hoses, shall not be interchanged, which if done, would violate the approval rating of said respirator or related equipment.

E. Medical

1. Each employee shall have completed a medical evaluation by a physician or licensed health care professional to determine the employee's ability to wear a respirator as required by the company Respiratory Protection Program (HS C012)
2. Each employee will successfully complete the medical questionnaire and examination before being allowed to be fit tested with a respirator.

F. Training

1. Employees required to work on H2S locations will be trained. Training shall consist of:
    a) Physical and chemical properties of H2S
    b) Sources of H2S
    c) Human physiology
    d) Signs and symptoms of H2S exposure, acute and chronic toxicity
    e) Symptomatology of H2S exposure
    f) Medical evaluation
    g) Work procedures
    h) Personal protective equipment required working around H2S
    i) Use of contingency plans and emergency response
    j) Burning, flaring, and venting of H2S
    k) State and federal regulatory requirement
    l) H2S release dispersion models
    m) Rescue techniques, first aid, and post exposure evaluation
    n) Use, care, and calibration of personal monitors and gas detection instruments
    o) Respirator inspections and record keeping
2. Each respirator wearer will complete Respiratory Protection training and a Respirator Fit Test, after being given a medical clearance and before entering any H2S location.
3. Employees and other personnel visiting H2S locations who will not be involved in the work shall be briefed on the following prior to entering:
    a) Site-specific sources of H2S
    b) Health hazards of H2S
    c) Routes of egress
    d) Emergency assembly areas
    e) Applicable alarm signals and
    f) The proper response in the event of an emergency

G. Rescue

1. Each employee, when working alone in a H2S designated area, shall plan and become familiar with self-escape procedures to include being aware of wind direction and obstacles to avoid when exiting the work area.

2. Employees working under the buddy system shall pre-plan an emergency rescue and/or evacuation procedure prior to commencing work, and arrange for periodic communications with his/her supervisor, and document the discussion on each employee's service report.

H. Monitors and Gas Detector Calibration

1. Each personal H2S monitor shall be calibrated at least monthly and the results recorded on the calibration log.

2. Those monitors that do not require calibrating shall be bump checked with calibration gas to test alarms, monthly or prior to use if not used routinely.

V. REFERENCES

29 CFR 1910.1000

29 CFR 1926.55

REVISION DATE	REVIEW DATE	REVISION NUMBER	REVISION COMMENTS	AUTHOR
03/15/2016	03/15/2016	0	created document	Bill Oswald
15MAR2016	15MAR2017	1	Edit/reformatted document	K Rodriguez
09/09/2016	09/09/2016	1.1	Logo Change from SCS to Strategic Construction Solutions	Bill Oswald

HSE MANUAL

SECTION # HSB 012

INCIDENT INVESTIGATION AND REPORTING

Revision 1.1_09SEP2016

I) SCOPE

Failure to properly report HSE incidents can result in inadequate management of personal injury cases as well as significant loss to the corporation from equipment or property damages. The intent of this document is to provide guidelines for reporting and management of HSE incidents.

This reporting process applies to all Strategic Construction Solutions employees, contractors or subcontractors performing work on behalf of Strategic Construction Solutions. It applies to all aspects of our business including consulting, construction activities, driving on public road ways, or work performed on Strategic Construction Solutions property.

II) BACKGROUND

An incident is defined as an unplanned event or situation. An incident can be defined as an injury, near miss, property damage, equipment damage, and environmental issue. Employees will follow the reporting procedures outlined in this policy.

Failing to report an incident will incur an investigation which could lead to the dismissal of the non-reporting parties. Any incident is considered a Safety Incident and will be reviewed by the Safety Department and or the incident review team to determine its final disposition. Strategic Construction Solutions Management and Safety will be announcing such an event via communication devices with assurance that the proper channels are notified of an incident, to include;

1. Ensuring full application of and conformance with local, state and country laws and regulations.
2. Ensuring compliance with the components of this manual, in addition to any site-specific H&S requirements.
3. Issuing clear and concise instructions and holding individuals accountable for their safety responsibilities, including all activities within their work area to traveling in company vehicles.
4. Strategic Construction Solutions will be emphasizing prevention by taking proactive steps that reduce the likelihood of an incident.
5. Providing all adequate and necessary H&S resources and leadership required to achieve these goals with on time reporting and incident investigations.

III) DEFINITIONS

Accident - an unfortunate incident that happens unexpectedly and unintentionally, typically resulting in damage or injury

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 and to report them to their Supervisor or Safety Department.

Digital Photo - is a picture that is recorded on an electronic device. An electronic device is a camera or a cell phone. This evidence then can be transferred from the device to a computer.

Emergency - means a sudden, urgent, usually unexpected occurrence or occasion requiring immediate action. This is a priority, response needed from Emergency Trained Professionals, Strategic Construction Solutions Safety and Supervision.

Environmental Incident - Response includes internal procedures for complying with federal, state, and local regulations for reporting and remediating releases to the environment. This can be a multiple of

things example; spills, toxins released unannounced, water contamination, oils and storage concerns.

Evidence - is that which tends to prove or disprove something; ground for belief; proof. Evidence can be photos, drug & alcohol results, statements, investigation facts, areas of impact, engineering schematics, scene details and drawings and outside expert's testimony with documentation.

Fatality - is a disaster or incident resulting in death, a serious event that has taken the life or lives of persons.

First Aid - is an emergency aid or treatment given to someone injured, suddenly ill, etc., before regular medical services arrive or can be reached. This type of incident is very minor and may not need treatment.

Health Safety Environmental Incident - any unplanned event that results in a personal injury, equipment or property damage, a motor vehicle accident, environment release, or a near miss.

Incidents Class

Minor Incident: Minor incidents include an injury that only requires First Aid on site, limited equipment or property damage including a MVA where repair costs are minimal, spills that can be controlled and cleaned up on site, or a near miss that the most serious potential outcome would be one of the above.

Serious Incident: A serious incident would include personal injuries that require or may require medical attention, equipment or property damage that repair costs would exceed insurance deductibles, equipment or property damage to a third party including a MVA, spills that require outside assistance to control or clean up, or a near miss that the most serious potential outcome would be one of the above.

Major Incident: Major incidents include incidents that result in the hospitalization of one or more employees, fatalities, equipment or property damage including MVA's where repair or restoration may cost in excess of $10,000, spills that would require notification to an outside agency, or a near miss that the most serious potential outcome would be one of the above.

Injury - is damage or harm done to or suffered by a person; it could be a minor injury or serious injury. The term injury comprises of such conditions as fractures, lacerations, abrasions, sprains, strains, contusion, dislocations, concussions, and compressions on any part of the body.

Incident Review Team: is comprised of a variety of individuals with expertise with backgrounds in the following:

(i) Investigating

(ii) Crime Scene Management

(iii) Evidence gathering

(iv) Human Resources

(v) Interview and to a degree Interrogation

(vi) Drug and Alcohol detection

(vii) Photography

The Team has past knowledge, experience and training to evaluate and investigate. These employees are the Director of Safety, Human Resources and specific Management. This could include lawyers for legal advice.

Motor Vehicle Accident -is an incident involving the operation of a motor vehicle resulting in injury or damage to equipment or property. This would include all vehicles traveling on a public road; it would exclude cranes and loaders performing work in the capacity for which the equipment was designed.

Near Miss - A near miss is an undesired event that under slightly different circumstances could have resulted in personal injury, damage to equipment or property, or damage to the environment.

OSHA - Occupational Safety and Health Administration is the Federal agency that regulates the Health and safety of General Industry and Construction companies.

Reportable/Recordable - is an injury at the workplace that is severe in nature. Meaning that if an employee(s) has an injury that is medically treated it would have to be reported to OSHA. There is time element that Strategic Construction Solutions has to report the event. First aid injuries are not reportable. Something as someone receiving stitches or a broken bone will constitute a Reportable Injury. The diagnosis and regulations have to be reviewed and followed by the Safety Department to determine what is reportable and what is not.

Potential Fatal Event - is an incident that is serious in nature that could have caused a serious injury or death. This event could be a significant Near Miss or Property Damage. The determination is based on the potential severity not actual severity

Property Damage - is to real or personal property through another's negligence, willful destruction, or by some act of nature. Property damage is distinguished from personal injury at times. Property damage may include harm to an automobile, a fence, a tree, a structure, or any other possession. The amount of recovery for property damage may be established by evidence of replacement value, cost of repairs, loss of use until repaired or replaced, or, put back in its original form. Someone owns the property which is damaged by a person(s) knowingly, recklessly or without the intent to cause damages.

Serious Injury - is defined as a personal injury which results in death; dismemberment; significant disfigurement; a fracture; loss of a fetus; permanent loss of use of a body organ, member, function or system; permanent consequential limitation of use of a body organ or member; significant limitation of use of a body function or system; or a medically determined injury or impairment of a non-permanent nature which prevents the injured person from performing substantially all of the material acts which constitute such person's usual and customary daily activities for not less than ninety days during the one hundred eighty days immediately following the occurrence of the injury or impairment.

Witness Statements - is a statement, a legal record of the testimony a person gives to the Safety Department, Supervision or the Incident Review Team. This is a legal document which is signed by the witness to confirm the statement as true. When a person gives a witness statement, it helps support the evidence or event details. A verbal statement is also valuable and can be used in an investigation. It is recommended that this verbal statement be witnessed by another member of the Incident Review team or responsible person.

IV) GENERAL REPORTING GUIDELINES

Accidents and incidents that result in personal injury, property damage, chemical spills, or other emergency situations will be immediately reported to the assigned supervisor and Safety Department at the time of the event. Additional notification needs to be to the Emergency Medical Services, Fire Department, or Hazmat Services will be immediately summoned if necessary.

Such events shall be investigated and documented on the appropriate Strategic Construction Solutions form. All forms will be completed with as much information that is available at that time and submitted to the Safety Director within 24 hours of the incident. Subsequent questions and information will be added when

the information is available. These investigations demonstrate Strategic Construction Solutions commitment to providing a safe and healthful work environment.

Accidents involving fatalities must be reported to appropriate government agency. Applicable regulatory agency reporting requirements shall be applied when accidents occur. The Safety Director shall make the appropriate contact with governing agency as required. No one shall contact OSHA directly without direction from Executive Management and the Director of Safety.

Governing Agency	What to Report	Reporting Time Frame
OSHA	Fatality	Within 8 hours of incident
OSHA	An in-patient hospitalization, amputation, or eye loss	With In 24 hours of incident
MSHA	Fatality	Within fifteen minutes of incident

If an incident requires immediate notification to government agencies, the accident scene must be secured and nothing disturbed or removed. Only after the approval from all government agencies, client and Strategic Construction Solutions representatives is received can the area be disturbed.

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.

When an incident happens it needs to be reported immediately to the Safety Department, Supervision, client and occasionally a government agency. The following matrix is designed to help you make the appropriate notifications.

	Supervisor	Safety	Fleet	Executive Management	Government Agency
Minor Injury First Aid	X	X			
Serious injury/ recordable medical treatment only	X	X			
Major injury/Restricted work activity or lost work day incident	X	X		X	
Fatality	X	X		X	X
Motor vehicle incident	X	X	X		X
Property damage/equipment damage	X	X	X		X

The Emergency Actions Plans will be developed in accordance with the Strategic Construction Solutions policy HS A005 implemented. Investigations shall be fully documented and maintained on site for review. An Strategic Construction Solutions Incident Review Team maybe involved and will control all evidence, statements, drug and alcohol testing reports to include photos and diagrams of the scene.

VI) DOCUMENTATION

All Incidents have to be reported to Supervision and Safety immediately. A documented incident report must be filled out within 12 hours of the incident. All incident reports need to be sent to safety@atwell-group.com. In the case of a Motor Vehicle incident or property damage the report needs to go to fleet@atwell-group.com and safety@atwell-group.com . No matter if the incident is minor the Safety Department needs to be notified and a written report generated (attachment 1)

All Incidents will be documented by a case number assigned by the Safety department. For document control factors each case will have a DR # (Documented Report) assigned to it. For example if there is a minor injury Incident in January the label will say DR# IN1-16-001.

Type of incident	Month	Year	Numerical number
IN- Injury **NM** - Near Miss **PD** - Property Damage **ED** - Equipment Damage **MVA** - Motor Vehicle Accident **ENV** - Environmental **CR** - Criminal Activity (Assault, Theft, Burglary, Sexual Assault, Aggravated Assault) **OI** - Other Incident (Anything that is not listed above)	1 through 12	16 - 2016	001 -999

All incident reports are considered company confidential and not to be shares with clients without receiving permission from a member of the Executive team or the Director of Safety. Incident reports will be stored electronically in a secure folder which has restricted access. Safety Department will control the investigation process and flow of information for the event. For example there will be Drug and Alcohol reports, witness statements, digital photos, incident reporting form, narrative and investigation reports, etc...

VII) INVESTIGATON PROCESS

All incidents, having actual or potential loss, must be investigated. Accurate and timely investigations and reports are required to:

1. Determine and document the cause(s) of the incident so that recommendations can be made in order to implement corrective action to avoid recurrences.
2. Satisfy the reporting requirements of regulatory authorities, Insurance provider(s), internal management and clients. Types of Incidents that Require an Internal Investigation As defined in Section 4.0: Incident Classification, the incidents that must be internally investigated include:
    A. Lost time incidents
    B. Restricted work incidents
    C. Medical aid incidents
    D. Motor vehicle incidents with losses in excess of $1,000.000 or involving injuries
    E. Unplanned or uncontrolled explosion, fire or flood that could or has caused injury
    F. Property and/or equipment damage causing an interruption of operation
    G. Environmental releases
    H. A Near Miss/Hit incident with the potential of causing any one of the above noted incidents

Strategic Construction Solutions team leads and project managers are required to participate in the internal investigation of incidents that occur within their service line.

Loss of Control (Root Cause) Investigations:

Effective incident investigation is an important and necessary component of an effective loss management strategy and process. The objective of incident investigation is to strive to improve company performance by eliminating or reducing the risk of injury, damage, waste and production

inefficiencies. Avoiding legal complication from non-compliance with legislation takes time, effort and finances. An incident has immediate and often long lasting negative effects on the image and reputation of the organization. Two key steps of an investigation are to determine the root causes within our management systems and to invoke corrective actions and system enhancements.

Incident investigation can provide an effective method for learning and improving. Therefore, it is imperative when an incident occurs to understand not only what happened, but also why it happened. From this, effective corrective actions must be developed in order to reduce or eliminate the likelihood of recurrence. Effective corrective actions need to be logical, realistic and attainable so they can be easily understood and supported by management.

Types of Incidents that Require Loss of Control Investigations include:

A. Fatalities
B. Lost time injuries where hospitalization for more than 48 hours is required
C. Motor vehicle incidents with 3rd party liability
D. Motor vehicle incidents with injuries and/or losses over $10,000.00
E. Unplanned or uncontrolled explosion, fire, or flood, that causes a serious injury or that had the potential of causing a serious injury
F. Contact with energized overhead electrical utilities
G. Property or equipment damage causing significant business interruption
H. Security violations causing significant business interruption
I. Significant environmental releases
J. Identified significant incident trends and/or safety concerns
K. A Near Miss/Hit incident with the potential of causing any one of the above noted incidents

Strategic Construction Solutions Executive Management, at their discretion, may request a Loss of Control investigation for any incident, trend, or concern not noted above.

Strategic Construction Solutions Management Representative(s) is/are required to directly participate in the investigation of a serious incident that occurs within their branch, service line or region.

Investigation Process

We can characterize an investigation as a process of applying the skills of observation, interview, and analysis in order to uncover the facts of an incident (truth) while objectively eliminating issues (perceptions) that cannot be reasonably verified. For incident investigation teams to provide value, they need to have the skills to effectively:

A. Investigate and identify root causes
B. Develop meaningful corrective actions
C. Establish commitment to implement

Investigation team members will be provided with appropriate training on investigation techniques.

Investigative Techniques and Procedural Guidelines:

Sketch & Map Site: This helps to visualize the scene and illustrate the location of equipment, people, barriers, etc. When the effects of an incident (a chemical spill, for example) cover an expanded site, a map or site plan may be helpful in indicating various points important to understanding the situation.

Reenactment: Another method of helping to visualize the incident is for the investigation team to demonstrate the activities that took place prior to the incident. If possible, a mock-up can be used in a de-energized setting. The benefit of this technique is that the investigation team gets close to the incident and has a much better opportunity to visualize or even act out the sequence of events. It is imperative that caution is emphasized and this exercise be performed in a safe, controlled environment.

Analyze Relative Positions: Determining the event sequence or the conditions impacting the events can be clarified by analyzing the relative position of people or objects immediately following the incident. Investigative teams need to analyze the positioning of people, equipment, vehicles, etc. to better understand the incident sequence. This helps to identify subsequent interviewing objectives.

Tear-Down Analysis of Equipment: Vital evidence to the investigation may lie deep within the confines of equipment directly or indirectly involved with the incident. Tearing down the equipment would be necessary in these cases to examine components, barriers and protective devices to try to understand what happened. In turn, the investigation team would be armed with some questions that could lead to an understanding of why the failure occurred. In some cases, the equipment directly or indirectly involved in the incident may have been destroyed. It could be valuable to obtain an identical piece of equipment and tear it down in this case. In any case of equipment tear down, it is highly recommended that a person with the proper technical background and knowledge be involved.

Analysis of Failed Parts and Materials: Failed parts and materials involved in the incident may have characteristics that enhanced the release of energy or failed to prevent or mitigate the consequences of the incident. Specialists and specialized testing equipment may be required to test parts and materials for such things as flammability, flash point, tensile strength, conductivity, chemical resistance, metallurgy, contaminant composition, etc. The services of a professional engineer or other forensic specialist may be required to do the analysis and to ensure credibility of the evidence. The particular characteristics will of course vary with the nature of the parts and materials involved however, understanding them may be critical in directing the investigation team to other questions and is, therefore, a technique of consideration.

Photographs: Photographs are an excellent means of conserving visual evidence and in illustrating key information in reports. Current technology allows us to computer enhance photographic images, highlight features and images, and perform other tasks that quickly and efficiently convey vital information. The photographs can then be imported directly into the investigation report. In all cases, photographs will be kept in accordance with this organization's record retention policies.

Physical Observations: In addition to the above techniques, the investigation team will be required to make certain observations in order to understand the events and influencing conditions surrounding the subject incident. This process is employed throughout the investigation. The items that follow are intended to be examples and circumstances surrounding an incident that may require the observation and examinations of items such as:

A. Equipment – instruments, vehicles, machinery, personal protective equipment
B. Materials – raw materials, mixtures, contaminants
C. Records – maintenance logs, training records, meeting minutes
D. Documentation – policies and procedures, memos, inspection reports, hazard assessments, MSDS
E. Manuals – operator's manuals, employee handbooks, environmental manuals
F. Other Paper Work – plan drawings, schematics, instructions, technical layouts. Investigative interviews

The investigative interviewing process includes: Pre-Interview activities; conducting interviews; and analyzing interview data. Interviews should be conducted with people directly and/or indirectly involved in the incident which may include, but is not limited to, a (n) individual(s) who is/are:

A. Nearest to the Incident – includes the accident victim, eyewitnesses, passersby, emergency responders, etc.

B. A Direct Influence – includes other people who may have knowledge of one or more events prior to (or following) the incident.

C. An Indirect Influence – includes other people with knowledge of policies, procedures, previous similar incidents, technical information relative to equipment or materials, etc.

The investigative interviewing process is highly interactive and dynamic. The process requires careful planning to minimize the amount of time required to accomplish the task and to ensure that good quality information is obtained. Techniques deployed before, during and after the interview as outlined below are intended to assist the investigative team in understanding the essential elements of investigation planning:

a) What information is required to help answer the questions

b) Who might know the information and therefore need to be interviewed; and

c) Why the people selected may be in a position to provide information.

Write the Report

Utilize the standard Strategic Construction Solutions Loss of Control (Root Cause) Investigation report format as follows:

1. Cover Page
    a. Company Name
    b. Investigation Title and Number
    c. Location Information
    d. Key Issues
    e. Date
    f. Statement of Confidentiality
2. Abstract
    a. Purpose of the Investigation
    b. Investigation Team
3. Table of Contents
4. Terms
5. Acronyms and Abbreviations
6. Executive Summary
    a. Introduction
    b. Background
    c. Conclusions
7. Investigation Report
    a. Investigation Process
    b. Incident Location Information
    c. Sequence of Events and Conditions
    d. Key Findings (Judgments of Needs)

e. Recommendations (Action Plan)

8. Appendices (Supporting documentation: diagrams, photographs, training records, etc.

Follow-up: If the recommendations are not addressed and/or implemented, similar incidents may recur. Management shall initiate all the recommendations for the corrective actions. The results and the corrective measures from the investigation will be clearly communicated to the respective management teams and personnel. Persons' assigned responsibility for implementing corrective actions will also be responsible for following up and verifying the completion and effectiveness. Management will ensure that those assigned responsibility of these corrective actions are held accountable. A Safety Alert communication will be distributed and posted outlining the incident event and the measures for improvements and/or enhancements.

Incident Investigation Kit: It is recommended that all Health & Safety Representatives/Department and offices have an Incident Investigation kit available, should one be required. A typical kit should contain the following items:

1. Portable case
2. Digital camera, or Cell phone with camera
3. Clipboard, pad of paper
4. Incident Report forms
5. Pens, pencils, highlighters, 2 tape measures – 100 ft. (30 meters) & 300 ft. (100 meters)
6. Investigation checklist
7. Survey paint
8. Flashlight & batteries
9. "DO NOT ENTER" tape or ribbon
10. Hazard assessment form
11. Specialized Items:
    a. Grease or wax pencils or Video Camera (if available)
    b. Zip lock bags/Material sample containers

VIII) TRAINING

All employees need to be trained on incident reporting and the provisions of this policy. At least one member of the investigation team needs to be trained on Root Cause Analysis to help facilitate the investigation.

REVISION DATE	REVIEW DATE	REVISION NUMBER	REVISION COMMENTS	AUTHOR
03/09/2016	03/09/2016	1	Created the document	Bill Oswald
09/09/2016	09/09/2016	1.1	Logo Change from SCS to Strategic Construction Solutions	Bill Oswald

This reporting form must be completed as thoroughly as possible with as much information that is available at the time of the incident. Recognizing that some information will not be available immediately, document what you can and take pictures of the scene and damage. Notify Supervisor and Safety Department of incident immediately (William Oswald, Director of Safety – 303.515.0071). Complete and send incident form with pictures and any other pertinent information to the Safety Department within 24 hours of incident. (safety@atwell-group.com)

GENERAL INCIDENT INFORMATION *(Fill out form as thoroughly as possible)*					
Incident Type:	*Choose an item.*	Injury Type:	Choose an item.	Date of Report:	*Click here to enter a date.*
Date of Incident:	*Click here to enter a date.*	Time of Incident:			
Reported by:			Name of Project:		
Responding Safety Professional:					
Supervisor Name:			Supervisor Contact #:		
Organization:	Choose an item.		Department:		
Division:	Choose an item.		Crew:	*Choose an item.*	
Exact Location:					
Detailed Description:					
Immediate Actions:					
Critical Lessons:					

INVOLVED OR DAMAGED PROPERTY DATA *(Please include pictures of damage)*			
Equipment/Vehicle **1**:	Damaged ☐ Involved ☐	Equipment/Vehicle **2**:	Damaged ☐ Involved ☐
Property Description (Make, model, color):		Property Description (Make, model, color):	
Property ID Number:		Property ID Number:	
Property Owner:		Property Owner:	
Description of Damage:		Description of Damage:	
Driver **1** Information: (DL #, full name)		Driver **2** Information: (DL #, full name)	
Insurance Information:		Insurance Information:	
Estimated Cost of Repairs:		Estimated Cost of Repairs:	
Comments:		Comments:	

Law Enforcement Investigation Information							
Time Dispatched:		Time Arrived:		Total Duration on Scene:			
Date of Incident:		Day of Incident:		Direction of Travel:			
Type of Vehicle(s) Involved:	Choose an item.	Number of Vehicles Involved:		Disposition of Vehicle(s)	Choose an item.		
Weather Conditions	Sunny ❒ Cloudy/Haze ❒ Rain ❒ Windy ❒ Snow ❒ Ice ❒ Wet Pavement ❒			Blockages and Backups:			
Type of Incident:		Agencies Responding:	Fire Dept. ❒ Ambulance ❒ Local Police❒ Sheriff ❒ Highway Patrol ❒				
Driver Condition:	Coherent ❒ Not Drinking ❒ Not Known if U.I. ❒ Drinking Not Impaired ❒ U.I. Alcohol ❒ U.I. Drugs ❒ U.I. Alcohol & Drugs ❒ Physical Impairment ❒ Fell Asleep ❒			Alcohol and/or Drug Test Performed:	Yes ❒ No ❒		
Vision Obscured By:	Not Obscured ❒ Headlights ❒ Sunlight ❒ Parked Vehicle ❒ Trees/Bushes ❒ Rain/Snow ❒ Other ❒			Vehicle Condition:	No Known Defects ❒ Tire Failure ❒ Brake Failure ❒ Improper Lights ❒ Steering Failure ❒ Slick Tires ❒ Other ❒		
Vehicle Maneuver:	Turning Left ❒ Turning Right ❒ Making U-Turn ❒ Stopped ❒ Straight Forward ❒ Changing Lanes ❒ Backing ❒ Parked ❒ Passing ❒ Negotiating a Curve ❒ Entering/Leaving Parking ❒ Entering/Leaving Driveway ❒						
Sketch of Scene:							
Description of Collision:							
Injuries:	None ❒ Minor (No Transport) ❒ EMT/Medical Transport ❒ MediVac ❒		Citation Issued:	Driver 1 ❒ Driver 2 ❒		Citation Number:	
Officer Information							
Reporting Agency:		Reporting Officer Name:		Officer Badge Number:			
Report Number:		Officer Contact Information:					

INJURED EMPLOYEE DATA - *CONFIDENTIAL* *(scan and send to safety@atwell-group.com)*									
Name:				**Age:**		**Gender:**	*Choose an item.*		
Employee ID:		Date of Birth:				Last 4 of SS#:			
Job Title:				Employee Type:		*Choose an item.*			
Contact Phone:		Schedule:	*Choose an item.*			Shift Start Time:			
Severity:	*Choose an item.*	Part of Body:	*Choose an item.*			Side of Body:	*Choose an item.*		
Nature of Injury:	*Choose an item.*	Mechanism of Injury:	*Choose an item.*						
Job Experience:	YEARS:		MONTHS:		Supervisor:				
Site Experience:	YEARS:		MONTHS:		Superintendent:				
Industry Experience:	YEARS:		MONTHS:		Contractor:				
Treated Onsite:	YES ☐ NO ☐		Treatment:						
Treated Offsite:	YES ☐ NO ☐		Treatment:						
Location of Transfer:									

INVOLVED DATA

(Include individuals not injured or directly involved)

Name	Job Title	Employee ID	Gender	Age	Job Experience (Years/Months)		
					Job	Site	Industry
			M ☐ F ☐				
			M ☒ F ☐				
			M ☐ F ☐				
			M ☐ F ☐				
			M ☐ F ☐				

WITNESS DATA

Name	Job Title	Employee ID	Gender	Age	Job Experience (Years/Months)		
					Job	Site	Industry
			M ☐ F ☐				
			M ☐ F ☐				
			M ☐ F ☐				
			M ☐ F ☐				

If the event is categorized as a Significant Event (PFE, Safety Alert or High Risk) the manager of the area, individual with total responsibility and Health and Safety Manager must be contacted immediately.

Potential Risk Rating:	Potential Consequence:	*Choose an item.*	Potential Frequency:	*Choose an item.*	Risk Category:	*Choose an item.*
	Energy Level:	*Choose an item.*	Safety Alert ☐		Potential Fatal Event ☐	
	Energy Source:	*Choose an item.*	Agent Involved:	*Choose an item.*		
Potential Contributing Factors:	*Choose an item.*	*Choose an item.*	*Choose an item.*	*Choose an item.*	*Choose an item.*	
	Choose an item.	*Choose an item.*	*Choose an item.*	*Choose an item.*	*Choose an item.*	

INVESTIGATION DOCUMENTATIONS				
PHOTOS:	**YES** ☐	**NO** ☐	**COMMENTS:**	
STATEMENTS:	**YES** ☐	**NO** ☐		
INSPECTION RECORDS:	**YES** ☐	**NO** ☐		
OTHER: (If yes, please describe)	**YES** ☐	**NO** ☐		

HEALTH & SAFETY DEPARTMENT OFFICE USE ONLY			
IMS NO.	***Date:***	***Emp ID:***	***Signature:***

Notes:

HSE MANUAL

SECTION # HS B013

Ladder Safety Policy

Revision 2.1_09SEP2016

I. SCOPE

A. Strategic Construction Solutions is committed to providing a safe and healthy work environment for our employees. The purpose of the program is to prescribe rules and establish minimum requirements for the construction, care, and use of the common types of ladders.

B. All ladders that are purchased and placed into service; or, any ladders that are engineered, manufactured and installed on any of Strategic Construction Solutions equipment shall follow the requirements set forth by this program.

C. This program is applicable to all employees who may utilize ladders. When work is performed on a non-owned or operated site, the operator's program shall take precedence, however, this document covers Strategic Construction Solutions employees and contractors and shall be used on owned premises, or when an operator's program doesn't exist or is less stringent.

II. DEFINITIONS

A. **Ladder**: an appliance usually consisting of two side rails joined at regular intervals by cross pieces called steps, rungs, or cleats, on which a person may step in ascending or descending.

B. **Stepladder**: a self-supporting portable ladder, nonadjustable in length, having flat steps and a hinged back. The size is designated by the overall length of the ladder measured along the front edge of the side rails.

C. **Single ladder**: a non-self-supporting portable ladder, nonadjustable in length, consisting of but one section. The overall length of the side rail designates its size.

D. **Extension ladder**: a non-self-supporting portable ladder adjustable in length. It consists of two or more sections traveling in guides or brackets so arranged as to permit length adjustment. Its size is designated by the sum of the lengths of the sections measured along the side rails.

E. **Fixed ladder:** a ladder permanently attached to a structure, building, or equipment.

F. **Individual-rung ladder**: a fixed ladder each rung of which is individually attached to a structure, building, or equipment.

G. **Cage**: a guard that may be referred to as a cage or basket guard, which is an enclosure that is fastened to the side rails of the fixed ladder or to the structure to encircle the climbing space of the ladder for the safety of the person who must climb the ladder.

III. RESPONSIBILITIES

A. Managers and Supervisors

1. Managers and supervisors are responsible for ensuring that all employees, and/or contractors have been trained in the use and inspection of ladders in accordance to the manufactures guidelines.

2. Managers and supervisors are responsible for ensuring that all employees and contractors are aware that if an inspection discovers a defect, the ladder shall not be used and be taken out of service.

B. Employees

1. Employees shall inspect ladders prior, during, and at the completion of each use to ensure the condition of the ladder and the safety of its occupants.
2. Employees are responsible for following this program and reporting any damage or repairs that may be needed to their supervisor.

IV. PROCEDURE

A. Inspection, Care, and Safe Work Practices of Ladders

1. Inspection: Ladders shall be inspected by a competent person for visible defects on a periodic basis and after any occurrence that could affect their safe use.
    a) Ladder rungs must be uniformly spaced or meet OSHA/ANSI specifications. Ladder rungs, cleats, and steps shall be parallel, level, and uniformly spaced when the ladder is in position for use.
    b) Portable and fixed ladders with structural defects, such as, but not limited to, broken or missing rungs, cleats, or steps, broken or split rails, corroded components, or other faulty or defective components, shall either be immediately marked in a manner that readily identifies them as defective, or be tagged with "Do Not Use" or similar language, and shall be withdrawn from service until repaired
    c) If a ladder is tipped over, it shall be inspected by a competent person for side rail dents or bends, or excessively dented rungs; check all rung to side rail connections; check hardware connections; check rivets for shears.
    d) Ladders with broken or missing steps, rungs, or cleats, broken side rails, or other faulty equipment shall not be used; improvised repairs shall not be made.
    e) All wood parts shall be free from sharp edges and splinters; sound and free from accepted visual inspection from shake, or other irregularities.
2. Care:
    a) Ladders shall be maintained in good condition at all times, the joint between the steps and side rails shall be tight, all hardware and fittings securely attached, and the movable parts shall operate freely without binding or undue play.
    b) Metal bearings of locks, wheels, pulleys, etc., shall be frequently lubricated.
    c) Frayed or badly worn rope shall be replaced. Safety feet and other auxiliary equipment shall be kept in good condition to ensure proper performance.
    d) Rungs shall be kept free of grease and oil.
    e) Ladders shall be stored in a well-ventilated area in a manner to prevent sagging and warping.

B. Ladder Safe Work Practices:

1. Ladders shall be used only for the intended purpose for which they were designed.
2. The ladder shall be secured at the top or held by another person at the base.
3. The footing of the ladder shall be placed on a stable and level surface.

4. Extension ladders shall be placed at a 4:1 ratio. Ladders shall be used at an angle such that the horizontal distance from the top support to the foot of the ladder is approximately one-quarter of the working length of the ladder (the distance along the ladder between the foot and the top support.
5. When ladders are not able to be extended then the ladder shall be secured at its top to a rigid support that will not deflect.
6. Ladders shall not be placed on boxes, barrels, or other unstable bases to obtain additional height.
7. Ladders shall not be used in a horizontal position as platforms, runways, or scaffolds.
8. Ladders shall not be used by more than one person at a time.
9. Ladders shall not be placed in front of doors opening toward the ladder unless the door is blocked open, locked, or guarded.
10. If a ladder is used in a high traffic area, barricades shall be placed to avoid accidental displacement due to collisions.
11. Do not stand on the top two rungs or top of step ladders.
12. On two-section extension ladders the minimum overlap for the two sections in use shall be as follows:

Size of Ladder (feet)	Overlap (feet)
Up to and including 36’	3
Over 36 up to and including 48’	4
Over 48 up to and including 60’	5

13. Ladders shall extend a minimum of (3) three feet above top of upper landing surface. The ladder side rails shall extend at least (3) three (.9m) above the upper landing surface. When ladders are not able to be extended then the ladder shall be secured at its top to a rigid support that will not deflect.
14. The employee shall maintain a three (3) point grip on the ladder at all times and carry tools/equipment on a belt or hoist up. Do not carry anything in the hands that could cause injury in case of fall.
15. The employee shall face the ladder while ascending or descending.
16. The bracing on the back legs of stepladders is designed solely for increasing stability and not for climbing.
17. The ladder shall not be moved while occupied.

C. Portable Ladders

1. Stepladders shall not be longer than 20 feet. Single ladders shall not be longer than 30 feet.
2. A two section extension ladder shall not be longer than 60 feet. All ladders of this type shall consist of two sections, one to fit within the side rails of the other, and arranged in such a manner that the upper section can be raised and lowered.
3. Keep all ladders at least ten (10) feet away from power lines.

4. Ladders shall have the correct load capacity for the task and not be loaded beyond the maximum intended load for which they were built nor in excess of the manufacturer's rated capacity. Weight includes the combined weight of the climber and his tools/equipment. Ladders are rated as the following:

Classification ID	Weight Capacity
I-A	Up to 300 lbs
I	Up to 250 lbs
II	Up to 225 lbs
III	Up to 200 lbs

D. Fixed Metal Ladders

1. Ladders shall be constructed to withstand a minimum of 200 pounds
2. All metal rungs shall have a minimum diameter of ¾ inches and wooden rungs shall have a minimum diameter of 1 1/8 inches.
3. Rungs shall not be more than 12 inches apart and shall be uniform throughout the length of the ladder.
4. Rungs shall be a minimum length of 16 inches and provide protection so a foot cannot slip off the end.
5. Rungs shall have a minimum of (7) seven inches between itself and the structure behind it.
6. A fall restraint system must be provided for all fixed ladders greater than (6) six feet in length.
    a) A Cage is required when the fixed ladder is at least 20 feet tall.
    b) Cages on fixed ladders shall not begin at a point less than (7) seven feet or greater than (8) eight feet from the walking surface below the cage.
    c) Cages shall provide a clear width of 15 inches in each direction of the rung's centerline.
    d) Cages shall not extend less than 27 inches, but not greater than 28 inches from the centerline of the rung.
    e) A climbing fall restraint system may be substituted for a ladder cage.

V. REFERENCES

29 CFR 1926.1503

Cal/OSHA T8 CCR 3276

REVISION DATE	REVIEW DATE	REVISION NUMBER	REVISION COMMENTS	AUTHOR
03/15/2016	03/15/2016	1	created document	Bill Oswald
15MAR2016	15MAR2016	2	Edited/formatted document	K Rodriguez
09/09/2016	09/09/2016	2.1	Logo Change from SCS to Strategic Construction Solutions	Bill Oswald

HSE MANUAL

SECTION #HS B014

Lead Safety Policy

Revision 3.1_09SEP2016

I. SCOPE

1. This document contains the Strategic Construction Solutions lead Safety policy for the Strategic Construction Solutions employees. The purpose of this procedure provides guidelines for the safe handling of lead in work areas and the protection of its workers
2. This procedure applies to Strategic Construction Solutions operations where employees whose work activities may contact lead containing materials but do not disturb the material during their work activities. When work is performed on a non-owned or operated site, the operator's program shall take precedence, however, this document covers Strategic Construction Solutions employees and contractors and shall be used on owned premises, or when an operator's program doesn't exist or is less stringent.

II. DEFINITIONS

1. mg/m3: Milligram per cubic meter
2. IDLH: Immediately Dangerous to Life and Health
3. PEL: Permissible Exposure Limit
4. TLV: Threshold Limit Value
5. TWA: Time Weighted Average
6. STEL: Short Term Exposure Limit
7. ppm: Parts per million

III. TRAINING PROGRAM

1. Prior to the commencement of lead handling operations, the Project Manager shall be responsible for assuring all employees are trained on the hazards associated with lead. This training shall include, but not be limited to, the following:
    a. The specific nature of the operations, which could result in exposure to lead above the action level
    b. The purpose, proper selection, fitting, use, and limitations of respirators
    c. The purpose of the medical surveillance program and the medical removal protection program including information concerning the adverse health effects associated with excessive exposure to lead (with particular attention to the adverse reproductive effects in both males and females)
    d. The engineering controls and work-practices associated with the employee's job assignment
    e. The contents of this Site-Specific Health & Safety Plan (Compliance Plan)
    f. Instructions to employees that chelating agents should not routinely be used to remove lead from their bodies and should not be used at all except under the direction of a licensed physician;
    g. Employee's right of access to records

IV. HAZARDS

CAS Number	Exposure Limits	8-hour Occupational Exposure Limits		15- min – ceiling (c) Exposure Limits		Substance Interaction	Carcinogen (A1, A2)
		ppm	mg/m3	ppm	mg/m3		
7439-92-1	ACGIH TLV-TWA		0.05				
	ACGIH TLV-STEL						
	OSHA PEL		0.05				
	OSHA STEL						
	IDLH		100				
	NIOSH (REL)		0.05				

*0.04 mg/m3, 10-hour shift; 0.033 mg/m3, 12-hour shift

Notes for Table:

1. A person using this Table may apply either the “mg/m3” or “ppm” measure defined as follows:
    a. “mg/m3” means milligrams of substance per cubic meter of air measured at ambient work site conditions;
    b. “ppm” (parts per million) means parts of a vapor or gas by volume at standard conditions (77°F/25°C and an absolute barometric pressure of 101.3 kilopascals) per parts of contaminated air by volume at ambient work site conditions.
2. “f/cc” means fibers per cubic centimeter of air; “CAS” means Chemical Abstracts Service.
3. The numbers 1, 2 and 3 in the “Substance Interaction” column have the following meanings:
    a. Substance may be readily absorbed through intact skin;
    b. Substance is a simple asphyxiant that may create an atmosphere deficient in oxygen; available oxygen in the range of 19.5 percent to 23 percent by volume must be present.
    c. Occupational exposure limit is based on irritation effects and its adjustment to compensate for unusual work schedules is not required.
4. A carcinogen is defined as “an agent capable of inducing benign or malignant neoplasms”. Based on the weight of evidence from epidemiologic studies, “A1” would be a Confirmed Human Carcinogen and means that the agent is carcinogenic to humans. “A2” would be a Suspected Human Carcinogen and means that human data are accepted as adequate in quality but are conflicting or insufficient to classify the agent as A1 (American Conference of Governmental Industrial Hygienists).
5. TLV-TWA ACGIH, Threshold Limit Value – Time Weighted Average.
6. TLV-STEL ACGIH, Threshold Limit Value – Short Term Exposure Limit.
7. PEL-TWA OSHA, Permissible Exposure Limit – Time Weighted Average.
8. PEL-STEL OSHA, Permissible Exposure Limit – Short Term Exposure Limit.
9. IDLH NIOSH, Immediately Dangerous to Life or Health; a maximum concentration from which, in the event of respiratory failure, one could escape within 30 minutes without experiencing any escape impairing or irreversible health effects.
10. A1 ACGIH, Known Human Carcinogen.
11. A2 ACGIH, Suspected Human Carcinogen.
12. Skin: this attention calling designation refers to the potential contribution to the overall exposure through skin absorption, including mucus membranes and eye, either airborne or through direct contact with the substance.
13. Ceiling ACGIH, the concentration that should not be exceeded during any part of the working exposure.

Additional Information	
Synonyms:	Vary depending upon specific compound such as Lead

	Arsenate; Lead Chromate.
Appearance:	Bluish-white or silvery-gray, powder or solid.
Odor:	None.
Boiling Point:	1740 C (3164 F)
Specific Gravity:	11.3 (water = 1)
Flammability:	Metal is not flammable, powders or dust may be flammable.
Product Uses:	Major component of lead acid batteries; ballast keel for sailboats and scuba diving weight belts; glazing bars for stained glass or multi-lit windows; projectiles for fishing sinkers & firearms; commonly used in PVC that covers electrical cords; Lead sheets are utilized in the construction industry for weathering, roofing and cladding to prevent water penetration; lining of chemical treatment baths, acid plants and storage vessels; lead sheet is used for sound insulation and radiation shielding. Molten lead is utilized as a coolant for lead cooled fast reactors; used in high voltage power cables as a sheathing material to prevent water diffusion into insulation.
Short Term Exposure:	The effects of exposure to lead dusts may not develop quickly. Symptoms may include decreased physical fitness, fatigue, sleep disturbance, headache, aching bones and constipation, abdominal pains and decreased appetite. These effects are reported to be reversible if exposure ceases. Inhalation or ingestion of large amounts of lead over an extended period of time may result in seizures, coma, and death. Lead may be irritating to the skin and eyes.
Long Term Exposure:	Lead can accumulate in the body over time. Therefore, long-term exposures to lower levels can result in a build-up of lead in the body and more severe symptoms. These may include anemia, pale skin, a blue line at the gum margin, decreased hand-grip strength, abdominal pains, severe constipation, nausea, vomiting, and paralysis of the wrist joint. Prolonged exposure may also result in kidney damage. If the nervous system is affected usually due to very high exposures, the resulting effects include severe headache, convulsions, coma delirium, and death. In non-fatal cases, recovery is slow and not always complete. Alcohol ingestion and physical exertion may bring on symptoms. Continuous exposure can result in decreased fertility. Elevated lead exposure of either parent before pregnancy can increase the chances of miscarriage or birth defects. Exposure of the mother during pregnancy can cause birth defects.
Incompatibility & Reactivity:	Metal is stable. High temperatures may produce hazardous fumes. Incompatibility: Strong oxidizers, hydrogen peroxide, active metals.
Acute Health Effects	
Affected Organs:	Eyes, GI tract, CNS, Kidneys, Blood, Gingival tissue.
Inhalation:	Can irritate the upper respiratory tract (nose, throat) as well as the bronchi and lungs by mechanical action. Lead dust can be

	absorbed through the respiratory system. May cause metallic taste, chest pain, decreased physical fitness, fatigue, sleep disturbance, headache, irritability, reduces memory, mood and personality changes, aching bones and muscles, constipation, abdominal pains, decreasing appetite. Inhalation of large amounts may lead to ataxia, delirium, convulsions/seizures, coma and death. Inhalation of fumes may cause fume metal fever characterized by flu-like symptoms including metallic taste, fever, nausea, vomiting, chills, cough, weakness, chest pain and increased white blood cell count.
Eye Contact:	Can irritate eyes by mechanical action.
Skin Contact:	May cause skin irritation by mechanical action.
Ingestion:	May cause lead poisoning characterized by abdominal pain or cramps (lead cholic), spasms, nausea, vomiting, headache, muscle weakness, hallucinations, distorted perceptions, "lead line" on the gums, metallic taste, loss of appetite, insomnia, dizziness, and other symptoms similar to that of inhalation.
FOR FURTHER INFORMATION, REFER TO SDS OR CONTACT HEALTH AND SAFETY	

V. REQUIREMENTS

1. **Lead Exposure Control Plan (Area specific)**

   In certain areas an exposure control plan may need to be developed if:

   a. any worker at a work site may be exposed to airborne lead in excess of its occupational exposure limit for more than 30 days in a year; or

   b. A worker's exposure at a work site could result in an elevated body burden of lead through any route of entry.

   Refer to applicable legislation for the area in which the work is taking place. If an exposure control plan is required it must include, at minimum, the following:

   c. A statement of purpose and responsibilities of individuals

   d. Methods of hazard identification, assessment, and control

   e. Worker education and training

   f. Safe work practices if required by the hazard assessment

   g. Descriptions of personal and work site hygiene practices and decontamination practices

   h. Process of health monitoring, including biological testing

   i. Methods of documentation and record keeping

   j. Procedures for maintenance of the plan, including annual reviews and updating

2. **Action Levels**

   To ensure the wellbeing of Strategic Construction Solutions employees, all lead handling operations shall be initiated in Level B protection unless there is adequate documentation indicating that a lower level of protection is appropriate. Strategic Construction Solutions Environmental or Health & Safety Department must be involved in that decision-making.

Level B protection shall be maintained until such time as the specific airborne concentrations can be quantified and a judgment made as to the appropriateness of downgrading. Downgrading must be authorized by the Strategic Construction Solutions Environmental or Health & Safety Department.

a. Level B Action Levels

If any of the following levels are exceeded, Level B operations shall stop immediately and personnel shall immediately leave the work area and notify Health & Safety personnel:

i. Lead concentrations are above 2.5 mg/m3
ii. Lower explosive limits are above 10%
iii. Oxygen content is below 19.5% or above 22.0%
iv. Employees experience symptoms of lead exposure

b. Level C Action Levels

i. If any of the following levels are exceeded, Level C operations shall stop immediately and personnel shall immediately leave the work area:

a. Lead concentrations are above 0.25 mg/m3
b. Lower explosive limits are above 10%
c. Oxygen content is below 19.5% or above 22.0%
d. Symptoms of lead exposure experienced

ii. All work shall cease and workers shall immediately leave the work area if any odor or irritation is detected inside the respirator mask.

iii. In addition, respirator cartridges must be replaced after the end of service life or at the beginning of each shift, whichever comes first. Cartridges must be labeled to indicate the date and time that they were installed. Cartridges must be replaced outside of the work area.

c. Level D Action Levels

Level D protection is allowed for workers located outside of the work area. If any of the following levels are exceeded and persist for five (5) minutes, Level D operations shall stop immediately and personnel shall immediately leave the area:

i. Lead concentrations are above 0.025 mg/m3
ii. Lower explosive limits are above 10%
iii. Oxygen content is below 19.5% or above 22.0%
iv. Symptoms of lead exposure experienced

3. **Personal Protective Equipment**

a. Minimum Respiratory Protection Prior to Air Monitoring

i. The Strategic Construction Solutions Lead Standard specifies minimum respiratory protection requirements until worker exposures are determined through personal air monitoring. Respiratory requirements are categorized according to lead handling tasks performed:

EXPOSURE CATEGORY	PPE LEVEL	OPERATION/TASKS
>PEL <10PEL (.05-0.5 mg/m3)	LEVEL C/B	✓ **LEAD PAINT PRESENT:** • Manual demolition • Manual scraping • Manual sanding • Heat gun application • Power tool with dust collection system
> 10 PEL (0.5-2.5 mg/m3)	LEVEL B	✓ **USING LEAD MORTAR** ✓ **LEAD BURNING** ✓ **LEAD PAINT PRESENT**: • Rivet busting • Dry abrasives used • Power tool cleaning without dust collection system • Moving and removal of abrasive blasting enclosures
> 50PEL (>2.5 mg/m3)	LEVEL B	✓ **LEAD PAINT PRESENT:** • Welding, cutting, torch burning • Abrasive blasting

ii. This protection level must be utilized at a minimum until actual exposure levels are determined through personal air monitoring.

iii. Strategic Construction Solutions Policy requires Level C protection above ½ PEL, and less than ten times one-half the PEL (10x (½ PEL)).

iv. Strategic Construction Solutions Policy requires Level B protection above 10x (½ PEL).

v. Strategic Construction Solutions requires respirators to be worn during period when:

a. An employee's exposure to lead exceeds the OSHA PEL.

b. Work operations for which engineering and work practice controls are not sufficient to reduce employee exposures to, or below, the OSHA PEL.

c. An employee requests a respirator.

vi. In addition to the PPE/Respirator section criteria in this Standard, Strategic Construction Solutions will provide a powered air-purifying respirator (PAPR), when an employee elects to choose a PAPR and it will provide adequate protection to the employee.

b. Strategic Construction Solutions Historical Air Monitoring Records

i. Historical air monitoring data has shown with statistical confidence that airborne levels of lead remain below the protection factor of air purifying respirators (0.25 mg/m3) for liquids, sludge, and solids regardless of bulk concentration when appropriate engineering controls are used.

MATERIAL/ACTIVITIES	MONITORING HISTORY	PPE LEVEL
LIQUIDS CONTAINING LEAD • Pumping • Drum loading, transfer	Exposure Range: <.001-.024 mg/m3 95% UCL: 0.164 mg/m3	C
WET SLUDGE • Tank, pit cleaning • Pressure washing	Exposure Range: <.001-.044 mg/m3 95% UCL: 0.132 mg/m3	C
SOILS • Excavation • Soil Transfer • Solids Consolidation • Vactoring	Exposure Range: <.001-0.003 mg/m3 95% UCL: 0.038 mg/m3	C
DUSTS • Baghouse Cleaning • Baghouse Filter Handling • Firing Range Decon	Exposure Range: <.001-6.9 mg/m3 95% UCL: Not calculated due to large number of samples above Level C protection	B
DUCTWORK • Duct Decon • Duct Removal • Duct Cutting	Exposure Range: <.001-.234 mg/m3 95% UCL: Not calculated due to Number of samples above PEL	B/C* depends on bulk conc.
HOT WORK ON PAINTED SURFACES WITH LOCAL VENTILATION • Torch Cutting	Exposure Range: <.002 - .015 mg/m3 95% UCL: Not calculated due to site variables	B/C* depends on bulk conc.

c. Level B

Level B includes the following:

i. Full-face supplied air respirator or SCBA in pressure demand mode

ii. Saranex or other appropriate chemical resistant coverall

iii. Nitrile or similar protective inner gloves

iv. PVC chemical resistant outer gloves

v. Disposable boot covers

vi. Steel toe work boots

vii. Hard hat

viii. Hearing protection (Minimum NRR 26)

d. Level C

Level C includes the following:

i. Full-face air purifying respirator with MSA type GMC-P100, or GME-P100 cartridges. P100 cartridges alone are permitted if dust particulates are the only inhalation hazard

ii. Saranex or other appropriate chemical resistant coverall

iii. Nitrile or similar protective inner gloves

iv. PVC chemical resistant outer gloves

v. Disposable boot covers

vi. Steel toe work boots

vii. Hard hat

viii. Hearing protection (Minimum NRR 26)

Note: *Half-face respirators are not permitted since lead is an eye irritant.*

e. Level D

Level D includes the following:

i. Strategic Construction Solutions work uniform

ii. Steel toe work boots

iii. PVC chemical protective gloves

iv. Chemical safety glasses

v. Hard hat

vi. Hearing protection (Minimum NRR 26)

f. Additional Information

i. On-site personnel shall don all appropriate/specified PPE prior to commencement of operations.

ii. All PPE listed is subject to change if there are other contaminants present. Selection of PPE shall be made in consultation with Environmental department or Health & Safety personnel.

iii. For employees exposed to lead above the PEL, without regard to respirator use or where skin or eye irritation may result from exposure to certain lead compounds (e.g. Lead Arsenate and Lead Azide), Strategic Construction Solutions shall provide appropriate protective work clothing and equipment to employees at no cost to them. This applies to coveralls or similar full body protective clothing, gloves, hats, shoes (or disposable shoe coveralls) and face shields, goggles, or other personal protective equipment.

4. **Site Monitoring**

a. Frequency and Methods of Site Monitoring

i. The Project Manager is responsible for ensuring adequate air monitoring is conducted and that adequate personnel protection and site integrity are maintained. Type and frequency of monitoring shall be determined in consultation with Health & Safety personnel.

ii. Due to the inability to effectively monitor airborne metal concentrations with field instrumentation, integrated air monitoring must be conducted. Personal samples shall be collected and analyzed for lead. These results shall then be compared to the Action Levels specified in this Standard to determine the appropriateness of the assigned levels of protection and the effectiveness of work practices and engineering controls.

iii. An initial determination of employee(s) potential lead exposure shall be performed through integrated monitoring during the initial phase of lead handling. As a minimum, full shift (or the job duration, whichever comes first), personal samples shall be collected for a worst case scenario in each work area

and for each task. The employee who will be working closest to the contamination source for the longest period of time is chosen as the worst case employee. These full shift samples shall be representative of the monitored employee's regular, daily exposure to lead as well as representative of other employees conducting similar operations in the immediate area.

5. **Engineering Controls/Work Practices**

   a. Site-Specific Hazardous Identification Requirements and Control Measures

   To reduce the potential hazards of lead handling operations, on-site personnel shall comply with the following site-specific hazardous identification requirements and control measures:

      i. The project supervisor and foreman will be assigned to identify lead hazards in the work area and have the authority to take prompt corrective measures to eliminate these hazards. The project foreman should continuously inspect the job site, materials, and equipment to ensure that all hazards have been eliminated.

      ii. All work areas where exposure is above the PEL shall be conspicuously identified with appropriate warning signs and barriers as follows:

      iii. Work areas can be enclosed with polyethylene sheeting to reduce or eliminate the potential re-entry of lead into the work place (if specified in task hazard assessment and control section).

      iv. Shoveling, sweeping, and brushing are permitted when removing bulk contamination (e.g. soil, sludge removal), but not during housekeeping activities (tidying work area at end of shift). These work practices must be used in conjunction with engineering controls (water misting, ventilation) so that visible dust is minimized as much as possible.

      v. Excavation/Digging: excavator and backhoe buckets should be emptied as close to ground level as possible so that dust is minimized. Water misting can be used to knock down dusts as the bucket is emptied.

      vi. Hot-work, Power Tools - Remove Contamination and Ventilate

         a. Work upwind of the hot-work area

         b. Remove paint and surface contamination to a point at least 4 (four) inches from the area where heat will be applied

         c. Local ventilation should be provided to remove dusts and fumes at the source of generation. Coppus blowers should pull air directly from the

hot-work or power tool area. Ventilation exhaust should be placed in unoccupied areas

vii. Stop work immediately if chemical protective clothing is ripped or torn. Replace clothing immediately in the decontamination zone.

viii. Selection of engineering controls will depend on the scope of work, material handled and air monitoring history. Engineering controls will be designed to keep employee exposure as low as possible.

ix. Water misting shall be performed where appropriate to minimize airborne dust levels in the work area. Thoroughly soak material using garden sprayers, or preferably, a garden hose.

x. Ventilation: Localized exhaust ventilation is preferred over general work area ventilation. Position a coppus blower or HEPA-filtered negative air machine at the source of dust generation so that dust is pulled quickly and directly away from the worker's breathing zone.

    a. Design Ventilation System: Many factors influence the effectiveness of work area ventilation including size of work area, length of flex hose, elbows in flex hose, and machine capacity. See the Confined Space Ventilation Standard for specific recommendations.

    b. Test Ventilation System: When ventilation is used to control lead exposure, the performance of the system shall be evaluated by the project foreman to ensure its effectiveness is maintained. Any of the following test methods may be used; (some are more appropriate than others depending upon scope of work and work area design):

        i. Visually observe to ensure no dust escapes work area

        ii. Test airflow with smoke tubes

        iii. Check magnahelic gage on negative air machine

        iv. Collect area air sample at ventilation exhaust

xi. HEPA vacuuming of lead dust shall be performed where appropriate. HEPA Filter Replacement may result in an exposure to lead. Filters should be wetted and bagged in the hot zone to prevent re-entry of airborne lead into the workplace.

xii. Paint Removal: The following techniques create less dust when removing surface coatings. These techniques should be investigated when planning projects:

    a. Centrifugal blasting where abrasive is recovered and recycled

    b. Wet blasting using high-pressure water with or without an abrasive

    c. Wet blasting using a ring of water to surround the blast nozzle

    d. Vacuum blasting, which shrouds the nozzle with local exhaust ventilation

    e. Manual scraping

    f. Heating and scraping

    g. Needle guns

    h. Chemical removal

xiii. On-site personnel shall don new/clean PPE and work clothes prior to the start of each shift of operations.

a. Engineering controls and PPE are a first line of defense against lead exposure. Proper, consistent use of chemical protective clothing will prevent the uniform, skin or hair from becoming contaminated.

xiv. No eating, drinking or smoking is allowed inside the work and decontamination areas. All personnel shall wash their hands and faces prior to eating, drinking, smoking and/or applying cosmetics.

a. Lack of Hand-washing Facilities: If hand-washing facilities are not available in the immediate support zone, temporarily clean hands with moist towelettes and proceed as soon as possible to hand-washing facilities.

xv. On-site personnel shall follow all specified Strategic Construction Solutions personnel decontamination procedures outlined in the Site-Specific Health & Safety Plan.

xvi. Lead cannot be removed from protective clothing or equipment by blowing, shaking or any other method, which disperses lead into the air.

xvii. Compressed air cannot be used for housekeeping purposes to clean floors and other surfaces where lead accumulates (or is potentially present).

xviii. Showers: Shower facilities shall be provided when airborne exposure to lead is above or anticipated to be above the PEL.

a. Employees must wash their hair while showering

b. If showering is not feasible on-site, valid reasons why it is not feasible must be demonstrated

c. If showers are not available on-site, all employees must wash their hands and face at the end of the work-shift

d. If showers are not available on-site, employees should take a shower off-site as soon as possible at the end of the work-shift

e. If showers are obtained off-site, employees must ensure that vehicles and off-site facilities are not cross-contaminated. Decontaminate all equipment, remove contaminated clothing, and seal re-usable decontaminated clothing (i.e. boots) in plastic bag.

xix. Changing Areas: Separate storage facilities for PPE and street clothes should be available to prevent cross-contamination. Do not mix clean and used clothing in employee spill bags.

xx. No employee may leave the work site with contaminated clothing or equipment.

b. Selection of Engineering & Work Practice Controls

i. Engineering, work practice controls, and administrative controls shall be selected to reduce and maintain employee exposure to lead below the permissible exposure limit if exposure is above the PEL for more than 30 days a year.

ii. Where engineering work practice controls and administrative controls fail to reduce employee exposure below the permissible exposure limit to lead, they

will be used to reduce employee exposure as low as possible and they shall be supplemented by respiratory protection.

iii. If engineering work practice controls and administrative controls are not feasible, the reason(s) why they are not feasible will be documented on Attachment A "Documentation of Controls in Place"

6. **Emergency Situations**

a. Where spills of lead or lead containing materials are observed, all surfaces contacted by lead shall be decontaminated.

b. Employees not engaged in decontamination and/or emergency response activities shall leave the area of the spill and shall not be permitted in the area until decontamination and/or emergency response operations are completed.

7. **Medical Surveillance**

a. It is the responsibility of Strategic Construction Solutions to ensure that any worker exposed to lead, is informed of the availability of the blood lead test, however:

i. An exposed worker may refuse to undergo a blood level test by providing a written statement refusing it. Should an employee provide the written refusal, Health & Safety should be notified and all written documentation with respect to this should then be forwarded to Human Resources for placement on their personnel file.

Note: All documentation related to lead exposure must be kept on file for a specific period of time, as governed by applicable legislative bodies

ii. An employee may not be coerced, threatened or forced to refuse part or the entire test.

iii. Should a worker have an elevated blood lead level that exceeds numerical criterion as established by regulatory agencies, legislative authorities may require the employee to be removed from further lead exposure.

b. Medical Examinations

Medical examinations shall be made available at no cost to each employee who may be exposed above 0.03 mg/m3 lead on the following schedule:

i. Annually, according to Strategic Construction Solutions medical surveillance program outlined in the Strategic Construction Solutions Health & Safety Standard Manual;

ii. As soon as possible, upon notification by an employee or receipt of air monitoring results that they had an uncontrolled exposure above the PEL;

iii. As soon as possible, upon notification by an employee that they have symptoms of lead poisoning;

iv. As soon as possible, upon notification by an employee that they desire medical advice about their ability to procreate a healthy child;

v. As soon as possible, upon notification by an employee that she is pregnant.

c. Biological Monitoring

In addition to medical examination, another significant aspect of the medical surveillance program includes biological monitoring. The test requirements that satisfy biological monitoring criteria are a whole blood lead analysis and an analysis for Zinc

Protoporphyrin, also referred to as ZPP. Whenever a blood sample is requested for lead analysis, a zinc protoporphyrin analysis is also to be performed.

i. Biological monitoring shall be made available to an employee who has had an exposure to lead = 30 micrograms of Pb/cubic meter, the Action Level (AL) on any day.

ii. Biological monitoring shall be conducted for employees exposed = AL for more than 30 days in any consecutive 12 months. The sampling will be conducted at least every 2 (two) months for the first 6 (six) months and every 6 (six) months thereafter.

a. Employees who meet the criteria both 7.6.2(1) and 7.6.2(2), but who have had a blood lead of = 40 micrograms of Pb/100 ml of blood, must be sampled at least every 2 (two) months and maintain that frequency until two consecutive blood level analyses indicate a blood lead level < 40 micrograms/100 ml.

b. If an employee is temporarily removed from exposure to Pb they must have biological monitoring conducted monthly during that removal period.

d. Medical Removal/Return to Work

i. There are two conditions that prompt temporary removal from work having exposure = AL:

a. Temporary Removal Due to Elevated Blood Lead: When an employee's blood lead level on each occasion that a periodic and a follow-up blood test indicates that the lead level is 50 = micrograms/100 ml.

b. Temporary Removal Due to a Final Medical Determination: When a final medical determination results in a medical finding, determination or opinion that the employee has a detected medical condition that places the employee's health at risk from exposure to lead.

ii. Employees will be notified in writing within 5 (five) working days after the receipt of biological monitoring results and, in addition, if their blood level is = 40 micrograms/100 ml, they will be notified that the Pb Standard requires temporary medical removal with medical removal protection and when employee's blood level is > 50 micrograms/100 ml.

iii. Employees that have had a blood lead > 50 micrograms/100 ml, shall have a second (follow-up) blood test within two weeks after the employee receives the first blood test results.

iv. Employees may return to their former job status following removal due to a blood lead level = 50 micrograms/100 ml after 2 consecutive blood sample tests indicate the employee blood level has dropped to = 40 micrograms/100 ml.

REVISION DATE	REVIEW DATE	REVISION NUMBER	REVISION COMMENTS	AUTHOR
12FEB2016	12FEB2017	2	Reformatted and edited document	K. Rodriguez
21MAR2016	21MAR2017	3	Added revisions/sections	K. Rodriguez
09/09/2016	09/09/2016	3.1	Logo Change from SCS to Strategic Construction Solutions	Bill Oswald

Attachment A

Documentation of Controls in Place

Date:	**Project Name:**	**Project #**
Location:		
Project Description:		
Project Manager:		

Check the appropriate task; put a check mark √ for yes or no as applicable.

Task	Activity	Controls Used	Yes	No
☐	EXCAVATION	Water misting		
		Empty buckets at ground level		
		Poly tarps in windy areas		
☐	FIRING RANGE or FLYASH REMOVAL	Vactor with HEPA attachment		
		Water misting		
		Ventilation		
		Poly Enclosure		
☐	SLUDGE REMOVAL	Water misting		
		Empty buckets without splashing		
		Rinse from outside space		
☐	SLUDGE SOLIDIFICATION	Water misting		
		Empty buckets at ground level		
		Poly tarps in windy areas		
☐	PAINT REMOVAL	Centrifugal blasting (abrasive is recovered and recycled)		
		Wet blasting		
		Vacuum blasting		
		Needle gun		
		Chemical removal		
		Manual scraping		
		Ventilation		
		Poly enclosure w/ventilation		
☐	CUTTING	Local (direct) ventilation		
		Remove contamination within 4 inches of cutting area		
		Work upwind of cutting area		
		Use of low heat tools: nibbler, snips, etc		
☐	SURFACE DECON	Wet wiping with tri-sodium phosphate solution		
		HEPA vacuum		

If any of the above answers were "No," explain why (method is infeasible, a better technique was chosen, exposure levels were kept below PEL when working with this substance previously, etc).

Use back of form for additional information.

HSE MANUAL

SECTION #HS B015

Lead Awareness Policy

Revision 2.1_09SEP2016

I. SCOPE

1. This document contains the Strategic Construction Solutions Asbestos Awareness policy for the Strategic Construction Solutions employees. The purpose of this procedure is to advise employees in areas where lead is suspected on an awareness level basis about the properties and dangers of lead, general guidelines and training requirements. For more information refer to the Lead Safety Policy (HS B014) for Strategic Construction Solutions.
2. This procedure applies to Strategic Construction Solutions operations where employees whose work activities may contact lead containing materials but do not disturb the material during their work activities. When work is performed on a non-owned or operated site, the operator's program shall take precedence, however, this document covers Strategic Construction Solutions employees and contractors and shall be used on owned premises, or when an operator's program doesn't exist or is less stringent.

II. RESPONSIBILITIES

1. Managers and Supervisory
    a. In coordination with the Safety Manager, develop and implement annual lead awareness training.
    b. Ensure personnel are aware of work that has the potential of exposure to lead.
    c. Identify possible locations where lead in the workplace may be found.
    d. Inform the Environmental or Safety department of upcoming work involving known or suspected lead-containing materials, allowing the Environmental Director or Safety Director to provide any necessary monitoring or other required actions.
    e. Ensure employees comply with the lead awareness requirements.
2. Safety Director:
    a. Coordinate annual lead awareness training activities.
3. Employees:
    a. Comply with the lead awareness requirements and direct any questions or concerns to the Safety Manager.
    b. Attend required annual training.
    c. Review material safety data sheets or consult with the supervisor to identify any container with lead-containing material.

III. TRAINING

1. 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 is required at time of hire, during orientation, or before assignment to areas containing lead. Refresher training must be given annually.
2. This training shall include, but not be limited to, the following:
    a. How to recognize lead containing material

b. The specific nature of the operations, which could result in exposure to lead

c. Employee's right of access to records

3. Lead awareness training will be documented including dates of training, employee name, and trainer name.

IV. REQUIREMENTS

1. **Health Effects of Lead**

   a. 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, and anemia. Long term (chronic) overexposure to lead may result in severe damage to the blood-forming, nervous, urinary, and reproductive systems.

2. **Locations**

   a. Each worksite shall create a list of possible locations of lead containing materials such as leaded paints, leaded solders, pipes, batteries, circuit boards, cathode ray tubes, leaded glass, and demolition/salvage materials.

   b. The list is to be provided to the Safety Director on a quarterly basis and revised as lead containing materials are added or eliminated from the previous list.

3. **General Requirements**

   a. Employees must abide by any signs/labels/assessment reports indicating the presence of lead containing materials and will not disturb the lead containing material. Appropriate work practices shall be followed to ensure the lead containing materials are not disturbed. Regulated access signs are to demarcate the lead exposure regulated work areas. The signs should read as follows:

   b. Employees must abide by any signs/labels/assessment reports indicating the presence of lead containing materials. Appropriate work practices must be followed to ensure the lead containing materials are not disturbed.

4. **General Work Practices**

   a. When working on multi-contractor worksites Strategic Construction Solutions employees shall be protected from exposure. If employees working immediately adjacent to a lead abatement activity are exposed to lead due to the inadequate containment of such job, Strategic Construction Solutions shall either remove the employees from the area until the enclosure breach is repaired or perform an initial exposure assessment.

b. Employees' hands and faces shall be washed if lead containing materials are contacted. Any possible contact with lead containing material must be reported immediately to the supervisor or Safety Director.

c. If air is re-circulated back into the workplace, the system must be equipped with a HEPA (high efficiency particulate air) and backup filter, and a system to monitor the lead level will be installed.

d. When using mechanical means to remove lead-containing paints or coatings, use equipment which is equipped with a HEPA collection system.

e. Whenever possible, use a wet system to reduce airborne dust.

f. Whenever possible, substitute lead material with non-leaded material.

g. Respirators shall be used during the time period required to install or implement control if engineering and work practices are insufficient as well as for emergency use.

h. If respirators are required, they will be NIOSH certified and all employees will follow the Strategic Construction Solutions Respiratory Protection Program.

REVISION DATE	REVIEW DATE	REVISION NUMBER	REVISION COMMENTS	AUTHOR
12FEB2016	12FEB2017	1	Reformatted and edited document	K. Rodriguez
18MAR2016	10MAR2017	2	Added revisions/sections	K. Rodriguez
09/09/2016	09/09/2016	2.1	Logo Change from SCS to Strategic Construction Solutions	Bill Oswald

HSE MANUAL

SECTION #HS B016

Control of Hazardous Energy
Lockout Tagout Policy

Revision 2_08APR2016

I. SCOPE

1. Strategic Construction Solutions established this Hazardous Energy Control and Lockout/Tagout Program to ensure that before any employee performs any servicing or maintenance on a machine or equipment where the unexpected energizing, start up or release of stored energy could occur and cause injury, the machine or equipment shall be isolated from the energy source, and rendered inoperative.
2. Included are procedures to place and remove appropriate Lockout devices or Tagout devices to energy isolating devices, and to otherwise disable machines or equipment and to notify personnel in preventing unexpected energizing, startup or release of stored energy.
3. Strategic Construction Solutions has adopted this policy to cover servicing, inspection and maintenance of machines and equipment in which the unexpected energizing or startup of the machines or equipment, or release of stored energy could cause injury to employees. This policy establishes minimum requirements for the control of such hazardous energy.

II. ASSIGNMENT OF RESPONSIBILITIES

1. The Safety Director is responsible to ensure the program is current and assessments on programs effectiveness are conducted annually.
2. Line managers and Supervisors are responsible to ensure engineering controls, safe work practices and procedures are in place and followed.

III. PLAN IMPLEMENTATION

1. 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.
2. 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).
3. Lockout or Tagout will be performed only by the authorized employees who are performing the servicing or maintenance and will identity affected person.
    a. Supervisor or an authorized employee will notify affected employees when Lockout or Tagout devices are applied and removed.
    b. Notification will be given before the controls are applied, and after they are removed from the machine or equipment.
4. Strategic Construction Solutions will provide Lockout and Tagout devices that will be standardized, substantial in strength and used only for isolating, securing, or blocking of machines or equipment from energy sources.
5. Strategic Construction Solutions shall conduct a periodic inspection of the program at least annually to ensure that the procedure and the requirements of this standard are being followed.

IV. TRAINING

Training will be provided to ensure that the purpose and function of the energy control program is understood by employees and that the knowledge and skills required for the safe application, usage, and removal of the energy controls is acquired by employees. Only employees who may come in contact with energized electrical equipment or stored energy will be trained

1. **Authorized Employee:** Each authorized employee will receive training in the recognition of applicable hazardous energy sources, the type and magnitude of the energy available in the workplace, and the methods and means necessary for energy isolation and control.
2. **Affected Employee:** Each affected employee will be instructed in the purpose and use of the energy control procedure.
3. **Other Employees:** All other employees whose work operations are or may be in an area where energy control procedures may be utilized, will be instructed about the procedure, and about the prohibition relating to attempts to restart or reenergize machines or equipment which are locked out or tagged out.
4. Employees should be aware that the tagout system and the tags have limitations.
    a. 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.
    b. 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.
    c. Tags must be in good condition and 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.
    d. Tags and their means of attachment must be made of materials which will withstand the environmental conditions encountered in the workplace.
    e. Preferred attachment means is a nylon single use self-locking tie wrap able to withstand 50lbs of force.
    f. Tags must be securely attached to energy isolating devices so that they cannot be inadvertently or accidentally detached during use.
    g. Additional safety measures such as the removal of an isolating circuit element, blocking of a controlling switch, opening of an extra disconnecting device, or the removal of a valve handle to reduce the likelihood of inadvertent energization should be used during the Tagout process.
5. Retraining will be provided for all authorized and affected employees whenever there is a change in their job assignments, a change in machines, equipment, or processes that present a new hazard, or when there is a change in the energy control procedures.
    a. Additional retraining will also be conducted whenever a periodic inspection reveals, or whenever management has reason to believe that there are deviations from or inadequacies in the employee's knowledge or use of the energy control procedures. Retraining will reestablish employee proficiency and introduce new or revised control methods and procedures.

6. Company will certify that employee training and/or retraining has been accomplished and is being kept up to date. Employee records will contain employee name, dates of training, and who conducted the training.

V. APPLICATION OF ENERGY ISOLATION

1. The following Lockout/Tagout energy control procedure elements and actions shall be done in the following sequence:
    a. **Preparation for Shutdown** - Before an authorized or affected employee turns off a machine or equipment, the authorized employee will have knowledge of the type and magnitude of the energy, the hazards of the energy to be controlled, and the method or means to control the energy.
    b. **Machine or Equipment Shutdown** - The machine or equipment will be turned off or shut down using the procedures established for the machine or equipment. An orderly shutdown will be utilized to avoid any additional or increased hazard(s) to employees as a result of the equipment stoppage.
    c. **Machine or Equipment Isolation** - All energy isolating devices that are needed to control the energy to the machine or equipment shall be physically located and operated in such a manner as to isolate the machine or equipment from the energy source(s).
    d. **Lockout or Tagout Device Application** –
        i. Lockout or Tagout devices will be affixed to each energy isolating device by authorized employees.
        ii. Lockout devices, where used, will be affixed in a manner to hold the energy isolating devices in a "safe" or "off" position.
        iii. Tagout devices, where used, will be affixed in such a manner as will clearly indicate that the operation or movement of energy isolating devices from the "safe" or "off" position is prohibited.
            a. Where tagout devices are used with energy isolating devices designed with the capability of being locked, the tag attachment will be fastened at the same point at which the lock would have been attached.
            b. Where a tag cannot be affixed directly to the energy isolating device, the tag will be located as close as safely possible to the device, in a position that will be immediately obvious to anyone attempting to operate the device.
    e. **Stored Energy** – Following the application of logout or tagout procedures and devices to energy isolating devices, all potentially hazardous stored or residual energy must be relieved, disconnected, restrained, and otherwise rendered safe. If there is a possibility of re-accumulation of stored energy to a hazardous level, verification of isolation shall be continued until the servicing of maintenance is completed, or until the possibility of such accumulation no longer exists. 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.

f. **Verification of Isolation** - Prior to starting work on machines or equipment that have been locked out or tagged out, the authorized employee will verify that isolation and de-energizing of the machine or equipment have been accomplished.

2. Release from Lockout or Tagout

Before employees remove Lockout or Tagout devices and energy is restored to the machine or equipment the following procedures will be followed and actions taken by the authorized employee(s).

a. The machine or equipment - The work area will be inspected to ensure that nonessential items have been removed and to ensure that machine or equipment components are operationally intact.

b. Employees –

i. The work area will be checked to ensure that all employees have been safely positioned or removed.

ii. After Lockout or Tagout devices have been removed and before a machine or equipment is started, affected employees will be notified that the Lockout or Tagout device(s) have been removed.

iii. Removal of Lockout or Tagout Devices - Each Lockout or Tagout device will be removed from each energy isolation point by the employee who applied the device. When the authorized employee who applied the lockout or tagout device is not available to remove it, that device may be removed under the direction of the Supervisor on location by following these procedure steps:

a. Verification by the Supervisor that the authorized employee who applied the device is not at the facility.

b. Making all reasonable efforts to contact the authorized employee to inform him/her that their Lockout or Tagout device has been removed.

c. Ensuring that the authorized employee has this knowledge before he/she resumes work at that facility.

3. Temporary Removal of Lockout Tagout devices

In situations where Lockout or Tagout devices must be temporarily removed and the machine or equipment energized to test or position, the following steps will be followed:

a. Clear the machine or equipment of tools and materials

b. Remove employees from the machine or equipment area

c. Remove the Lockout or Tagout devices as specified

d. Energize and proceed with testing or positioning

e. De-energizing all systems and reapply energy control measures to continue the servicing and/or maintenance.

4. Outside Personnel (Contractors, etc.)

   When contract or service personnel are working for Strategic Construction Solutions and performing work that requires lockout or tagout procedures to be applied, the Strategic Construction Solutions location supervisor and the outside employer will inform each other of their respective lockout or tagout procedures. The Strategic Construction Solutions location supervisor will ensure that his/her employees understand and comply with the restrictions and prohibitions of the outside employer's energy control program. This procedure will be verified and documented by personnel performing it.

5. Group Lockout/Tagout

   a. 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.

   b. An authorized employee will have primary responsibility for a set number of employees working under the protection of a group lockout or tagout device (such as an operations lock).

   c. Location supervisors will have responsibility to ensure the status of individual group members with regard to the lockout or tagout of the machine or equipment. Location supervisors will assign overall job-associated lockout or tagout control responsibility to an authorized employee when more than one crew, craft, department, etc. is involved, and to coordinate affected work forces and ensure continuity of protection.

   d. Each authorized employee of the work crews, craft, department, etc. 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. See attachment 1 – Group Lockout/Tagout Plan.

   e. Shift or personnel changes – If a lockout procedure will extend into the following shift, the authorized employee who originally placed the lock will remove it and it will immediately be replaced with the lock of the authorized employee who is to continue the repair or maintenance on that equipment or machine for the following shift.

   f. A Lockout/Tagout Activity Log 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. See attachment 2 – Lockout/Tagout Activity Log.

6. Compliance

   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.

VI. REFERENCE

CFR 1910.147

REVISION DATE	REVIEW DATE	REVISION NUMBER	REVISION COMMENTS	AUTHOR
03/31/2016	03/31/2017	1	Reformatted and edited document	Bill Oswald
08APR16	08APR2017	2	edits	K Rodriguez
09/09/2016	09/09/2016	2.1	Logo Change from SCS to Strategic Construction Solutions	Bill Oswald

Attachment 1 – Group Lockout/Tagout Plan

The purpose of this procedure is to ensure that all sources of hazardous energy are isolated from the work area, locked out and tagged, and tested before work begins. The Person-in-charge (Responsible Employee/Worker) is responsible for the safe execution of this procedure and must:

a) Communicate this procedure to all Authorized Employees/Workers;

b) Address concerns of employees who might be exposed, and

c) Ensure that each person understands the hazards and safety related work practices they are to use.

Start Date:	End Date:
Responsible Employee/Worker:	
Work Location or Terminal:	

1) Affected Employees/Workers working under the group lock (attach additional sheet if required):

1.
2.
3.
4.
5.
6.

2) Review drawings, tags, labels, and signs to identify and locate all disconnecting means (attach additional sheet if required):

Description of circuit(s)/equipment to be locked out:
Disconnecting means to be locked:
Sources of stored energy:

3) Notify all Affected Employees/Workers (persons in the area of the equipment and operators of equipment).

4) Shut machine or equipment down using normal stopping procedures and relieve stored energy.

5) De-activate the energy isolating device and apply your lock to the disconnecting device. (For electrical disconnect switches test for absence of voltage prior to locking).

6) Method used to dissipate or restrain stored energy (attach additional sheet if required):

Electrical/capacitors – grounding:	
Springs/elevated machines – blocking	
Hydraulic/pneumatic – bleeding	
Other:	

7) Verify equipment is disconnected by operating controls or by testing the equipment will not operate (make sure no personnel will be exposed during this step). **Caution:** Return operating controls to neutral or off position.

Restoring Equipment to Service

1. Visually verify that all job/tasks are complete
2. Check area to ensure that tools and nonessential items are removed, housekeeping appropriate
3. Check all guards and covers installed properly, grounding equipment removed, and equipment is operationally intact
4. Check that all controls are in neutral position
5. Verify status of all employees working under group lockout (safely positioned or removed)
6. Notify all personnel involved in the job/task that work is complete and system will be returned to service
7. Remove lockout devices and notify Affected Employees/Workers that work is complete and equipment is ready for use

Attachment 2 – Lockout/Tagout Activity Log

Lockout/Tagout Log						
List who applied the LOTO device Employee Name:	List system or equipment is being isolated.	Location LOTO was applied	Configuration of switch or valve, on/off, blinded or removed	Date & time applied	Date & time removed	Name of employee removing device

Signature of Supervisor ensuring all devices have been removed: _____Date:_____

HSE MANUAL

SECTION # HS B018

Hazard Identification Risk Assessment
JSA Policy

Revision 2.1_09SEP2016

I. SCOPE

Strategic Construction Solutions is committed to providing a safe and healthy work environment for our employees.

The purposes of this policy is to provide guidelines for identifying, assessing and controlling workplace hazards; to ensure the potential hazards of new processes and materials are identified before they are introduced into the workplace; to identify the jobs/tasks which require risk assessment.

II. RESPONSIBILITIES

Strategic Construction Solutions must assess a work site and identify existing or potential hazards before work begins at the work site or prior to the commencement of a new work site

III. HAZARD AND RISK IDENTIFICATION

A. The hazard identification process is used for routine and non-routine activities as well as new processes, changes in operation, products or services as applicable.

B. The Project Manager shall conduct a baseline worksite hazard assessment which is a formal process in place to identify the various tasks that are to be performed by Strategic Construction Solutions employees, and to identify potential hazards. The results are included in a report of the results of the hazard assessment and the methods used to control or eliminate the hazards identified. The hazard assessment report must be signed and have the date on it.

C. Inputs into the baseline hazard identification include, but are not limited to:

1. Scope of work
2. Legal and other requirements
3. Previous incidents and non-conformances
4. Sources of energy, contaminants and other environmental conditions that can cause injury
5. Walk through of work environment

D. Hazards identifications (as examples) are to include:

1. Working Alone
2. Thermal Exposure
3. Isolation of Energy
4. Hearing Protection
5. Musculoskeletal Disorders
6. Bloodborne Pathogens
7. Confined Spaces
8. Driving
9. General Safety Precautions
10. Any established policy or procedure by Strategic Construction Solutions

11. Any other site specific work scope

E. Strategic Construction Solutions has a formal process for identifying potential hazards. Processes are in place to identify potential hazards by the use of JSA's, JHA's, facility wide or area specific analysis/inspections.

F. All identified hazards are assessed for risk and risk controls are assigned on the Hazard Assessment Form (Attachment A) for that specific hazard.

G. Employees and/or sub-contractors are actively involved in the hazard identification process. The Strategic Construction Solutions policy provides processes to ensure employees and/or sub-contractors are actively involved in the hazard identification process and hazards are reviewed with all employees concerned.

H. Employees are trained in the hazard identification process. Employees will be trained in the hazard identification process including the use and care of proper PPE.

I. Unsafe hazards must be reported immediately and addressed by the supervisor. The supervisor discusses the worksite hazard assessment with employees at the respective work location.

J. **Review of Hazard Assessment:** Existing worksite hazard identifications are formally reviewed annually or repeated at reasonably practicable intervals to prevent the development of unsafe and unhealthy working conditions. The Hazard Assessment Form will be updated when new tasks are to be performed that have not been through the risk assessment process. This could be when a work process or operation changes, before the construction of a new site or when significant additions or alterations to a job site are made.

K. The respective supervisor or project manager will make the changes as additional hazards are introduced into the work place in order to revise planning and assessment needs.

IV. RISK ASSESSMENT

A. Hazards are classified and ranked based on severity. On the Hazard Assessment form, the identified hazards are classified/prioritized and addressed based on the risk associated with the task. (See the risk analysis matrix outlining severity and probability).

CONSEQUENCE					PROBABILITY				
					A	B	C	D	E
Severity	People	Assets	Environment	Reputation	Not Done	Rarely	Once a week	Several Times in a Week	Multiple Times in a Day
0	No health effect	No damage	No effect	No impact					
1	Slight health effect	Slight damage	Slight effect	Slight impact					
2	Minor health effect	Minor damage	Minor effect	Limited impact					
3	Major health effect	Localized damage	Localized effect	Considerable impact					
4	Single fatality	Major damage	Major effect	National impact					
5	Multiple fatalities	Extensive damage	Massive effect	Global impact					
Key	Manage for continuous improvement (Low)			Incorporate risk reduction measures (Medium)				Intolerable (High)	

V. RISK CONTROLS/METHODS

The following describes how identified hazards are addressed and mitigated:

1. Risk assessed hazards are compiled with and addressed and mitigated through dedicated assignment, appropriate documentation of completion, and implemented controls methods including engineering or administrative controls and PPE required into the worksite hazard assessment of the site specific HSE plan. No work will begin before the worksite assessment is completed. Additionally, no risk assessed as High (Intolerable) shall be performed.
2. If an existing or potential hazard to workers is identified during a hazard assessment Strategic Construction Solutions must take measures to eliminate the hazard, or if elimination is not reasonably practicable, control the hazard. If reasonably practicable, Strategic Construction Solutions must eliminate or control a hazard through the Hierarchy of Controls Method through the use of the following in order.
    a) Engineering controls: Using engineering practices to remove the hazard from the work place.
    b) If a hazard cannot be adequately controlled using engineering controls, Strategic Construction Solutions must use administrative controls that control the hazard to a level as low as reasonably achievable.
    c) If the hazard cannot be adequately controlled using engineering and/or administrative controls, Strategic Construction Solutions must ensure that the appropriate personal protective equipment (PPE) is used by workers affected by the hazard.
    d) Strategic Construction Solutions may use a combination of engineering controls, administrative controls, and personal protective equipment if there is a greater level of worker safety because a combination is used.

B. **Emergency Control of Hazards:** Only those employees competent in correcting emergency controls of hazards may be exposed to the hazard and only the minimum number of competent employees may be exposed during hazard emergency control.

C. **Certification of Hazard Assessment:** The Project Manager completes and signs the certification of hazard assessment for the worksite hazard assessment (also see PPE Program HS C010) and includes it within the site specific HSE plan.

D. **Job Safety Analysis (JSA):** Job Safety Analyses (JSA) prevents accidents and workplace illnesses by improving employee skills and awareness through an organized process. A JSA is an evaluation tool used to identify potential accidents or hazards and then implement safe job procedures.

E. **Site Specific HSE Plan (SSSP):** Each work location has a site specific HSE plan. Each employee reporting to a location shall receive a documented orientation from an Strategic Construction Solutions supervisor that includes the SSSP for that site. The SSSP contains the Strategic Construction Solutions Health and Safety Policy, site specific safety requirements as well as a PPE matrix and a signed site specific worksite hazard assessment for that location, which the Strategic Construction Solutions has a responsibility to provide.

VI. REVIEW PROCESS

A. The hazard assessment program will be reviewed to ensure no new hazards derived from the corrective measures.

VII. JOB SAFETY ANALYSIS

A. **General:** The JSA is a systematic method of identifying hazards and control measures to safely perform a specific job or task. The process involves breaking down a particular job/task into a series of simple steps. In each of these steps, hazards are identified and documented using Appendix A. Appendices B and C are examples of JSAs. After these hazards are identified, then solutions and recommendations for the prevention of accidents shall also be documented in the analysis.

B. **Job Safety Analysis Procedures**

1. **Step 1: Select the Job:** In selecting jobs to be analyzed and in establishing the order of analysis, the following factors should be considered. They are listed in order of importance.

    a) Occurrence of injuries: Jobs that have produced an incident or accident trend, or death, during the past three years shall be analyzed.

    b) Frequency of Accidents: Jobs that repeatedly produce accidents (trends) are candidates for a JSA. The greater the number of accidents associated with the job, the greater its priority for a JSA. Subsequent injuries indicate that preventive action taken prior to their occurrence was not successful.

    c) Potential Severity: Some jobs may not have a history of accidents but may have the potential for severe injury or property damage. The greater the potential severity of risk, the greater its priority to complete a JSA.

    d) New Jobs or a Change in a Job: New operations created by changes in equipment or processes obviously have no history of accidents, but their accident potential should be fully appreciated. A JSA shall be made on every new job with potential hazards. Analysis should not be delayed until an accident or incident occurs.

    e) On Construction Sites: Due to the ever changing dynamics of a construction site a daily JSA should be completed to identify the changing hazards of the work site. Each JSA should reflect the current task and hazards associated with this task.

2. **Step 2: Perform the analysis:** The supervisor responsible for the job/task should perform the JSA using the JSA. The supervisor shall conduct the JSA with the help of employees who regularly perform the task. The job being analyzed should be broken down into a sequence of tasks that describe the process in detail. Avoid two common errors:

    a) Making the breakdown too detailed so that an unnecessarily large number of steps result

    b) Making the job breakdown so general that the basic steps are not distinguishable

    As a rule, the JSA should contain less than 12 steps. If more steps are needed, the job should be broken into separate tasks.

    Select an experienced, capable, and cooperative person who is willing to share ideas. They should be familiar with the purpose and method of a JSA. Reviewing a completed JSA before conducing one will help illustrate the terminology and procedure to be followed.

    Review the breakdown and analysis with the person who performed the job to ensure agreement of the sequence and description of the steps. Variations of routine procedure should also be analyzed. The wording for each step should be with an action words such as “remove,” “open,” or “lift.”

3. **Step 3: Identify Hazards:** Hazards associated with each step are identified. To ensure a thorough analysis, answer the following questions about each step of the operation:

a) Is there a danger of striking against, being struck by, or otherwise making injurious contact with an object?

b) Can the employee be caught in, by, or between the objects?

c) Is there a potential for a slip or trip?

d) Can someone fall on the same level or to another?

e) Can employees strain themselves by pushing, pulling, lifting, bending, or twisting?

f) Is the environment hazardous to one's health (toxic gas, vapor, mist, fumes, dust, heat, or radiation)? Using the JSA form, document hazards associated with each step. Check with the employee who performed the job and others experienced in performing the job for additional ideas. A reliable list may be developed through observation and discussion.

4. **Step 4: Develop Solutions:** The final step in job safety analysis is to develop a safe, efficient job procedure to prevent accidents. The principal solutions for minimizing hazards that are identified in the analysis are as follows:

a) Find a new way to do the job. To find an entirely new way to perform a task, determine the goal of the operation and analyze the various ways of reaching this goal. Select the safest method. Consider work saving tools and equipment.

b) Change the physical conditions that create the hazard. If a new way to perform the job cannot be developed, change the physical conditions (such as tools, materials, equipment, layout, location) to eliminate or control the hazard.

c) Change the work procedure to eliminate the hazard. Investigate changes in the job procedure that would enable employees to perform the task without being exposed to the hazard.

d) Reduce the frequency of its performance. Often a repair or service job has to be repeated frequently because of another condition that needs correction. This is particularly true in maintenance and material handling. To reduce the frequency of a repetitive job, eliminate the condition or practice that result in excessive repairs or service. If the condition cannot be eliminated, attempt to minimize the effect of the condition.

Reducing the number of times a job is performed contributes to safer operations only because the frequency of exposure to the hazard is reduced. It is, of course, preferable to eliminate hazards and prevent exposure by changing physical conditions or revising the job procedure or both.

In developing solutions, general precautions such as "be alert," "use caution," or "be careful" are useless. Solutions shall precisely state what to do and how to do it. For example, "make certain the wrench does not slip or cause loss of balance" does not tell how to prevent the wrench form slipping. A good recommendation explains both "what" and "how". For example, "set wrench jaws securely on the bolt. Test its grip by exerting slight pressure on it. Brace yourself against something immovable, or take a solid stance with feet wide apart, before exerting slow steady pressure." This recommendation reduces the possibility of a loss of balance if the wrench slips.

If a job or process is changed dramatically, it should be discussed with all personnel involved to determine the possible consequences of the changes. Such discussions check the accuracy of the JSA and involve personnel in an effort to reduce job hazards.

5. **Step 5: Conduct a follow up analysis:** No less than once per month, each supervisor should observe employees as they perform at least one job for which a JSA has been developed. The purpose of these observations is to determine whether or not the employees are doing the jobs in accordance with the safety procedures developed. The supervisor should review the JSA before doing the follow-up review to reinforce the proper procedures that are to be followed.

6. **Step 6: Use of the Job Safety Analysis:** The JSA provides a learning opportunity for the supervisor and employee. Copies of the JSA should be distributed to all employees who perform that job. The supervisor should explain the analysis to the employees and, if necessary, provide additional training.

   New employees or employees asked to perform new tasks must be trained to use the safe and efficient procedures developed in the JSA. The new employee should be taught the correct method to perform a task before dangerous habits develop, to recognize the hazards associated with each job step, and to use the necessary precautions to avoid injury or accidents.

   Jobs that are performed infrequently require additional effect to minimize accident potential. Pre-job instruction addressing the points listed on the JSA will serve as a refresher to employees who may have forgotten some of the hazards in performing the task and the proper procedure to be used to avoid these hazards.

   Finally, the JSA is an incident/accident investigation tool. When incidents/accidents occur involving a job for which a JSA has been performed, the analysis should be reviewed to determine if proper procedures were followed or if the procedures should be revised.

7. **Step 7: Recordkeeping for Job Safety Analysis**: Documentation is an important part of performing a JSA. Records must be uniform and consistent so that many people can understand and use this information. JSA forms should be maintained in the department creating the documents and should be readily accessible. An index identifying the job/task, the date the JSA was completed, and the date the analysis was revised should be maintained.

VIII. TRAINING

A. **Initial Training**

1. All new employees will be trained on how the JSA works and it purpose.
2. New employees or employees who are asked to perform new jobs/tasks shall be trained to use the procedures developed in the JSA.

B. **Refresher Training**

1. Supervisors/PIs will perform and document employee training on completed/existing JSAs at least annually.
2. Jobs that are performed infrequently require additional effort to minimize accident potential. Pre-job instruction will serve as a refresher so that employees may remember and avoid any hazards.

IX. RECORDKEEPING

A. Supervisors: Maintain a copy of employee training records for a minimum of six years.

1. JSA forms will be maintained and readily accessible.

X. REFERENCES

A. OSHA Regulation 29 CFR 1910.132;

B. Job Hazard Assessment OSHA Publications Handbook 3071;

REVISION DATE	REVIEW DATE	REVISION NUMBER	REVISION COMMENTS	AUTHOR
04/04/2016	04/04/2016	1	created document	Bill Oswald
11APR2016	11APR2017	2	Edits and added attachments	K Rodriguez
09/09/2016	09/09/2016	2.1	Logo Change from SCS to Strategic Construction Solutions	Bill Oswald

ATTACHMENT 1

Hazard Identification and Risk Assessment Form

This hazard Identification and risk assessment is for _____Location.

Date of Assessment: _____ Assessment conducted by _____ .

List Task being assessed:

Task Steps	Risk Level	Hazards Identified	Engineering Controls	Administrative Controls	PPE or Barriers
1.					
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					

Note:

1. Hazards written in should be the ones directly associated with the particular step of the task.
2. Engineering controls are listed if an engineering solution can eliminate exposure to the hazard.
3. Administrative controls are Policies, procedures or work restrictions set by management.
4. PPE is the last line of defense and must list specific type used for the task step.

ATTACHMENT 2

JSA Form

This JSA is valid only for the work, date, and time specified. This JSA shall be posted at the work site during the work activity. If the terms noted change, work must be stopped and the JSA reissued. Fire and/or Emergency Alarm automatically invalidate the JSA. When the work is completed or the JSA expires, return the JSA to the supervisor marked "Complete."

Project Name and Number: _____ Date: _____

Location: _____ Supervisor: _____ Start Time: _____ End Time: _____

Description of Work: _____

A. Employees Task Trained: ❒ YES ❒ NO ❒ N/A

What Equipment will be used:

_____

_____

_____

_____

B. Emergency Assembly Point:

Primary:	
Secondary:	
Weather Conditions:	

C. Safety Checklist Requirements: (See Page 2)

Access	❒Yes	❒No
Electrical	❒Yes	❒No
Excavation	❒Yes	❒No
Emergency equipment locations	❒Yes	❒No
Hazards (Body)	❒Yes	❒No
New Worker	❒Yes	❒No
Pipeline	❒Yes	❒No
Hazards (Environmental)	❒Yes	❒No
Equipment/Lifting	❒Yes	❒No
Overhead Work	❒Yes	❒No
Process/Equipment	❒Yes	❒No
Tools	❒Yes	❒No
Personal Protective equipment	❒Yes	❒No
Stand-By Person	❒Yes	❒No
Welding/Burning	❒Yes	❒No
Hazards	❒Yes	❒No
Bodies Of Water	❒Yes	❒No

D. Permits Required (displayed and properly signed):

High Wall Permit	❒Yes	❒No	Excavation	❒Yes	❒No
LOTOTO	❒Yes	❒No	Confined Space	❒Yes	❒No
Line Locate	❒Yes	❒No	Hot Work	❒Yes	❒No
Open Hole	❒Yes	❒No	HDPE	❒Yes	❒No

E. Is there a Safety Plan for this project? ☐ Yes ☐ No ☐ N/A

F. Is there special training required for this project?

G. Potential hazards:

H. Actions taken to eliminate hazards:

I. Tools, materials, and safety equipment required:

J. Signatures showing acceptance of this safe task plan:

Please print & sign your names below: (Foreman & Crew)

Check off and discuss all pertinent items from the attached checklist that apply to the scope of work being performed. The items that are checked shall be discussed with the crew performing the work to ensure that all understand the safety requirements necessary to safely perform this task.

ACCESS
- ☐ Scaffold (properly inspected) Date: _____
- ☐ Scaffold (complete handrails, toe boards, solidly decked)
- ☐ Ladder (condition, secured, placement)
- ☐ Walkways and Handrails
- ☐ Fall protection

ELECTRICAL
- ☐ Lockout/tagged (Try start/stop switch)
- ☐ Color code current
- ☐ Disconnected (if required)
- ☐ Properly grounded tools
- ☐ Good condition
- ☐ Trained

EXCAVATION
- ☐ Properly Shored/Sloped or Benched
- ☐ Escape Ladder provided
- ☐ Competent Person on site
- ☐ Entry Permit required soil
- ☐ Typed/Documented
- ☐ Daily Inspection (Documented)
- ☐ Barricaded properly

EMERGENCY EQUIPMENT LOCATIONS
- ☐ Fire Hoses/Hydrants located at _____
- ☐ Fire Extinguishers located at _____
- ☐ Safety Shower located at _____
- ☐ Eye Wash located at _____
- ☐ Medical located at _____
- ☐ Emergency phone numbers _____

HAZARDS (Body)
- ☐ Fall potential
- ☐ Pinch points
- ☐ Electrical Shock
- ☐ Housekeeping
- ☐ Slip/Trip (Cords, Pipe, etc.)
- ☐ Flying particles
- ☐ Thermal burns
- ☐ Sharp objects

NEW WORKER
- ☐ Site orientation
- ☐ Buddy assigned

HDPE
- ☐ Pipe pulling permit
- ☐ Tools for pipe size
- ☐ Unloading checklist
- ☐ Pipe pulling equip
- ☐ Rigging
- ☐ Exemptions
- ☐ Pipe chocked
- ☐ Generator resistivity
- ☐ Data logger
- ☐ Yellow marker flags
- ☐ Safe area for HDPE operations

HAZARDS (Environmental)
- ☐ Airborne particulate (Fumes, Mists)
- ☐ Heat stress (Hot/Cold Surfaces)
- ☐ Materials adequate
- ☐ Lighting
- ☐ Noise
- ☐ Access/Egress
- ☐ Radiation from radiography
- ☐ Radiation from other source

EQUIPMENT/LIFTING
- ☐ Operator Certified/Licensed
- ☐ Good equipment condition
- ☐ Backup warning device
- ☐ Forklift
- ☐ Man lift
- ☐ Boom Truck
- ☐ Crane
- ☐ Load charts
- ☐ Position hooks
- ☐ Proper rigging
- ☐ Chain fall
- ☐ Overhead lines
- ☐ Personnel basket permit

OVERHEAD WORK
- ☐ Barricades/Tags
- ☐ Signs
- ☐ Hole cover handrail
- ☐ Grating secured
- ☐ Fall protection in place
- ☐ Life lines properly installed/inspected

PROCESS/EQUIPMENT
- ☐ Valves blocked in tags hung
- ☐ Equipment cleared
- ☐ Blinds installed and tagged
- ☐ Blind list
- ☐ HazCom summary
- ☐ LOTOTO complete

TOOLS
- ☐ Current inspection
- ☐ Proper tools
- ☐ Good tools condition
- ☐ Tool use instructions
- ☐ Color code current

PERSONAL PROTECTIVE EQUIPMENT
- ☐ Hardhat
- ☐ Safety glasses
- ☐ Mono goggles
- ☐ Ear protection
- ☐ Face Shield/Burning Goggle
- ☐ Proper type respirator
- ☐ Fresh air
- ☐ Gloves
- ☐ Safety-Toe shoes
- ☐ Metatarsal guards
- ☐ Rubber boots
- ☐ Other safety footwear
- ☐ Fire retardant clothing
- ☐ Slicker suit
- ☐ Acid suit
- ☐ Safety Harness/Lanyard
- ☐ H_2S Monitor
- ☐ Life Jacket
- ☐ Fall Protection
- ☐ Other (List): _____

STAND-BY PERSON
- ☐ Confined space entry (Hole-Watch)
- ☐ Spotter
- ☐ Fire watch
- ☐ Attendant traffic
- ☐ Flagman

WELDING / BURNING
- ☐ Spark Arrestors
- ☐ Combustibles Spark
- ☐ Containment Shields
- ☐ Grounding
- ☐ Water Hose
- ☐ Fire Extinguishers (Inspected/Nearby)
- ☐ Fire Blanket
- ☐ Cylinders Secured
- ☐ Cylinder Caps in Place

HAZARDS
- ☐ Hygiene
- ☐ Chemical burns
- ☐ Eyes
- ☐ Flammable
- ☐ Inhalation
- ☐ Skin contamination

COMMUNICATION
- ☐ Radio

MISC. TOPICS: _____

Forman/On Site Safety Personnel
Time/Date

HSE MANUAL

SECTION #HS C001

Health and Safety Disciplinary Policy

Revision 3.1_09SEP2016

I. SCOPE

At Strategic Construction Solutions the safety and health of our employees is the first consideration. This policy is to communicate disciplinary measures taken against employees found to be in violation of the company Health and Safety program.

It is the responsibility of every employee to follow all safety rules at all times. It is the responsibility of every employee to inform their immediate supervisor of any safety hazards noted in the workplace, and to warn other employees of those hazards.

Every employee is authorized and required to stop any activities which may endanger the health and safety of any person on or around Strategic Construction Solutions operations.

II. ENFORCEMENT OF SAFETY POLICIES

1. The compliance of all employees with Strategic Construction Solutions 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 contents of this policy.
2. Employees who are in a position of a management, supervisory or a foreman 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 PPE, abuse of selected PPE, and etc. constitutes a safety violation. This list id not all inclusive and the determination of what constitutes a safety violation will be left up to the discretion of onsite supervision and/or management.
3. 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.

III. SAFETY COMPLIANCE PROGRAMS

The following programs will be utilized to ensure employee compliance with the safety program and all safety rules:

1. 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 Strategic Construction Solutions safety policies.

2. Retraining

   Employees that are observed performing unsafe acts or not following proper procedures or rules will be retrained. Retraining for failure to follow safety guidelines will be documented and placed into the employee file. If multiple employees are involved, additional safety meetings will be held.

3. Safety Incentive Programs

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

4. Disciplinary Action

   The failure of an employee to adhere to safety policies and procedures established by Strategic Construction Solutions 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 Strategic Construction Solutions safety policies will be subject to disciplinary action.

When an employee is noted violating safety policies and procedures the employees' immediate supervisor 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 Strategic Construction Solutions 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.

IV. DISCIPLINARY ACTIONS

The following outlines the disciplinary measures which may be taken against employees found to be in violation.

1. Violations of safety rules and standard safe practices as outlined in Job Safety Analysis 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 Strategic Construction Solutions system of discipline. If, after training, violations occur, disciplinary action will be administered.
2. Examples of how the progression of discipline should be carried out is as follows:
   a. Verbal warning - Documented, including date and facts on the Employee Corrective Action Form (Attachment 1). Add any pertinent witness statements. Restate the policy and correct practice(s).
   b. Written warning – Same as verbal warning with retraining as to how to correct behavior.
   c. Written warning with suspension – Must be approved through HR Director prior to issuing suspension.
   d. Termination - Must be approved through HR Director prior to the termination.
3. Strategic Construction Solutions system of progressive discipline policy is a guideline for discipline. Strategic Construction Solutions has the discretion to modify as needed the progression of discipline. The final determination of what constitutes a safety violation will be left up to the discretion of onsite supervision, the Safety Director and/or Director of Human Recourses.
4. Any discipline that requires more than a written warning must be approved by the Director of Human Recourses. 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. Supervisors should consult with the Corporate Office/Human Resources, if there is any question about whether or not disciplinary

action is justified. Employees may be terminated immediately for willful or extremely serious violations.

V. MANAGEMENT DISCIPLINARY REVIEW

Some employee disciplinary actions may require review by the Management Disciplinary Review team. This may be made up of the Employee's immediate supervisor, the Project Manager, VP, Safety Director, Director of Human Resources, and any others with knowledge or experience in the issues to be discussed. The Management Review team will evaluate the issues involved, recommend disciplinary actions, and recommend corrective actions.

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

REVISION DATE	REVIEW DATE	REVISION NUMBER	REVISION COMMENTS	AUTHOR
10/05/2015	10/07/2015	1	Reformatted and edited document	Bill Oswald
10/29/2015	10/29/2016	2	Reformatted and edited document	K. Stovall
15MAR2016	15MAR2016	3	Edited document	K. Rodriguez
09/09/2016	09/09/2016	3.1	Logo Change from SCS to Strategic Construction Solutions	Bill Oswald

Attachment 1

Employee Corrective Action Form

Employee Name: _____ Date: _____

Job Title: _____ Supervisor _____

Level of Corrective Action			
Verbal Warning ❒	Written Warning ❒	Suspension ❒	Termination ❒

Facts:	
Objective:	
Solution:	
Action/Comments:	
Employee Comments:	

I acknowledge that the above unsatisfactory performance/behavior has been discussed with me. I understand that either failure to improve my performance/behavior or additional incidence(s) of any unsatisfactory performance or behavior may result in further corrective action, up to and including recommendation for termination.

Employee Signature:		Date:	
Supervisors Signature:		Date:	
HR approval:		Date:	

A copy of this corrective action will be placed in your personnel file for reference.

SUPERVISOR INSTRUCTIONS

Below are guidelines for using the Employee Corrective Action Form.

When documenting corrective action, it is helpful to adhere to the following guidelines:

- Facts - List only facts, not opinions. Give concrete examples, when possible, to document the behavior.
- Objectives - What is the desired outcome? What do you expect? You may want to cite a portion of the job description or a policy.
- Solutions - How do you suggest that he/she improve their performance? Does the employee have any suggestions? You may offer additional training, review of procedures, etc.
- Action - Tell the employee in writing that he or she is receiving a warning, suspension, etc. and set a date to review his or her progress towards obtaining the goals set.

Directions for Submitting the Corrective Action Form

The employee must sign the Corrective Action form to acknowledge receipt. If the employee refuses to sign, write “refused to sign” and sign your name as a witness.

In the event of suspension affecting pay or termination, an Employee Corrective Action form must be completed and submitted to the HR Director for approval prior to the execution of a suspension or termination.

The supervisor should give a copy of the signed document to the employee and send the original to the Human Resources Department in a sealed envelope. The Corrective Action will be placed in the personnel file.

STRATEGIC
CONSTRUCTION SOLUTIONS

HSE MANUAL

SECTION #HS C002

Driver Safety Policy

Revision 2.1_09SEP2016

I. SCOPE

1. Strategic Construction Solutions has adopted this policy for Driver Safety to ensure the safety of employees. Many Company operations are conducted in remote locations and require driving to and from locations. This Policy is to ensure the safe operation of company vehicles.
2. Drivers of Company Commercial vehicles are also required to follow Department of Transportation (DOT) requirements as well as other Strategic Construction Solutions policies and procedures for the operation of large commercial vehicles.
3. The Health and Safety Director is responsible for ensuring that the following policy for control is updated and audited for effectiveness. Supervisors/Crew Chiefs are responsible to ensure employees are trained and personal protective equipment and safe work practices are enforced.

II. DRIVER QUALIFICATION

1. Strategic Construction Solutions 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.
2. 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.
3. 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:
    a. Alcohol
    b. Illegal drugs
    c. Prescription or over the counter medications - without prior approval
4. Authorized drivers will report to the appropriate personnel any of the following:
    a. Collision
    b. Traffic violation, or
    c. Near miss incident
5. Seat belts will be worn by all occupants at all times whenever the vehicle is in motion.

III. VEHICLE REQUIREMENTS

1. The company vehicle must be fit for the purposes intended, and will be maintained in a safe working order. Operators of company vehicles will ensure that required regular maintenance is conducted in a timely manner. Operators will inspect vehicles prior to use. Any vehicle issue that could affect the safe operation must be corrected prior to use.
2. The following items should be visibly inspected prior to using a Company vehicle:
    a. Tire Pressure
    b. Oil Level
    c. Lights
    d. Windshield
    e. Mirrors

3. When transporting loads, the load will be secured, and will not exceed the manufacturers load specifications, or the legal limits for the vehicle.

IV. SAFE DRIVING PRACTICES

1. General driving requirements

   All authorized drivers will follow safe driving practices and safe driving behaviors to include but not limited to:

   a. Personal electronic devices such as Cell phone, Blackberries, etc. use is prohibited while driving. Hands-free devices are an alternative. Drivers should pull over in a safe location with the vehicle parked before using a cellphone.

   b. Drivers shall not text or send Emails while driving company vehicles.

   c. Drivers shall not use laptops or tablets while driving.

   d. Employees should refrain from eating or drinking while driving.

   e. Do not exceed the posted speed limit.

   f. Maintaining a safe distance between other vehicles.

   g. Do not exceed the occupant capacity of the vehicle.

   h. Drivers should plan the safest route to their destination in advance.

   i. Drivers should take regular breaks when driving long distances and should not drive more than 14 hours in a day.

   j. All tools, luggage or other materials carried in the passenger compartment shall be properly secured.

   k. Employees are expected to observe all traffic regulations including posted speed limits. Remember, speed limits are set for ideal conditions and must be adjusted according to driving conditions.

   l. Drivers must be licensed, trained and medically fit to operate the vehicle.

   m. Drivers shall report to their supervisor any medical, physical, or psychological condition that would impair his/her ability to safely operate a vehicle.

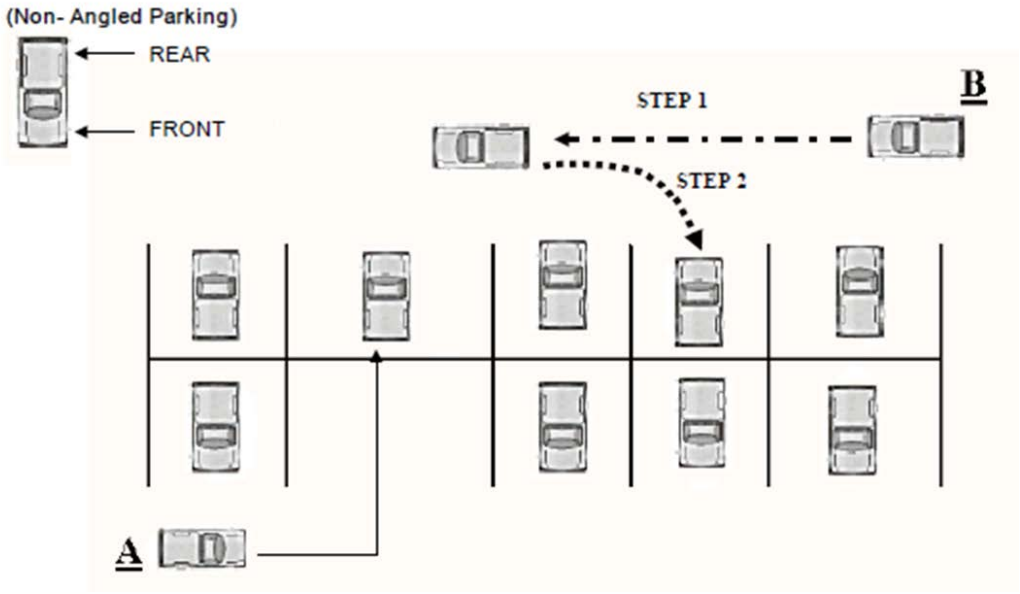
   n. Drivers shall maintain a valid driver's license and inform their immediate supervisor of any restrictions that may be a result of traffic violations or driving citations.

2. Emergency Equipment

   a. Each company owned truck should have at all times a fire extinguishers, first aid kits, and Safety manual.

3. MSHA sites require all vehicles not parked in a paved parking lot should be parked in a parking ditch, against a berm, or chocked with the parking brake set.

4. Backing in parking or first move forward when parking a vehicle. Upon arrival a drivers objective must be to legally park in a position where their first move upon departure will be forward. It is the responsibility of the vehicle operator to make a thorough assessment of the area before moving the vehicle. When possible, a spotter should be used to prevent an incident. Examples of parking or first move forward.



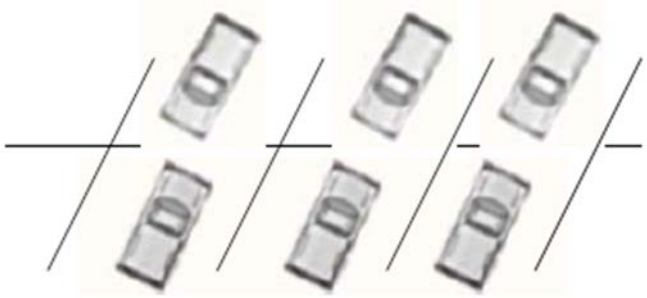
a. (As illustrated at **A**) If possible, pull straight into a non–angled parking space so that you can move forward when you leave instead of having to back out into traffic.

b. (As illustrated at **B**) As a second alternative, back into a non-angled parking space so that you can move forward when you leave instead of having to back up into traffic. The suggested method:

   i. First drive past the parking space you intend to park in to observe space is clear of any obstructions.

   ii. Proceed to back in parking space slowly while looking back and periodically using all mirrors. Utilize a person to assist you back in when available.

c. Angled Parking



NOTE: The "First Move Forward" technique cannot be practiced in Angled Parking Lots.

V. MANAGEMENT DISCIPLINARY REVIEW

1. Organization and Responsibilities

   a. Management will implement the Fleet Safety Policy in their areas of responsibility, establish measurement objectives to comply with this policy, provide assistance and the resources necessary to implement and maintain this policy.

   b. Supervisors will be responsible for taking appropriate action to manage high-risk drivers as defined by this program.

c. Supervisors shall investigate, complete all reports, and verify that a drug and alcohol screen has been done on employees involved in accidents or property damage involving an Strategic Construction Solutions vehicle.

d. The Corporate Safety Department will revise and distribute changes to the Fleet Safety Policy to managers, supervisors, and drivers as necessary and maintain appropriate records.

e. Employees will drive a motor vehicle in a safe manner as explained under the section titled, “Driver Safety Requirements”, maintain a valid driver license and meet minimum insurance requirements on personal vehicles used in company business, and maintain assigned vehicles according to established maintenance standards.

2. Vehicle Use

a. Employees authorized by their supervisors will be permitted to operate Strategic Construction Solutions vehicles that are not regulated under DOT Standards.

b. Any employee using a company vehicle for personal use will be responsible for any necessary repairs to the Strategic Construction Solutions vehicle, other vehicles, liability and medical expenses for themselves and others if they are involved in an accident.

c. No one, other than Strategic Construction Solutions employees shall be allowed to drive company vehicles. This applies to spouses and family members.

d. Only employees with the appropriate Commercial Driver License (CDL), who have been included into the Federal Motor Carriers Safety Administration (FMCSA) recordkeeping program, will be permitted to drive a Commercial Motor Vehicle (CMV) over 26,001lbs.

e. Employees that are involved in an accident and/or receive a citation, no matter how minor, shall report it immediately to their supervisor. Disciplinary action will be taken for employees not reporting accidents and/or incidents.

f. Vehicle use shall not be used outside of the normal design of the vehicle.

3. Driver Selection

a. Management will review Motor Vehicle Records (MVR), driving performance, and work experience through previous employers, reference checks, and/or other agencies at the time of employment.

b. Management will review the employee’s MVR annually (more frequently if reasons warrant), and ensure the employee has a valid driver license.

c. All drivers must be at least eighteen (18) years of age.

d. Where applicable, drivers will comply with FMCSA (CDL) regulations.

4. High Risk Drivers

a. A driver or prospective driver will not be allowed to drive a vehicle if records, actions, and/or Safety or Human Recourses Department determine such.

b. Additionally, a driver or prospective driver's history and conduct shall be extensively reviewed if the prospective driver’s accident and/or violation history includes one (1) or more of the following:

i. Driving under the influence of alcohol or drugs (DWI/DUI)

ii. Hit and run

iii. Failure to report an accident

iv. Negligent homicide arising out of the use of a motor vehicle

v. Operating during a period of suspension or revocation

vi. Using a motor vehicle in the commission of a felony

vii. Reckless driving

viii. Speeding citations three (3) or more in a three (3) year period

ix. Two (2) preventable accidents in a twelve (12) month period

c. All accidents and citations of violations will be reported to management immediately, investigated, documented, and reviewed by the Safety Department

d. If an employee's driver license is revoked, suspended, or otherwise denied, it is the responsibility of the employee to advise his/her supervisor immediately and not drive an Strategic Construction Solutions vehicle until reinstated as a legal driver by the license issuing authority. Disciplinary action will be taken for employees not reporting the loss of their driving privilege. The following chart should be used as a guide for disciplinary action of employees who have violations while driving an Strategic Construction Solutions vehicle.

Violation Description (while in company vehicle)	First Violation	Second Violation	Third Violation	Fourth Violation
• Public complaint of driving • Red light camera citation • Parking ticket	Verbal warning and noted in employee file	Written warning placed in employee file	Final written warning	Termination or loss of driving privilege
• Speeding ticket of less than 20 MPH over speed limit in company vehicle	Verbal warning and noted in employee file	Written warning placed in employee file	Final written warning	Termination or loss of driving privilege
• Speeding ticket of greater than 20 MPH over speed limit company vehicle	Final written warning	Termination or loss of driving privilege		
• Non Preventable MVA	Verbal warning and noted in employee file	Written warning placed in employee file	Final written warning	Termination or loss of driving privilege
• Minor MVA	Verbal warning and noted in employee file	Written warning placed in employee file	Final written warning	Termination or loss of driving privilege
• Serious MVA	Written warning placed in employee file	Final written warning	Termination or loss of driving privilege	
• Major MVA	Final written warning	Termination or loss of driving privilege		

NOTE 1: *The above recommended disciplinary action is the minimum for each violation and can be increased based on the results of an internal investigation. Strategic Construction Solutions Disciplinary Policy HS C001 must be used when determining discipline.*

NOTE 2: *Strategic Construction Solutions system of progressive discipline policy is a guideline for discipline. Strategic Construction Solutions has the discretion to modify as needed the progression of discipline. The final determination of what constitutes a safety violation will be left up to the discretion of onsite supervision, the Safety Director and/or Director of Human Recourses.*

***NOTE 3**: Any discipline that requires more than a written warning must be approved by the Director of Human Recourses. 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. Supervisors should consult with the Corporate Office/Human Resources, if there is any question about whether or not disciplinary action is justified. Employees may be terminated immediately for willful or extremely serious violations.*

REVISION DATE	REVIEW DATE	REVISION NUMBER	REVISION COMMENTS	AUTHOR
01/14/2016	10/14/2017	0	Created document	Bill Oswald
01/15/2016	10/15/2017	1	Edits/formatting	K. Rodriguez
15MAR2016	15MAR2017	2	Edits/formatting	K Rodriguez
09/09/2016	09/09/2016	2.1	Logo Change from SCS to Strategic Construction Solutions	Bill Oswald

STRATEGIC
CONSTRUCTION SOLUTIONS

HSE MANUAL

SECTION #HS C003

Fire Protection/Extinguisher Policy

Revision 2.1_09SEP2016

I. SCOPE

1. Strategic Construction Solutions has adopted this policy for Fire Protection and Extinguisher use to ensure the safety of its employees. This Policy is meant to serve as an outline of the various aspects of the Strategic Construction Solutions fire prevention program and as a resource for all employees, especially work area supervisors, who must carry out specific procedures in this plan.
2. This plan covers all employees and contractors who may become directly or indirectly involved in any fire situation associated with Strategic Construction Solutions. The fire prevention policy is designed to ensure that all reasonable steps are taken to preserve life, property, and the environment from exposure to fire hazards. This plan identifies the basic elements of Strategic Construction Solutions fire prevention program.

II. FIRE EVACUATION, REPORTING AND FIRE FIGHTING PROCEDURES

1. **General:** The Code of Federal Regulations permits employers to select from among several options relative to the procedures to be followed in the event of a fire in a work area depending on whether or not fire extinguishers are provided and if designated personnel have been trained in their use. The Strategic Construction Solutions policy is that buildings and vehicles shall be evacuated upon discovery of a fire and that only those persons who have received proper training in the use of portable fire extinguishers shall attempt to fight the fire in its early stages if it can be controlled.
2. **Evacuation Policy:** The evacuation policy is based upon whether or not the fire is of an interior or exterior nature.
    a. **Interior** - Fires in interior workplaces pose a greater hazard to employees. They can produce greater exposure to quantities of smoke, toxic gases, and heat because of the capability of a building or structure to contain or entrap these combustion products
    b. **Exterior** - Work areas which are normally open to the environment are somewhat less hazardous because the products of combustion generally are carried away by the thermal column of the fire. Employees also have a greater selection of evacuation routes if it is necessary to abandon any ongoing employee firefighting actions.
3. **Interior Fires:** Upon discovery of any interior fire, the following procedures shall be followed:
    a. Activate the building fire alarm if one exists in the building
    b. If the building is not equipped with a fire alarm system, start a verbal alert to warn all personnel of the danger and to order them to leave the building immediately. Leave the area immediately; if possible without compromising safety, close all windows and doors in the vicinity of the fire.
    c. From a telephone in a safe location, Dial 911 and provide the Emergency Personnel with the following information:
        - Your name
        - The building address and room number you are calling from. If the fire is in a different building, provide that information.

- Nature of the fire and any specific information which may be valuable to the fire department such as any toxic chemicals that may be encountered or any incapacitated or trapped personnel that you are aware of.

d. Even if properly trained in the use of fire extinguishers, before you consider fighting an interior fire:
   - Make sure everyone has left the immediate area or is leaving
   - Make sure the Emergency Personnel has been notified
   - Make sure you are familiar with the operation of the portable fire extinguisher in the area
   - Decide your primary and secondary means of egress if the firefighting is unsuccessful

e. Never attempt to fight an interior fire if any of the following conditions exist:
   - If the fire is spreading beyond the immediate area where it started, or is already a large fire
   - If the fire could block your escape
   - If you are unsure of the proper operation of the fire extinguisher
   - If any of the above conditions exist, it is reckless to attempt to fight the fire with a portable extinguisher. Instead, leave the area immediately; if possible without compromising safety, close all windows and doors in the immediate area of the fire.

f. In the event you are trapped in a building and cannot escape:
   - Call 911 and advise the dispatcher of your location and the fact that you are trapped.
   - If you get caught in smoke, get down on your hands and knees and stay low. Smoke and hot fumes rise, so the cleanest air is near the floor.
   - If the fire is on the other side of the door to the room you are in, try to seal the doorway so that smoke and fumes cannot enter your room.
   - If water is available in the room, use a wet rag or a piece of your clothing as a filter to breathe through.

4. **Exterior Fires:** Upon discovery of any exterior fire, the following procedures shall be followed:

   a. If the fire poses a threat to any immediately adjacent structure, inform someone inside the building so that personnel can evacuate the area.

   b. Dial 911 and provide Emergency Dispatcher with the following information:
      - Your name
      - Location of the fire, if different from the location you are calling from. Use buildings or other readily identifiable landmarks for reference.
      - Nature of the fire, (automobile, brush, boat, etc.), any toxic chemicals or trapped personnel that you are aware of.

   c. Before you attempt to fight an exterior fire:

- In general, unless the area involved is a small patch of grass or brush and you have a water supply line available, it is best to leave the task to the fire company.
- Automobile fires can be extremely hazardous due to the type of materials used for construction and the proximity of the fuel tank. Most automobiles contain synthetic materials which may produce cyanide and a host of other highly toxic gases when burned. Stay upwind at all times.
- A minor fire in the engine compartment of a vehicle can be fought with a portable fire extinguisher if the hood can be opened a few inches and the contents of an appropriate portable fire extinguisher are directed through the opening. Do not raise the hood all the way open. If in doubt, activate the inside hood release mechanism and leave the vehicle. Keep others clear of the area.

5. **Coordinating with the Fire Company:** In the event the Fire Department is called, either by automatic or telephone alarm, stand well away from the building, driveways, roads, and fire hydrants. Arrival of individual fire fighters and emergency apparatus can be hindered by you or your vehicle. If you have specific knowledge of the fire (nature, location, or hazards) stay nearby and inform the operator of the fire apparatus or a fire officer (white or red helmet), if one is available.

III. PORTABLE FIRE EXTINGUISHERS

Portable fire extinguishers are designed to cope with fires of limited size. Fire extinguishers should be checked for use codes and used only on the type of fires for which the contents are specified.

1. **Classes and Uses**
    a. Class "A" Use for paper, trash, rubbish products, etc.
    b. Class "B" Used for oils, solvents, gas, grease, etc.
    c. Class "C" Used for electrical.
    d. Class "D" Used for metal.
2. **Location:** Extinguishers shall be conspicuously located where they shall be readily accessible and immediately available in the event of fire. They shall be located along normal routes of travel and, where practical, should be located near exits. Extinguishers must not be obstructed from view by furnishings, storage containers, furnaces, etc. In large rooms or storage areas where visual obstructions cannot be completely avoided, appropriate signs shall be provided to indicate their location.
3. **Installation:** Extinguishers shall be installed on the hangers or in the brackets supplied and shall be installed so that the top of the extinguisher is not more than 5 feet above the floor. Extinguishers mounted in cabinets or wall recesses or set on shelves shall be placed so that the operating instructions face outward. Extinguishers installed under conditions where they are subject to severe vibration shall be installed in brackets specifically designed to cope with vibration.
4. **Inspection:** Portable extinguishers shall be maintained in a fully charged and operable condition. Each location must perform the monthly visual inspection of portable fire extinguishers required under 29 CFR 1910.157(e)(2). The purpose of the inspection is to ensure that the portable fire extinguishers are:
    a. In their designated places

b. have not been tampered with or actuated

c. and are free from:

- Obvious physical damage
- Corrosion
- Other impairments to full service

d. Any extinguisher showing defects shall be removed from service and replaced with a fully serviceable unit

e. Staff shall maintain appropriate records of inspections through tagging of the extinguishers and other means as found appropriate

f. Each extinguisher shall have a durable tag securely attached to show inspections, maintenance and/or recharge dates. This tag shall also include the initials or signature of the person who performs the service

g. Anyone noting a fire extinguisher in a location or condition that may compromise its operation should contact the Safety Department.

IV. FIRE ALARM, SPRINKLER, AND STANDPIPE SYSTEMS

1. The Facilities Management is responsible for the scheduling of required routine maintenance for all buildings which have alarm, sprinkler, and standpipe systems. This service has been conducted in accordance with the various applicable National Fire Protection Association Standards.

V. FLAMMABLE AND COMBUSTIBLE LIQUIDS

1. **Flammable**: A flammable liquid means any liquid having a flash point below 100° F.
2. **Combustible:** A combustible liquid means any liquid having a flash point at or above 100° F.
3. **Sources of Ignition:** In locations where flammable vapors may be present, precautions shall be taken to prevent ignition by eliminating or controlling sources of ignition.
    a. All electrical equipment and wiring shall be in accordance with the appropriate NFPA, National Electrical Code, and OSHA standards.
    b. Flammable liquids shall not be dispensed unless the nozzle and container are appropriately grounded to prevent ignition from static electricity.
    c. Open flames are not permitted in flammable or combustible storage areas.
    d. Hot work such as welding or cutting operations, use of spark-producing tools, and chipping operations shall be permitted only under supervision of a responsible individual in charge. The individual in charge shall make an inspection of the area to ensure that safety procedures are followed for the work specified.
4. **Storage and Use of Flammable Liquids:** Flammable liquids required in small quantities for frequent use shall be stored in approved safety cans in a metal cabinet or closet ventilated to the outside where practical. All containers used for storage, issue, and transport of flammable liquids shall be clearly marked as to their contents in accordance with the National Fire Protection Association Standard 704.

    Flammable liquids shall not be used for cleaning floors, clothing, or equipment.

VI. FIRE EXITS

Any swinging fire doors and any door in any stairwell designed to prevent the spread of fire shall be provided with positive latching mechanisms to hold it in the closed position against the pressure of expanding fire gases. Fire doors shall not be secured in the open position at any time. All exits and corridors must be kept free of obstructions at all times.

1. Each individual should know at least 2 (two) exits, a primary and a secondary, from her or his usual work area.
2. Under no circumstances should elevators be used in the event of a fire. Most Elevators are programmed to halt when a fire alarm pull station is activated from any location in the building. Every individual is responsible for studying the posted building floor plan to ensure he or she is familiar with all available fire exits.

VII. SMOKE DETECTORS

Smoke detectors in buildings with central alarm systems are tied into a control panel which will automatically activate the internal fire alarm system and alert the Emergency Dispatch.

Most smoke detectors are smoke ionization type detectors commonly found in home use. An ionization smoke detector has a small amount of radioactive material that ionizes air in the sensing chamber, allowing an electrical current to flow which in turn activates the alarm mechanism. Many of the detectors are hardwired into the building electrical system and also have a battery to ensure continued use in the event of a power failure.

VIII. SAFE PRACTICES

The easiest fire to extinguish is the one that never starts. Fire prevention is everybody's responsibility. Unsafe practices shall not be tolerated. The following safe practices are only common sense, yet they are often forgotten or ignored.

1. Flammables, including data sheets, books, rags, clothing, flammable liquids (solvents, thinners, cleaners) or trash shall not be placed or stored near heaters or their vents, any electrical appliance (for instance, copying machines), or other potential sources of ignition.
2. Sources of actual or potential heat such as hot plates, electric coffee pots, and welding or cutting apparatus will not be placed near flammable materials.
3. Care must be taken not to block potential escape routes, particularly with flammable materials.
4. Any gasoline or kerosene which must be stored inside must be stored in an approved container and have the appropriate NFPA 704 markings readily visible. All portable storage cans must conform to OSHA Standards 29 CFR 1910.106 (d) and any other applicable regulations.
5. Each individual is personally responsible for assuring that extension cords and multiple plugs are in good condition.
6. Care must be taken at any construction/repair site or shop/lab area to avoid an accumulation of debris (wood shavings, saw dust, metal shavings, or fiberglass)

IX. EMERGENCY PROCEDURES

1. It is the responsibility of every Manager or supervisor to ensure that all persons under her or his supervision know how to get out of the building in the event of a fire or other emergency. An orderly evacuation depends on both an early and effective warning system and an individual awareness of the proper procedures to follow.
2. Each location shall follow the Emergency Action Procedures establish regarding the evacuation of buildings in emergencies. Supervisors must be able to account for all persons reporting to them or known to have been in the area at the time of evacuation. Pre-determined assembly points shall be established at a safe distance for personnel accounting.
3. Due to the number of occupied buildings, their widespread locations, and diverse operations, it is not practical or safely feasible to develop or manage each unique evacuation plan from a central office. Each location supervisor shall ensure the contents of this plan are carried out and to develop any site specific sub-plans if required.

X. FIRE DRILLS

1. It is necessary that all persons be aware of and reminded of the procedures to follow should there be a fire. At least annually each location should conduct an Emergency drill for their location. All persons should remember that personal safety is more important than the work. Should a fire alarm sound, the situation should be treated as a true emergency in which data and equipment might have to be lost in order to assure personal safety.

XI. FIRE HAZARDS, GENERAL

1. Electrical equipment can become dangerously hot if the vent systems are blocked.
2. The policy forbidding smoking in all areas of all buildings, including individual offices, and enclosed spaces (automobiles, trucks) under the management or control of Strategic Construction Solutions is of significant benefit in reducing fire hazards.

XII. TRAINING

1. The purpose of this section is to establish training procedures which are necessary for the proper use and understanding of a fire and extinguishing the fire. Selected employees will be provided with an educational program to familiarize them with the general principles of fire extinguisher use and the hazards involved with incipient stage firefighting. Training will require annual updating to ensure the proper procedures are being followed.
2. Initial Training
    a. General principles of a fire
    b. Hazards employed with an incipient stage fire(s)
    c. When to "back off" (evacuate) of an incipient stage fire(s)
    d. General fire principles of a fire extinguisher
    e. Hazards employed with the use a fire extinguisher.
    f. Proper use of a fire extinguisher
3. Retraining shall reestablish employee proficiency and introduce new or revised control methods and procedures, as necessary. Retraining shall be provided for all authorized and affected employees whenever there is:

a. A change in job assignment

b. A change in machines, equipment or processes that present a new potential fire hazard

c. There is a change in the fire prevention procedures

d. This employer has reason to believe that there are deviations from or inadequacies in the employee's knowledge or use of fire extinguishers or fire prevention procedures.

4. Training Documentation: All training will be documented and each employee's understanding will be subject to a "hands-on" test. Documentation will consist of, as a minimum, the employee's name, the trainer's name, the date of the training, and an outline of training provided.

REVISION DATE	REVIEW DATE	REVISION NUMBER	REVISION COMMENTS	AUTHOR
04/07/2016	10/07/2017	1	Created document	Bill Oswald
11APR2016	11APR2017	2	Edits/formatting	K Rodriguez
09/09/2016	09/09/2016	2.1	Logo Change from SCS to Strategic Construction Solutions	Bill Oswald

HSE MANUAL

SECTION #HS C005

Hand and Power Tool Policy

Revision 2.1_09SEP2016

I. SCOPE

1. Strategic Construction Solutions is committed to providing a safe and healthy work environment for our employees. There are various types of tools and equipment used in the workplace for many different purposes. Examples include, but are not limited to, portable hand tools, power tools, pneumatic tools, and powder actuated tools.
2. The purpose of this policy is to provide employees with appropriate knowledge relating to the care and use of tools and equipment and to protect employees from hazards associated with improper use of tools and equipment and defective and poorly maintained tools and equipment.

II. GENERAL POLICY

1. Only trained and/or experienced employees may use/operate tools or equipment. Tools and equipment shall not be modified and they are to be used only for their designed purpose.
    a. It shall be the responsibility of the employee to inspect tools and equipment prior to use and to use all tools and equipment in a safe manner.
    b. Employees observed abusing, altering, modifying or misusing tools or equipment shall be subject to disciplinary action.
    c. Employees shall wear all appropriate personal protective equipment while using tools and equipment.
    d. Additionally if a tool or piece of equipment is found to be defective, the tool/equipment shall be red-tagged, taken out of service until it can be replaced or repaired by a qualified person.
2. It shall be the responsibility Project Manager or Site Superintendent to designate a competent person who will be assigned to be responsible for testing/inspecting and repairing all tools and equipment. All periodic inspections, maintenance and repairs of tools or equipment shall be documented.

III. PROCEDURES

1. **General Tool Safety:** Many serious injuries have resulted from the improper use of tools and equipment. Many of these injuries could have been prevented if the following rules were followed:
    a. **Inspection and Maintenance:**
        - All tools shall be identified and inventoried either individually or by group.
        - All tools in the inventory shall have a documented inspection at least once every six months. In addition to these periodic documented inspections all tools shall be inspected prior to issue and upon return to Site Supervisor and prior to each use by the user.
        - All tools will be kept in good working condition with no modifications.
        - All periodic inspections and all maintenance and repairs shall be documented. Completed forms shall be kept in a job binder with the Site Supervisor for one

year. The binder shall contain a copy of the inspection checklist for the type for tools and/or equipment being inspected.

b. **Selection:**

- Use the right tool for the task instead of trying to make the wrong one fit.

c. **Use:**

- Keep control of yourself, the tool, and the job. When applying force with a tool, remember that it may slip, break, or just suddenly do its job. Watch your hands and your balance (body mechanics) to avoid injury.
- Vibration Absorbing Gloves are to be made available to workers using pneumatic impact guns or other vibrating equipment. These gloves are required PPE for worker's operating heavy vibrating tools (i.e. jack hammers, 90 guns, impact guns etc.). The use of these gloves are designed to dampen vibration, dissipate impact and absorb shock, they can assist in the prevention of cumulative trauma injury often associated with operating this type of equipment. They only work if you use them.
- Select the right protective equipment for the task and use it properly.
- Do not use tools and equipment that you have not been trained to use.

d. **Care**:

- Take proper care of your tools and equipment. Keep them stored where they will not get damaged and will not present a hazard.
- Check your tools and equipment prior to use for defects, wear, or damage. Immediately remove from service and tag any defective tools. Damaged tools shall be turned into the Site Supervisor for repair or replacement.

e. **Supervision:**

- Supervisors shall be responsible for ensuring that employees are trained before using a specific tool. Watch your employees at work. Ask them about their immediate assignment and take an interest in finding the safest way to do the job. Then follow up to insure that the tools and equipment in your area are being used safely.

2. **Hand Tool Safety**

a. Hand tools shall only be used for the purpose for which they are intended

b. All appropriate PPE will be worn while using hand tools

c. Wrenches, including adjustable, pipe and socket shall not be used when jaws are sprung to the point of slippage

d. Pipe wrench parts (i.e., jaws) are not to be removed and used for anything other than the manufactured use

e. The use of snipes and cheater bars or double wrenching to gain leverage is prohibited

f. Always use tool holder while using hammer and knocker wrenches

g. Hand tools shall be tagged and removed from service if any of the following defects are present:

- Impact tools, such as hammers, flange wedges chisels, drift pins, pin bars and knocker wrenches with visible signs of mushrooming, cracking or bending.
- Wooden handle tools, such as hammers, picks, shovels, and brooms with visible sign of cracking, loosening or splintering of the handle.
- Wrenches, such as adjustable, combo and pipe with visible signs of bending, cracking, defective handles or other defects that impair their strength.

3. **Electrical Power Tool Safety**
    a. All appropriate PPE will be worn while using power tools.
    b. Be sure that the proper permit has been obtained prior to use of electrical power tools. GFCI's are to be used with all portable electric equipment. GFCI's are to be inspected and tested prior to each use.
    c. **Do not** connect electrical power unless the operating switch is turned off. Employee shall avoid loose fitting clothing when operating power tools.
    d. The power source on tools shall be physically disconnected prior to attempting any repairs or attachment replacement.
    e. Protective guards on power tools shall not be removed, altered or modified. All guarding will meet the requirements set forth by ANSI B15.1 1926.300 (c)
    f. Trigger/switch locks on power tools are prohibited.
    g. All electrical tools and power cords must be inspected.
    h. Electrical tools and power cords must display the current inspection color code for the current inspection period to it being placed in service.
    i. Electrical tools **shall not** be hoisted or carried by their power cords.
    j. Cords are tripping hazards. Route them so as to minimize interference in walkways. Overhead is preferred.
    k. Electrical power tools shall be tagged and removed from service if any of the following defects are present:
        - Electrical power tool cord does not have current inspection color code
        - Power cord is frayed, cut or damaged. The use of electrical tape to cover damage to cords is prohibited.
        - Defective or faulty on/off switches.
        - Loose or defective components

4. **Air Power Tool Safety**
    a. All hoses exceeding 1/2" inside diameter shall have a safety device at the source of supply or branch line to reduce pressure in case of hose failure.
    b. Chicago fittings shall be pinned.
    c. Attachments on air tools shall be secured by retainer pins and rings.
    d. **Do not** connect air unless the operating switch is turned off.
    e. **Do not** disconnect tool until air supply is shut off and air pressure is bled off.
    f. Air power tools **shall not** be hoisted or carried by their hoses.

g. Hoses are tripping hazards. Route them so as to minimize interference in walkways. Overhead is preferred.

h. Air power tools shall be tagged and removed from service if any of the following defects are present:

- Air power tools, such as air power grinders, impact wrenches, German hacksaws with visible signs of deformities in the body of the tool, improperly functioning actuator, bent or deformed blades, or any signs of obvious damage to the air supply line fittings.
- Hoses must be visually inspected for cracking, signs of aging, worn or damaged connecting fittings, or any other obvious deformities, such as blistering or bulges.

5. **Powder Actuated Tool Safety**

a. Only employees who have received an approved training course and license for the particular tool to be used may operate powder-actuated tools.

b. Site Supervisor **shall not** issue powder-actuated tools unless the person requesting the tool can provide a current training for that tool.

c. Powder-actuated tools shall be tested prior to use to ensure all safeties are functioning.

d. The fastener **shall not** be loaded until ready for the shot. The tool **shall not** be left unattended unless it is unloaded.

e. **Never** point either an empty or loaded tool at any person

f. Keep both hands and feet clear of the open-end of the barrel

g. In the event of a misfire, the operator shall hold the tool firmly against the work surface for a period of 30 seconds and then follow manufacturer's instructions.

h. Personnel, other than the operator of the tool, must stay clear of the area where the tool is being used.

i. Operators of powder-actuated tools shall wear goggles for eye protection while operating these tools.

j. A sign at least 8 x 10 inches, using boldface type no less than 1 inch in height, shall be posted within 50 feet of the area where the tool is being used. The sign shall bear the following wording:

CAUTION

POWDER-ACTUATED TOOL IN USE

k. Powder-actuated tools shall be tagged and removed from service if any of the following defects are present:

- Tool has visible signs of worn or damaged part.
- Missing or malfunctioning parts or accessories
- Missing operator's instruction manual or missing power load and fastener chart
- Tool misfires more than one time during use

REVISION DATE	REVIEW DATE	REVISION NUMBER	REVISION COMMENTS	AUTHOR
04/08/2016	10/08/2017	1	Created document	Bill Oswald
11APR2016	11APR2017	2	Edits/formatting	K Rodriguez
09/09/2016	09/09/2016	2.1	Logo Change from SCS to Strategic Construction Solutions	Bill Oswald

STRATEGIC
CONSTRUCTION SOLUTIONS

HSE MANUAL

SECTION #HS C009

Noise Exposure/Hearing Conservation Policy

Revision 2.1_09SEP2016

I. SCOPE

1. Strategic Construction Solutions is committed to providing a safe and healthy work environment for our employees. It is the policy of Strategic Construction Solutions to protect its employees from the hazards of excessive noise exposure on the job. Strategic Construction Solutions has instituted a Hearing Conservation Program to ensure compliance with the OSHA standards regarding occupational noise exposure. The general objectives of this policy are as follows:
    a. To identify a population of noise "exposed" employees, i.e., those whose typical exposure to workplace noise equals or exceeds the action level as set by OSHA, or a level equivalent to a continuous 8-hour exposure to 85 dB(A). These employees are enrolled in the Hearing Conservation Program.
    b. To identify and demarcate work areas in which the sound level is sufficiently high to contribute substantially to an exposure at the level described above
    c. To reduce workplace exposure to noise through the use of hearing protection devices (ear plugs or ear muffs).
    d. To assess annually the hearing acuity of " exposed" employees, in order to detect very early noise-induced hearing loss, so that the progressive loss can be halted
    e. To ensure that all "exposed" employees are trained in the effects of excess noise on human hearing, and that each employee is informed on the correct use of hearing protection devices

II. GENERAL POLICY & PROCEDURES

1. Administration of Program
    a. The Director of Safety is responsible for administering this program at Strategic Construction Solutions.
2. Use of Engineering Controls
    a. Where employee noise exposure exceeds the OSHA Permissible Exposure Limit (PEL) of 90 dB on an eight hour time-weighted average, engineering or administrative controls will be used to reduce exposure. If such controls are not feasible, hearing protection devices (HPDs) will be provided and used to reduce exposures to below 90 dB.
    b. For all Strategic Construction Solutions locations, there is no location with exposure levels approaching the action levels. On occasions Strategic Construction Solutions employees will be on customer locations where Strategic Construction Solutions employees will follow customers established Hearing Conservation Program.
3. Inclusion of Employees Into the Hearing Conservation Program
    a. Employees exposed to noise levels equal to or exceeding an 8-hour time weighted average of 85 dB will be included in the Hearing Conservation Program.
4. Noise Monitoring
    a. Noise measurements will be conducted to determine employee exposure to noise, and to identify those work areas and/or equipment that could contribute to noise exposure.
    b. Strategic Construction Solutions will when suspected high noise area is present conduct noise exposure testing to ensure compliance with this policy.

c. The Safety Department will maintain exposure and noise measurement records.

5. Labeling of Areas/Equipment

   a. All areas with noise levels exceeding 85 dB will be labeled thus to warn employees and visitors entering the area, of the need for hearing protection:

6. Audiometric Testing

   a. All employees assigned to jobs that require inclusion in the Hearing Conservation Program will receive a baseline audiogram within six (6) months of the first high noise exposure.

   b. Audiograms will then be given at least annually and compared to the baseline audiogram to determine if a standard threshold shift (STS) has occurred. An STS is defined as a change in the hearing threshold of an average of 10 dB or more in either ear, measured at 2000, 3000 and 4000 Hz.

   c. If an STS occurs, the affected employee will be notified.

   d. Employees must have a termination audiogram upon leaving Strategic Construction Solutions, if they were required to participate in Strategic Construction Solutions Hearing Conservation program.

   e. Concentra Medical clinics will keep all audiogram records on file.

7. Hearing Protection

   a. Hearing protection will be worn:

      - By all employees with noise exposures exceeding an eight hour time weighted average (TWA) of 90 dB.
      - When employees operate equipment that produces noise exceeding 85 dB
      - When employees or visitors enter areas where the noise level exceeds 85 dB

   b. Hearing protection devices will provide adequate attenuation as to reduce exposures to below 85 dB.

8. Training

   a. All employees in the Hearing Conservation Program will receive training annually. This training will cover:

      - Effects of noise on hearing
      - Purpose of hearing protection
      - Types of hearing protection
      - Selection, use, fitting and care of hearing protectors
      - Purpose and procedures for audiometric testing.

b. Training is provided through any one or a combination of the following modes:
   - Classroom presentations
   - Video-based training
   - Online, text-based training through the Learning Management System

III. SPECIFIC RESPONSIBILITIES

1. Strategic Construction Solutions
   a. Notify Safety Department when new noise sources are introduced
   b. Minimize noise through use of engineering controls
   c. Offer a variety of hearing protectors
   d. Provide access to clinic to ensure workers receive training and audiograms
   e. Administer and maintain this program
2. Supervisors
   a. Ensure workers use hearing protection when required
3. Safety Department
   a. Conduct noise monitoring and notify affected employees of their exposure
   b. Provide training services
   c. Recommend appropriate hearing protection
   d. Audit this departmental program periodically
   e. Conduct audiograms, evaluate results, and notify the affected employee within 21 days of determination of an STS
4. Individual
   a. Attend training and receive audiometric testing when required to do so under this policy
   b. Wear appropriate hearing protection when required and minimize noise exposure outside of work

IV. REFERENCES

29 CFR 1910. 95,
29 CFR 1926. 52

REVISION DATE	REVIEW DATE	REVISION NUMBER	REVISION COMMENTS	AUTHOR
04/08/2016	10/08/2017	1	Created document	Bill Oswald
11APR2015	11APR2016	1	Edits/Formatting	K Rodriguez
06MAY16	06MAY17	2	EDITS	K Rodriguez
09/09/2016	09/09/2016	2.1	Logo Change from SCS to Strategic Construction Solutions	Bill Oswald

STRATEGIC
CONSTRUCTION SOLUTIONS

HSE MANUAL

SECTION #HS C010

Personal Protective Equipment Policy

Revision 5.1_09SEP2016

I. SCOPE

A. The purpose of the Personal Protective Equipment Policies is to protect Strategic Construction Solutions employees from exposure to work place hazards and the risk of injury through the use of personal protective equipment (PPE). PPE is not a substitute for more effective control methods and its use will be considered only when other means of protection against hazards are not adequate or feasible. It will be used in conjunction with other controls unless no other means of hazard control exist.

B. Personal protective equipment will be provided, used, and maintained when it has been determined that its use is required to ensure the safety and health of our employees and that such use will lessen the likelihood of occupational injury and/or illness. All PPE will be provided by Strategic Construction Solutions to employees, employee owned PPE shall not be used on any Strategic Construction Solutions project.

C. This section addresses general PPE requirements, including eye and face, head, foot and leg, hand and arm, body (torso) protection, and protection from drowning. Separate programs exist for respiratory protection and hearing protection as the need for participation in these programs is established through industrial hygiene monitoring. Hearing Protection (HS C009), Respiratory Protection (HS C012), and Fall Protection (HS B008) is addressed separately in their respective policies.

D. Strategic Construction Solutions Personal Protective Equipment Policies includes:

1. Responsibilities of supervisors and employees
2. Hazard assessment and PPE selection
3. Employee training
4. Cleaning and Maintenance of PPE
5. Procurement procedures

E. A copy of this policy will be made available to all employees and their designated representatives.

II. RESPONSIBILITIES

A. **Health and Safety Department** is responsible for the development, implementation, and administration of Strategic Construction Solutions PPE policies. This involves:

1. Conducting workplace hazard assessments to determine the presence of hazards which necessitate the use of PPE
    a) Selecting and purchasing PPE
    b) Reviewing, updating, and conducting PPE hazard assessments whenever
    c) A job changes
    d) New equipment is used
    e) There has been an accident
    f) A supervisor or employee requests it
2. Maintaining records on hazard assessments
3. Maintaining records on PPE assignments and training

4. Providing training, guidance, and assistance to supervisors and employees on the proper use, care, and cleaning of approved PPE.
5. Periodically re-evaluating the suitability of previously selected PPE.
6. Reviewing, updating, and evaluating the overall effectiveness of PPE use, training, and policies.

B. **Supervisors, Crew Chiefs & Foreman** have the primary responsibility for implementing and enforcing PPE use and policies in their work area. This involves:

1. Providing appropriate PPE and making it available to employees
2. Ensuring that employees are trained on the proper use, care, and cleaning of PPE
3. Ensuring that employees properly use and maintain their PPE, and follow PPE policies
4. Notifying Safety Department and Management when new hazards are introduced or when processes are added or changed
5. Ensuring that defective or damaged PPE is immediately disposed of and replaced

C. **Employees** as the PPE user are responsible for following the requirements of the PPE policies. This involves:

1. Properly wearing PPE as required
2. Attending required training sessions
3. Properly caring for, cleaning, maintaining, and inspecting PPE as required
4. Following Strategic Construction Solutions PPE policies and rules
5. Informing the supervisor of the need to repair or replace PPE

D. Employees who repeatedly disregard and do not follow PPE policies and rules will be disciplined in accordance with the Strategic Construction Solutions Disciplinary policy HS C001.

III. SELECTION PROCEDURES

A. Controlling and assessing PPE devices alone should not be relied on to provide protection against hazards, but should be used in conjunction with guards, engineering controls, and sound manufacturing practices. Certified hazard assessment general guidelines and steps are to be used by persons experienced in assessing hazard situations when matching protective devices to identified hazards. The use of the Certified Hazard Assessment form (Attachment 1)

B. Selection and fitting of the protective devices is most important. Careful consideration must be given to comfort and fit. PPE that fits poorly will not afford the necessary protection. Continued wearing of the device is more likely if it fits the wearer comfortably. Protective devices are generally available in a variety of sizes and adjustable. Care should be taken to ensure that the right size is selected.

C. **Eye and Face:** To protect employee's eye site from potential harm to the eyes specific eye protection PPE must be used. All eye protection must meet the ANSI Z 87 standard for face and protection. Eye protection must display the Z87 approval marked on the ear band.

1. **Selection** guideline for eye and face protection. The following chart provides general guidance for the proper selection of eye and face protection to protect against hazards associated with the listed hazard source operations.

Eye and Face Protection Selection Chart		
Source	Assessment of Hazards	Protection
IMPACT --- Chipping, grinding, machining, masonry work, woodworking, sawing, drilling, chiseling, powered fastening, riveting, and sanding	Flying fragments, objects, large chips, particles sand, dirt, etc.	Spectacles with side protection, goggles, face shields. For severe exposure, use face shield. See notes 1, 3, 5, 6, 10
HEAT -- Furnace operations, pouring, casting, hot dipping, and welding	Hot sparks	Face shields, goggles, spectacles with side protection. For severe exposure use face shield. See notes 1, 2, 3
	Splash from molten metals	Face shields worn over goggles. See notes 1, 2, 3
	High temperature exposure	Screen face shields, reflective face shields. See notes 1, 2, 3
CHEMICALS -- Acid and chemicals handling, degreasing, plating	Splash	Goggles, eyecup and cover types. For severe exposure, use face shield. See notes 3, 11
	Irritating mists	Special-purpose goggles
DUST -- Woodworking, buffing, general dusty conditions	Nuisance dust	Goggles, eyecup and cover types. See note 8
LIGHT AND/OR RADIATION		
Welding: Electric arc	Optical radiation	Welding helmets or welding shields. Typical shades: 10-14. See notes 9, 12
Welding: Gas	Optical radiation	Welding goggles or welding face shield. Typical shades: gas welding 4-8, cutting 3-6, brazing 3-4 See note 9
Cutting, Torch brazing, Torch soldering	Optical radiation	Spectacles or welding face-shield. Typical shades 1.5-3. See notes 3, 9
Glare	Poor vision	Spectacles with shaded or special-purpose lenses, as suitable. See notes 9, 10.

Notes to Eye and Face Protection Selection Chart:

1. *Care should be taken to recognize the possibility of multiple and simultaneous exposure to a variety of hazards. Adequate protection against the highest level of each of the hazards should be provided. Protective devices do not provide unlimited protection.*
2. *Operations involving heat may also involve light radiation. As required by the standard, protection from both hazards must be provided.*
3. *Face shields should only be worn over primary eye protection (spectacles or goggles).*
4. *As required by the standard, filter lenses must meet the requirements for shade designations in 1910.133(a)(5). Tinted and shaded lenses are not filter lenses unless they are marked or identified as such.*
5. *As required by the standard, persons whose vision requires the use of prescription (Rx) lenses must wear either protective devices fitted with prescription (Rx) lenses or protective devices designed to be worn over regular prescription (Rx) eyewear.*
6. *Wearers of contact lenses must also wear appropriate eye and face protection devices in a hazardous environment. It should be recognized that dusty and/or chemical environments might represent an additional hazard to contact lens wearers.*

7. *Caution should be exercised in the use of metal frame protective devices in electrical hazard areas.*
8. *Atmospheric conditions and the restricted ventilation of the protector can cause lenses to fog. Frequent cleansing may be necessary.*
9. *Welding helmets or face shields should be used only over primary eye protection (spectacles or goggles).*
10. *Non-side shield spectacles are available for frontal protection only, but are unacceptable for the sources and operations listed for impact.*
11. *Ventilation should be adequate, but well protected from splash entry. Eye and face protection should be designed and used so that it provides both adequate ventilation and protects the wearer from splash entry.*
12. *Protection from light radiation is directly related to filter lens density. See note (4). Select the darkest shade that allows task performance*.

2. **Inspection** eye and face protection: The following chart should be used to inspect the Face and Eye protection. Eye and Face protection must be inspected prior to each use by employees.

Inspection Criteria for Eye and Face protection		
Inspected Part	Conditions	Action
Lenses	If vision is obstructed by scratches, distortion or involved in an incident	Replace
Ear bands	Broken, missing or distorted	Replace
Face Shield	Cracks, Greater than 20% scratched, heat distortion	Replace
Head Bands	Loss of adjustment, broken attachment, Exposed to chemicals	Replace
Goggles	Distorted face seal, broken scratched lenses, or involved in a chemical exposure	Replace

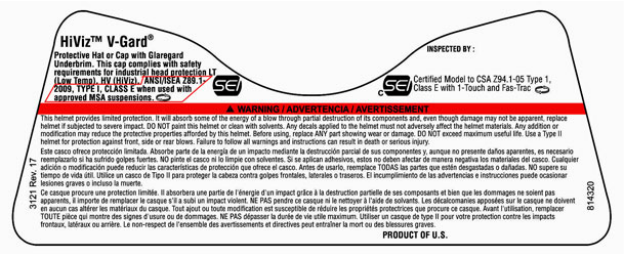
A. **Head protection:** Selection guidelines for head protection. All head protection is designed to provide protection from impact and penetration hazards caused by falling objects. Head protection is also available which provides protection from electric shock and burn. When selecting head protection, knowledge of potential electrical hazards is important. The following head protection chart will aid in selection process.

Head Protection Selection Criteria Z-89.1 2009		
Source	Assessment of Hazards	Protection
Construction sites, overhead work, logging activity, exposure to lower voltage exposed electrical conductors, low hanging material potential for head bumps	Falling objects, Bump protection side impact protection, and Nominal lower voltage contact protection up to 2,200 volts	Class **G** Helmets (General Duty)
Construction sites, overhead work, logging activity, exposure to higher voltage exposed electrical conductors, low hanging material potential for head bumps	Falling objects, Bump protection side impact protection, and Nominal higher voltage contact protection up to 20,200 volts	Class **E** Helmet (Electrical)
Construction sites, overhead work, logging activity, low hanging material potential for head bumps	Falling objects, Bump protection side impact protection	Class **C** Helmet (Conductive)

Notes: additional requirements on style and use are listed in the additional markings chart below.

Additional Markings and Labels	
Required label markings	• The manufacturer's name or identifying mark • Date of Manufacture • The legend, "ANSI Z89.1-2014" • The Type and Class Designation • The approximate head size range
Type I	Helmets designed to reduce the force of impact resulting from a blow only to the top of the head
Type II	Helmets designed to reduce the force of impact resulting from a blow to the top or sides of the head

Sample label found inside hard hat shell



Reverse donning: Hard hats marked with a "reverse donning arrow" can be worn frontward or backward in accordance with the manufacturer's wearing instructions. They pass all hard hat testing requirements, whether worn frontward or backward.	 -
Lower temperature: Hard hats marked with an "LT" indicate that the hard hat meets all testing requirements of the standard when preconditioned at a temperature of -30°C (-22°F).	"**LT**"
Higher temperature: users who work in hot environments the helmet is preconditioning at a higher temperature of 140º F +- 3.6º F (60º C +- 2º C).	"**HT**"
High visibility: Hard hats marked with an "HV" indicate that the hard hat meets all testing requirements of the standard for high visibility colors. This includes tests for chromaticity and luminescence.	**"HV"**
Mining: Underground mining requires additional (Some mining attachments will reduce the Electrical classification to Class C)	**"Mine"**
ATV Helmets: When operating and motorized off road vehicle like an ATV that does not have an enclosed cab must wear an approved Helmet when riding.	**DOT**

Examples of Certification lables for ATV helmets

Note: DOT Department of Transportation
Snell Private Helmet standard company
ECE Economic Commission for Europe an united nations standard group.

A. **Inspection** all hard hats and Helmets must be inspected prior to each use and if found defective replaced immediately. Use the following inspection criteria for Head protection chart:

Head Protection Inspection for hard hats and ATV helmets		
Helmet Shell	Look for cracks, distortions, dents and fading of color	Replace
Helmet Suspension	Broken straps, distorted straps, missing bands, no adjustment available	Replace
Chin Strap	Look for tears and distorted claps	Replace

1. **Service Life:** hard hats do not have a predetermined service life. All hard hat components and accessories should be inspected daily for signs of dents, cracks, penetration and any damage due to impact, rough treatment or wear that might reduce the degree of protection originally provided.
2. In addition to everyday wear and tear, ultraviolet (UV) radiation can pose a problem for hard hats constructed of plastic materials. Damage caused by UV radiation is easy to spot: the hat will lose its glossy finish and eventually take on a chalky appearance. Further degradation could cause the shell to actually start flaking away. A helmet with worn, damaged or defective parts should be removed from service.
3. Useful service life guidelines supplied by the helmet manufacturers are intended to provide the user with information that certain conditions may affect a specific helmet's continued protection over time. Specific service life, defined in terms of number of years, is not required though individual manufacturers may choose to include such information for their helmets.

C. **Foot Protection** Selection guidelines. Protective footwear is required by the Occupational Safety and Health Administration (OSHA) for all employees who could be exposed to falling objects, hazardous materials, or matter that could pierce the sole. OSHA also has specific standards that require the footwear to meet certain impact and compression tests. In order for your workplace to be as safe as possible you should make sure that you follow OSHA guidelines and purchase only certified footwear.

Foot Protection Chart		
Source	Assessment of Hazard	Protection
Impact	Falling objects, parts, heavy tools	Safety shoes. For severe exposure use metatarsal guards (See ANSI performance requirement)
Penetration	Nails, scrap metal, and other sharp objects	Footwear with puncture resistant soles/steel insert
Compression	Rolling or pinching objects, rolls, carts or vehicles	Safety shoes. For severe exposure use metatarsal guards (See ANSI performance requirement)
Chemicals	Splashing/spilling liquids, i.e. solvents, oils, paints, corrosives, acids, etc.	Solid Leather upper shoes with no ventilation screens for mild exposures. Rubber boots or shoes with spats for severe exposure. Consult the SDS for proper footwear protection.
Electrical	Contact with exposed energized parts, power lines, conductors, arcing, sparks or static discharges	Footwear with special nonconductive/insulated soles. Non static producing soles
Heat	Splash from molten Metal welding cutting activities	Heavy leather safety shoes with metatarsal guard or spats
Water / Ice	Wetness/ moisture from prolonged exposure, slipping hazards, cold hazards	Insulated Shoe, boots or waders with slip resistant sole
Temperature	Exposure to extreme cold	Insulated shoe/boots

ANSI Performance Requirements for Occupational Foot protection		
Class	Compression Resistance (Pounds)	Impact Resistance (Foot-Pounds)
75	2,500	75
50	1,750	50
30	1,000	30

1. **Inspection and Cleaning** of footwear: as with all protective equipment, safety footwear should be inspected prior to each use. Shoes and laces should be checked for wear and tear at reasonable intervals. This includes looking for cracks or holes, separation of materials, broken buckles or laces. The soles of shoes should be checked for pieces of metal or other embedded items that could present electrical or tripping hazards. Employees should follow the manufacturers' recommendations for cleaning and maintenance of protective footwear.

D. **Hand Protection:** If a workplace hazard assessment reveals that employees face potential injury to hands and arms that cannot be eliminated through engineering and work practice controls, Strategic Construction Solutions must ensure that employees wear appropriate protection. Potential hazards include skin absorption of harmful substances, chemical or thermal burns, electrical dangers, bruises, abrasions, cuts, punctures, fractures and amputations.

1. **Types of Protective Gloves -** There are many types of gloves available today to protect against a wide variety of hazards. The nature of the hazard and the operation involved will affect the selection of gloves. The variety of potential occupational hand injuries makes selecting the right pair of gloves challenging. It is essential that employees use gloves specifically designed for the hazards and tasks found in their workplace because gloves designed for one function may not protect against a different function even though they may appear to be an appropriate protective device. The following are examples of some factors that may influence the selection of protective gloves for a workplace.

    a) Type of chemicals handled

    b) Nature of contact (total immersion, splash, etc.)

    c) Duration of contact

    d) Area requiring protection (hand only, forearm, arm)

    e) Grip requirements (dry, wet, oily.

    f) Thermal protection

    g) Size and comfort

    h) Abrasion/resistance requirements

2. Gloves made from a wide variety of materials are designed for many types of workplace hazards. In general, gloves fall into four groups:

    a) Gloves made of leather, canvas or metal mesh

    b) Fabric and coated fabric gloves

    c) Chemical- and liquid-resistant gloves

    d) Insulating rubber gloves for electrical protective equipment

Four major categories of hand protection	
Gloves made of leather, canvas or metal mesh Sturdy gloves made from metal mesh, leather or canvas provides protection against cuts and burns. Leather or canvas gloves also protect against sustained heat.	
Leather gloves	Protect against sparks, moderate heat, blows, chips and rough objects
Aluminized gloves	Provide reflective and insulating protection against heat and require an insert made of synthetic materials to protect against heat and cold
Aramid fiber gloves	Protect against heat and cold, are cut and abrasive resistant and wear well
Synthetic gloves	Of various materials offer protection against heat and cold, are cut and abrasive resistant and may withstand some diluted acids. These materials do not stand up against alkalis and solvents

Fabric and coated fabric gloves	
Fabric and coated fabric gloves are made of cotton or other fabric to provide varying degrees of protection	
Fabric gloves	Protect against dirt, slivers, chafing and abrasions. They do not provide sufficient protection for use with rough, sharp or heavy materials. Adding a plastic coating will strengthen some fabric gloves
Coated fabric gloves	Are normally made from cotton flannel with napping on one side. By coating the un-napped side with plastic, fabric gloves are transformed into general-purpose hand protection offering slip-resistant qualities. These gloves are used for tasks ranging from handling bricks and wire to chemical laboratory containers. When selecting gloves to protect against chemical exposure hazards, always check with the manufacturer or review the manufacturer's product literature to determine the gloves' effectiveness against specific workplace chemicals and conditions.
Chemical and Liquid Resistant gloves	
Chemical resistant gloves are made with different kinds of rubber: natural, butyl, neoprene, nitrile and fluorocarbon (viton); or various kinds of plastic: polyvinyl chloride (PVC), polyvinyl alcohol and polyethylene. These materials can be blended or laminated for better performance. As a general rule, the thicker the glove material, the greater the chemical resistance but thick gloves may impair grip and dexterity, having a negative impact on safety	
Butyl gloves	Are made of a synthetic rubber and protect against a wide variety of chemicals, such as peroxide, rocket fuels, highly corrosive acids (nitric acid, sulfuric acid, hydrofluoric acid and red-fuming nitric acid), strong bases, alcohols, aldehydes, ketones, esters and nitrocompounds. Butyl gloves also resist oxidation, ozone corrosion and abrasion, and remain flexible at low temperatures. Butyl rubber does not perform well with aliphatic and aromatic hydrocarbons and halogenated solvents.
Natural (latex) rubber gloves	Are comfortable to wear, which makes them a popular general-purpose glove. They feature outstanding tensile strength, elasticity and temperature resistance. In addition to resisting abrasions caused by grinding and polishing, these gloves protect workers' hands from most water solutions of acids, alkalis, salts and ketones. Latex gloves have caused allergic reactions in some individuals and may not be appropriate for all employees. Hypoallergenic gloves, glove liners and powderless gloves are possible alternatives for workers who are allergic to latex gloves.
Neoprene gloves	Are made of synthetic rubber and offer good pliability, finger dexterity, high-density and tear resistance. They protect against hydraulic fluids, gasoline, alcohols, organic acids and alkalis. They generally have chemical and wear resistance properties superior to those made of natural rubber.
Nitrile gloves	Are made of a copolymer and provide protection from chlorinated solvents such as trichloroethylene and perchloroethylene. Although intended for jobs requiring dexterity and sensitivity, nitrile gloves stand up to heavy use even after prolonged exposure to substances that cause other gloves to deteriorate. They offer protection when working with oils, greases, acids, caustics and alcohols but are generally not recommended for use with strong oxidizing agents, aromatic solvents, ketones and acetates.

Note: **Chemical Resistance Selection Chart for Protective Gloves see (Attachment 2)**

3. **Care of Protective Gloves**: Protective gloves should be inspected before each use to ensure that they are not torn, punctured or made ineffective in any way. A visual inspection will help detect cuts or tears but a more thorough inspection by filling the gloves with water and tightly rolling the cuff towards the fingers will help reveal any pinhole leaks. Gloves that are

discolored or stiff may also indicate deficiencies caused by excessive use or degradation from chemical exposure.

4. Any gloves with impaired protective ability should be discarded and replaced. Reuse of chemical-resistant gloves should be evaluated carefully, taking into consideration the absorptive qualities of the gloves. A decision to reuse chemically-exposed gloves should take into consideration the toxicity of the chemicals involved and factors such as duration of exposure, storage and temperature.

E. **Fire Retardant/Arc Flash Clothing:** Generally, flame resistant clothing is defined in the U.S. as clothing made from the fabrics that self-extinguish once the source of ignition is removed. Strategic Construction Solutions shall ensure that the outer layer of clothing worn by an employee, except for certain head, hands and feet items, is flame resistant under any of the following conditions:

1. The employee is exposed to contact with energized circuit parts operating at more than 600 volts;
2. An electric arc could ignite flammable material in the work area that, in turn, could ignite the employee's clothing;
3. Molten metal or electric arcs from faulted conductors in the work area could ignite the employee's clothing, or
4. The incident heat energy estimate exceeds 2.0 Cal/cm2
5. As required by customers in certain industries:
    a) Oil and Gas require outer layer to be FR Category One
    b) Electrical and Power transmission requires an Arc HRC2 Addition may be require after a risk assessment is completed. A more detailed description will be in the Electrical Safety policy.

IV. EMPLOYEE INFORMATION AND TRAINING

A. Strategic Construction Solutions will conduct training on the following for PPE:

1. When to wear PPE
2. What PPE should be worn
3. How to put on and take off and adjust PPE
4. The limitations of the PPE and its use, care, and maintenance

B. Each affected employee must demonstrate an understanding of training received and the ability to use PPE properly. In addition retraining will take place when:

1. There is a reason to believe that any employee who has been trained does not have the required understanding and skill or
2. There are changes in the workplace, the employee must be retrained

C. PPE training should be documented. The certification should include the employee name, the dates of training, and the training content.

V. CLEANING AND MAINTENANCE

A. It is important that all PPE be kept clean and properly maintained. Cleaning is particularly important for eye and face protection where dirty or fogged lenses could impair vision. For the purposes of compliance with 1910.132(a) and (b), PPE should be inspected, cleaned, and maintained at regular intervals so that the PPE provides the requisite protection. It is also important to ensure that

contaminated PPE which cannot be decontaminated is disposed of in a manner that protects employees from exposure to hazards.

B. PPE that is in disrepair must be discarded or removed from service until repaired.

VI. PROGRAM REVIEW

A. H&S will conduct a periodic program review at least once every three years.

VII. PPE ALLOCATION

The function of this section is to create clear and consistent guidelines in which Strategic Construction Solutions will use to distribute the proper PPE to employees. Strategic Construction Solutions provides safety equipment and clothing to their employees to protect them from workplace hazards that can cause injury or harm. PPE is not a substitute for a good engineering control, administrative controls or work practices. Strategic Construction Solutions does not allow employee owned PPE or equipment to be used or worn on Strategic Construction Solutions job sites, as Strategic Construction Solutions is not able to ensure proper PPE selection.

Supervisors, crew chiefs, and Client job requirements will be vital in determining what PPE and equipment is to be used, based on completion of PPE Hazard Assessment form (Attachment 1) using project site requirements, job classification, and/or OSHA Standards. Supervisors, crew chiefs and foremen will be responsible for implementing and enforcing PPE policies and use. He/she will also be responsible for its availability, proper maintenance, for training employees in its use and care, and for enforcing regulations regarding its wear and use.

MANDATORY REQUIREMENTS

Strategic Construction Solutions will provide the items listed in the table below by job classification, for employee use on all Strategic Construction Solutions projects. All PPE/clothing items have a specific life cycle and replacement requirement as listed in the section titled Clothing/PPE Replacement table.

	Safety Glasses	*Gloves*	*Ear Plugs*	*Hard Hat*	*High Vis Safety Vest*	*High Vis Surveyor Safety Vest*	*High Vis T-Shirt*	*Safety Boot Allowance*
Non Field Personnel								
Survey	**YES**	**YES**	**YES**	**YES**		**YES**	**YES**	**YES**
Survey – Oil & Gas	**YES**	**YES**	**YES**	**YES**		**YES**	**YES**	**YES**
Survey – E&P	**YES**	**YES**	**YES**	**YES**		**YES**	**YES**	**YES**
Field - Environmental	**YES**	**YES**	**YES**	**YES**	**YES**			**YES**
Field – Electrical	**YES**	**YES**	**YES**	**YES**	**YES**			**YES**
Field – Commercial Construction Management	**YES**	**YES**	**YES**	**YES**	**YES**		**YES**	**YES**
Field – Residential Construction Management	**YES**			**YES**				**YES**

OPTIONAL CLOTHING/PPE

Strategic Construction Solutions may choose to provide the items listed in the below table, by job classification, for employee use on projects. The items listed on this table will be requested by an Strategic Construction Solutions Supervisor/Crew Chief if the project site requirements for our Clients dictate that specific clothing/PPE is required. In addition, Strategic Construction Solutions, at its sole discretion, may choose to provide "optional" clothing/PPE to employees as a perk or bonus. All PPE/clothing items have a specific life cycle and replacement requirement as listed in the section titled Clothing/PPE Replacement table.

	Fire Retardant Clothing	*Arc Flash Resistant Clothing*	*High Vis Rain Gear*	*Fire Resistant Cold Weather Gear*	*Cold Weather Gear*	*Gaiters, Snake Protection*	*Respirator, Half Face*
Non Field Personnel							
Survey			**YES**	**YES**		**YES**	
Survey – Oil & Gas	**YES**		**YES**		**YES**	**YES**	
Survey – E&P		**YES**	**YES**		**YES**	**YES**	
Field - Environmental	**YES**		**YES**	**YES**	**YES**	**YES**	**YES**
Field - Electrical		**YES**	**YES**		**YES**		
Field – Commercial Construction Management					**YES**		
Field – Residential Construction Management					**YES**		

	Full Tyvek Coveralls	*Collared Tyvek Coverall*	*Tyvek Boot Covers*	*Chemical Resistant Gloves*	*Disposable Respirators*	*Face Shield*	*Respirator, Full Face*
Non Field Personnel							
Survey							
Survey – Oil & Gas							
Survey – E&P							
Field - Environmental	**YES**	**YES**	**YES**	**YES**	**YES**	**YES**	**YES**
Field - Electrical							
Field – Commercial Construction Management							
Field – Residential Construction Management							

CLOTHING/PPE REPLACEMENT TABLE

PPE Item	Life Cycle/Replacement Requirements
Mandatory PPE	**Estimated life cycle, final decision will be left with Supervisor*
• Hard Hat	• Every 3 years, unless structurally damaged*
• Safety Glasses	• As needed. Return old pair for new pair
• Safety Gloves	• As needed. Return old pair for new pair
• Ear Plugs	• As needed.
• High Vis Safety Vest	• As needed. Return old vest for a new one*
• High Vis Surveyor Safety Vest	• Every 3 years, unless extensively damaged*
• High Vis T-Shirt	• Every 12 months
• Safety Boot Allowance	• $100 allowance provided yearly for Field Staff, every 3 years for Engineering/Office Staff.
Job Specific/Optional PPE	
• Fire Retardant Clothing (Shirt & Pants)	• Every 12 months*
• Fire Resistant Clothing (Shirt & Pants)	• Every 12 months*
• High Vis Rain Gear (Full Set)	• As required*
• Fire Resistant Winter Coat	• As required, Every 3 years*
• Fire Resistant Winter Bibs	• As required, Every 3 years*
• Non FR Winter Coat	• As required, Every 3 years*
• Tyvek Coverall	• As required
• Tyvek Booties	• As required
• Chemical Resistant Gloves	• As required
• Disposable Respirator	• As required
• Face Shield	• As needed. Return old shield for new one*
• Non FR Winter Bibs	• As required, Every 3 years*
• Gaiters, Snake Protection	• As needed. Return old pair for new pair*
• Respirator, Full Face	• As needed. Return old respirator for new one*
• Respirator, Half Face	• As needed. Return old respirator for new one*
All requests for replacement PPE must come from a Supervisor or Crew Chief via the Employee PPE Requisition form (Attachment 3) and only AFTER old or damaged PPE has been deemed unsafe for use.	

VIII. REFERENCES

29 CFR 1910.132

OSHA and Cal/OSHA PPE Standard, CFR 1910.1200 and CCR Title 8, §3380)

REVISION DATE	REVIEW DATE	REVISION NUMBER	REVISION COMMENTS	AUTHOR
12/10/2015	12/10/2015	0	Reformatted and edited document	Bill Oswald
12/16/2015	12/16/15	1	Reformatted and edited document	K. Rodriguez
01/14/2016	01/14/2016	2	Added PPE forms/clothing policy	K. Rodriguez
02/10/2016		3	Added Environmental PPE/updated forms	K. Rodriguez
01SEP16		4	Remove payback policy	K. Rodriguez
02SEP16		5	Add CM policy	K. Rodriguez
09/09/2016	09/09/2016	5.1	Logo Change from SCS to Strategic Construction Solutions	Bill Oswald

Attachment 1

HAZARD ASSESSMENT FOR PPE

Use with Strategic Construction Solutions Policy HS C010 Personal Protective Equipment (PPE)

This tool can help you do a hazard assessment to see if your employees need to use personal protective equipment (PPE) by identifying activities that may create hazards for your employees. The activities are grouped according to what part of the body might need PPE. You can make copies, modify and customize it to fit the specific needs of your particular work place, or develop your own form that is appropriate to your work environment.

This tool can also serve as written certification that you have done a hazard assessment as required by HS C010 Document your hazard assessment for PPE. Make sure that the blank fields at the beginning of the checklist (indicated by *) are filled out (see below, Instructions #4).

Instructions:

1. Do a walk through survey of each work area and job/task. Read through the list of work activities in the first column, putting a check next to the activities performed in that work area or job.
2. Read through the list of hazards in the second column, putting a check next to the hazards to which employees may be exposed while performing the work activities or while present in the work area. (For e.g., work activity: chopping wood; work-related exposure: flying particles).
3. Decide how you are going to control the hazards. Try considering engineering, work place, and/or administrative controls to eliminate or reduce the hazards before resorting to using PPE. If the hazard cannot be eliminated without using PPE, indicate which type(s) of PPE will be required to protect your employee from the hazard.
4. Make sure that you complete the following fields on the form (indicated by *) to certify that a hazard assessment was done:
    - Name of your work place
    - Address of the work place where you are doing the hazard assessment
    - Name of person certifying that a workplace hazard assessment was done
    - Date the hazard assessment was done

PPE Hazard Assessment Certification Form

*Name of work place:		*Assessment conducted by:	
*Work place address:		*Date of assessment:	
Work area(s):		Job/Task(s):	

*Required for certifying the hazard assessment. Use a separate sheet for each job/task or work area

• EYES

Work activities, such as:	Work-related exposure to:	Can hazard be eliminated without the use of PPE?
☐ abrasive blasting ☐ sanding	☐ airborne dust	Yes ☐ No ☐
☐ chopping ☐ sawing	☐ flying particles	If no, use:
☐ cutting ☐ grinding	☐ blood splashes	☐ Safety glasses ☐ Side shields
☐ drilling ☐ hammering	☐ hazardous liquid chemicals	☐ Safety goggles ☐ Dust-tight goggles
☐ welding	☐ intense light	☐ Shading/Filter (#_____)
☐ punch press operations	☐ other: _____	☐ Welding shield
☐ other: _____		☐ Other: _____

• FACE

Work activities, such as:	Work-related exposure to:	Can hazard be eliminated without the use of PPE?
☐ cleaning ☐ foundry work	☐ hazardous liquid chemicals	Yes ☐ No ☐
☐ cooking ☐ welding	☐ extreme heat/cold	If no, use:
☐ siphoning ☐ mixing	☐ potential irritants: _____	☐ Face shield
☐ painting ☐ pouring molten	☐ other: _____	☐ Shading/Filter (#_____)
☐ dip tank operations metal		☐ Welding shield
☐ other _____		☐ Other: _____

• **HEAD**		
Work activities, such as: ☐ building maintenance ☐ confined space operations ☐ construction ☐ electrical wiring ☐ walking/working under catwalks ☐ walking/working under conveyor belts ☐ walking/working under crane loads ☐ utility work ☐ other: _____	Work-related exposure to: ☐ beams ☐ pipes ☐ exposed electrical wiring or components ☐ falling objects ☐ machine parts ☐ other: _____	Can hazard be eliminated without the use of PPE? Yes ☐ No ☐ If no, use: ☐ Protective Helmet ☐ Type A (low voltage) ☐ Type B (high voltage) ☐ Type C ☐ Bump cap (not ANSI-approved) ☐ Hair net or soft cap ☐ Other: _____
HANDS/ARMS		
Work activities, such as: ☐ baking ☐ material handling ☐ cooking ☐ sanding ☐ grinding ☐ sawing ☐ welding ☐ hammering ☐ working with glass ☐ using computers ☐ using knives ☐ dental and health care services ☐ other: _____	Work-related exposure to: ☐ blood ☐ irritating chemicals ☐ tools or materials that could scrape, bruise, or cut ☐ extreme heat/cold ☐ other: _____	Can hazard be eliminated without the use of PPE? Yes ☐ No ☐ If no, use: ☐ Gloves ☐ Chemical resistance ☐ Liquid/leak resistance ☐ Temperature resistance ☐ Abrasion/cut resistance ☐ Slip resistance ☐ Protective sleeves ☐ Other: _____

- **FEET/LEGS**

Work activities, such as:	Work-related exposure to:	Can hazard be eliminated without the use of PPE?
☐ building maintenance	☐ explosive atmospheres	Yes ☐ No ☐
☐ construction	☐ explosives	If no, use:
☐ demolition	☐ exposed electrical wiring or components	☐ Safety shoes or boots
☐ food processing	☐ heavy equipment	☐ Toe protection ☐ Metatarsal protection
☐ foundry work	☐ slippery surfaces	☐ Electrical protection ☐ Heat/cold protection
☐ logging	☐ tools	☐ Puncture resistance ☐ Chemical resistance
☐ plumbing	☐ other: _____	☐ Anti-slip soles
☐ trenching		☐ Leggings or chaps
☐ use of highly flammable materials		☐ Foot-Leg guards
☐ welding		☐ Other: _____
☐ other: _____		

- **BODY/SKIN**

Work activities such as:	Work-related exposure to:	Can hazard be eliminated without the use of PPE?
☐ baking or frying	☐ chemical splashes	Yes ☐ No ☐
☐ battery charging	☐ extreme heat/cold	If no, use:
☐ dip tank operations	☐ sharp or rough edges	☐ Vest, Jacket
☐ fiberglass installation	☐ other: _____	☐ Coveralls, Body suit
☐ irritating chemicals		☐ Raingear
☐ sawing		☐ Apron
☐ other: _____		☐ Welding leathers
		☐ Abrasion/cut resistance
		☐ Other: _____

BODY/WHOLE [1]		
Work activities such as: ☐ building maintenance ☐ construction ☐ logging ☐ utility work ☐ other: _____	Work-related exposure to: ☐ working from heights of 10 feet or more ☐ working near water ☐ other: _____	Can hazard be eliminated without the use of PPE? Yes ☐ No ☐ If no, use: ☐ Fall Arrest/Restraint: Type: _____ ☐ PFD: Type: _____ ☐ Other: _____ *(See Footnote 1)
LUNGS/RESPIRATORY [1]		
Work activities such as: ☐ cleaning ☐ pouring ☐ mixing ☐ sawing ☐ painting ☐ fiberglass installation ☐ compressed air or gas operations ☐ other: _____	Work-related exposure to: ☐ irritating dust or particulate ☐ irritating or toxic gas/vapor ☐ other: _____	Can hazard be eliminated without the use of PPE? Yes ☐ No ☐ *(See Footnote 1)
EARS/HEARING [1]		
Work activities such as: ☐ generator ☐ grinding ☐ ventilation fans ☐ machining ☐ motors ☐ routers ☐ sanding ☐ sawing ☐ pneumatic equipment ☐ punch or brake presses ☐ use of conveyors ☐ other: _____	Work-related exposure to: ☐ loud noises ☐ loud work environment ☐ noisy machines/tools ☐ punch or brake presses ☐ other: _____	Can hazard be eliminated without the use of PPE? Yes ☐ No ☐ *(See Footnote 1)

(1) *NOTE: There are other hazards requiring PPE (such as respiratory, noise, fall, etc. hazards), that are not included in this volume of the PPE Guide but will be covered in future volumes (see respiratory, hearing protection and for fall protection for further assessment). However, you should consider all hazards when you conduct your hazard assessment.*

Attachment 2

The following table from the U.S. Department of Energy (Occupational Safety and Health Technical Reference Manual) rates various gloves as being protective against specific chemicals and will help you select the most appropriate gloves to protect your employees. The ratings are abbreviated as follows:

Chemicals marked with an asterisk (*) are for limited service.	**VG**: Very Good	**G**: Good	**F**: Fair	**P**: Poor

Chemical Resistance Selection Chart for Protective Gloves

Chemical	Neoprene	Latex/Rubber	Butyl	Nitrile
Acetaldehyde*	VG	G	VG	G
Acetic acid	VG	VG	VG	VG
Acetone*	G	VG	VG	P
Ammonium hydroxide	VG	VG	VG	VG
Amy acetate*	F	P	F	P
Aniline	G	F	F	P
Benzaldehyde*	F	F	G	G
Benzene*	P	P	P	F
Butyl acetate	G	F	F	P
Butyl alcohol	VG	VG	VG	VG
Carbon disulfide	F	F	F	F
Carbon tetrachloride*	F	P	P	G
Castor oil	F	P	F	VG
Chlorobenzene*	F	P	F	P
Chloroform*	G	P	P	F
Chloronaphthalene	F	P	F	F
Chromic acid (50%)	F	P	F	F
Citric acid (10%)	VG	VG	VG	VG
Cyclohexanol	G	F	G	VG
Dibutyl phthalate*	G	P	G	G
Diesel fuel	G	P	P	VG
Diisobutyl ketone	P	F	G	P
Dimethylformamide	F	F	G	G
Dioctyl phthalate	G	P	F	VG
Dioxane	VG	G	G	G
Epoxy resins, dry	VG	VG	VG	VG
Ethyl acetate*	G	F	G	F
Ethyl alcohol	VG	VG	VG	VG
Ethyl ether*	VG	G	VG	G
Ethylene dichloride*	F	P	F	P
Ethylene glycol	VG	VG	VG	VG
Formaldehyde	VG	VG	VG	VG
Formic acid	VG	VG	VG	VG
Freon 11	G	P	F	G
Freon 12	G	P	F	G
Freon 21	G	P	F	G
Freon 22	G	P	F	G
Furfural*	G	G	G	G
Gasoline, leaded	G	P	F	VG

Gasoline, unleaded	G	P	F	VG
Glycerin	VG	VG	VG	VG
Hexane	F	P	P	G
Hydrazine (65%)	F	G	G	G
Hydrochloric acid	VG	G	G	G
Hydrofluoric acid (48%)	VG	G	G	G
Hydrogen peroxide (30%)	G	G	G	G
Hydroquinone	G	G	G	F
Isooctane	F	P	P	VG
Kerosene	VG	F	F	VG
Ketones	G	VG	VG	P
Lacquer thinners	G	F	F	P
Lactic acid (85%)	VG	VG	VG	VG
Lauric acid (36%)	VG	F	VG	VG
Lineolic acid	VG	P	F	G
Linseed oil	VG	P	F	VG
Maleic acid	VG	VG	VG	VG
Methyl alcohol	VG	VG	VG	VG
Methylamine	F	F	G	G
Methyl bromide	G	F	G	F
Methyl chloride*	P	P	P	P
Methyl ethyl ketone*	G	G	VG	P
Methyl isobutyl ketone*	F	F	VG	P
Methyl metharcrylate	G	G	VG	F
Monoethanolamine	VG	G	VG	VG
Morpholine	VG	VG	VG	G
Naphthalene	G	F	F	G
Napthas, aliphatic	VG	F	F	VG
Napthas, aromatic	G	P	P	G
Nitric acid*	G	F	F	P
Nitric acid, red and white fuming	P	P	P	P
Nitromethane (95.5%)*	F	P	F	F
Nitropropane (95.5%)	F	P	F	F
Octyl alcohol	VG	VG	VG	VG
Oleic acid	VG	F	G	VG
Oxalic acid	VG	VG	VG	VG
Palmitic acid	VG	VG	VG	VG
Perchloric acid (60%)	VG	F	G	G
Perchloroethylene	F	P	P	G
Petroleum distillates (naphtha)	G	P	P	VG
Phenol	VG	F	G	F
Phosphoric acid	VG	G	VG	VG
Potassium hydroxide	VG	VG	VG	VG
Propyl acetate	G	F	G	F
Propyl alcohol	VG	VG	VG	VG
Propyl alcohol (iso)	VG	VG	VG	VG
Sodium hydroxide	VG	VG	VG	VG
Styrene	P	P	P	F

Styrene (100%)	P	P	P	F
Sulfuric acid	G	G	G	G
Tannic acid (65)	VG	VG	VG	VG
Tetrahydrofuran	P	F	F	F
Toluene*	F	P	P	F
Toluene diisocyanate (TDI)	F	G	G	F
Trichloroethylene*	F	F	P	G
Triethanolamine (85%)	VG	G	G	VG
Tung oil	VG	P	F	VG
Turpentine	G	F	F	VG
Xylene*	P	P	P	F

Note: When selecting chemical-resistant gloves be sure to consult the manufacturer's Recommendations, especially if the gloved hand(s) will be immersed in the chemical.

Attachment 3

Employee PPE Requisition

(*To be completed by Supervisor/Manager*)

Employee Name: _____ Start Date: _____

Group: _____ Task: _____

Supervisor/Crew Chief: _____ Contact Number: _____

WILL THIS EMPLOYEE REQUIRE BASIC PPE? ❒ Yes ❒ No

Strategic Construction Solutions Hi Vis LS Tee – Lime green ❒Regular ❒FR/ARC	❒ Yes ❒ No ❒ SM ❒ MED ❒ LG ❒ XL ❒2XL ❒3XL	Strategic Construction Solutions Hi Vis Safety Vest - Lime green	❒ Yes ❒ No ❒ SM ❒ MED ❒ LG ❒ XL ❒2XL ❒3XL
Surveyor Hi Vis Safety Vest - Lime green	❒ Yes ❒ No ❒ SM ❒ MED ❒ LG ❒ XL ❒2XL ❒3XL	Safety Gloves	❒ SM ❒ MED ❒ LG ❒ XL ❒2XL ❒3XL
Strategic Construction Solutions Hard Hat – White w/ logo	❒ Yes	Safety Glasses	❒Indoor/Clear ❒Outdoor/Smoke
Ear protection	❒ Yes	Is this employee eligible for a safety boot allowance?	❒ Yes ❒ No
H2S Monitor	❒ Yes ❒ No		

New hire contact number: _____

Address where PPE is to be shipped: _____

_____

WILL THIS EMPLOYEE REQUIRE *SPECIFIC* PPE? ❒ Yes ❒ No

Shirt – FR, Long Sleeve, Collared, Khaki Brown	❒ Yes ❒ No ❒ MED ❒ LG ❒ XL ❒2XL ❒3XL	Pants – FR, Navy Blue	❒ Yes ❒ No Waist: _____ in Inseam: _____ in
Flame Resistant Cold Weather Gear			
FR Baklava – Covers head, ears, & neck **fits under hard hat*	❒ Yes ❒ No *One Size	FR Bib Overalls – Brown	❒ Yes ❒ No Waist: _____ in Inseam: _____ in
FR Jacket w/hood – Brown	❒ Yes ❒ No ❒ MED ❒ LG ❒ XL ❒2XL ❒3XL		

Non-Flame Resistant Cold Weather Gear				
Baklava – Covers head, ears, & neck **fits under hard hat*	❒ Yes ❒ No *One Size		FR Bib Overalls – Brown	❒ Yes ❒ No Waist: _____ in Inseam: _____ in
FR Jacket w/hood – Brown	❒ Yes ❒ No ❒ MED ❒ LG ❒ XL ❒2XL ❒3XL			
Environmental Gear				
Tyvek Deluxe Coverall – With Hood/Booties	❒ Yes ❒ No ❒ LG ❒ XL ❒2XL (per units of 5)		Tyvek Coverall – No hood or booties	❒ Yes ❒ No ❒ LG ❒ XL ❒2XL ❒3XL (per units of 5)
Tyvek Bootie Covers 18" high	❒ Yes ❒ No ❒ LG ❒ XL (Boxes of 25)		13", 11mil Nitrile Gloves Puncture, abrasion, cut & chemical resistant	❒ Yes ❒ No ❒ MED ❒ LG ❒ XL ❒2XL (Boxes of 12)
8 mil Extra Tough Nitrile Glove – Puncture/Abrasion/ Chemical resistant	❒ Yes ❒ No ❒ MED ❒ LG ❒ XL ❒2XL (Boxes of 50)		N95 Industrial Respirator with Valve - Lightweight protection against dust, dirt and oil-free air	❒ Yes ❒ No (One Size - Carton of 10)
Half Face Respirator **requires fit test & medical exam*	❒ Yes ❒ No ❒ MED ❒ LG		Face shield **Specify Task*	❒ Yes ❒ No
Other Specialty Gear				
Rain Gear – 3 pc Hi Vis Lime green	❒ Yes ❒ No ❒ MED ❒ LG ❒ XL ❒2XL ❒3XL		Chest Waders	❒ Yes ❒ No ❒ 6 ❒ 7 ❒ 8 ❒ 9 ❒ 10 ❒11 ❒ 12 ❒ 13
Gaiter – (FR avail) Snake Protection knee to ankle	❒ Yes ❒ No ❒ Regular ❒ Husky		Snake Protection Chaps Snake protection from knee to ankle with briar and bug protection from knee to hip	❒ Yes ❒ No ❒ Regular ❒ Husky
Hi Vis Winter Jacket Tingley Bomber Jacket	❒ Yes ❒ No ❒ MED ❒ LG ❒ XL ❒2XL ❒3XL		Goggles **Specify Task*	❒ Yes ❒ No
Impact gloves	❒ Yes ❒ No ❒ MED ❒ LG XL		Ice Traction Spikes -	❒ Yes ❒ No

Specialty gear justification: _____

Job Number/Coding: _____ *(if applicable)*

Manager/Supervisor Approval: _____

Attachment 4

Employee PPE Distribution

Employee Name: _____ Start Date: _____

Employee Number: _____ Group: _____ Task: _____

Supervisor/Crew Chief: _____ Contact Number: _____

NEW HIRE PPE DISTRIBUTION

Strategic Construction Solutions Hi Vis Tee – Lime green Short Sleeve_____ Long Sleeve _____ ❒Regular ❒FR/ARC	❒ Yes ❒ No ❒ MED ❒ LG ❒ XL ❒2XL ❒3XL Qty issued:_____	Strategic Construction Solutions Hi Vis Safety Vest - Lime green Qty issued:_____	❒ Yes ❒ No ❒ MED ❒ LG ❒ XL ❒2XL ❒3XL
Strategic Construction Solutions Hard Hat – White w/ logo	❒ Yes Qty issued:_____	**Surveyor** Hi Vis Safety Vest - Lime green Qty issued:_____	❒ Yes ❒ No ❒ MED ❒ LG ❒ XL ❒2XL ❒3XL ❒4XL
Safety Gloves Qty issued:_____	❒ MED ❒ LG ❒ XL ❒2XL ❒3XL	Safety Glasses Qty issued:_____	❒Indoor/Clear ❒Outdoor/Smoke
Ear Protection	❒ Yes	Is this employee eligible for a safety boot allowance?	❒ Yes ❒ No **Full Time Employees Only*
H2S Monitor	❒ Yes ❒ No		

EMPLOYEE PPE RESPONSIBILITY

The employee is responsible for following the requirements of the PPE policies. This involves:

1. Properly wearing PPE as required
2. Attending required training sessions
3. Properly caring for, cleaning, maintaining, and inspecting PPE as required
4. Following Strategic Construction Solutions PPE policies and regulations
5. Informing the supervisor of the need to repair or replace PPE

NOTE: *Employees who repeatedly disregard and do not follow PPE policies and rules will be subject to Strategic Construction Solutions disciplinary policy up to and including termination.*

Employee Length of Service/Payback Policy

When a new Field Team Member commences their employment with Strategic Construction Solutions, they will be provided with a set of Clothing/Gear/PPE associated with their job classification as designated in the "Mandatory Requirements" section in the Strategic Construction Solutions PPE policy. However, if the employee voluntarily decides to terminate their employment with Strategic Construction Solutions within the first six (6) months of employment, the employee will be responsible to reimburse Strategic Construction Solutions for the cost of the Clothing/Gear/PPE initially provided on the New Hire Distribution Form. If Clothing/Gear/PPE is returned to Strategic Construction Solutions upon separation and the items are in reusable condition, there will be no charge.

I have read and fully understand the statements above.

Employee signature: _____

Employee contact number: _____ Date of issuance: _____

WILL THIS EMPLOYEE REQUIRE SPECIFIC PPE? ❒ Yes ❒ No

Shirt – FR, Long Sleeve, Collared, Khaki Brown	❒ Yes ❒ No ❒ MED ❒ LG ❒ XL ❒2XL ❒3XL		Pants – FR, Navy Blue	❒ Yes ❒ No Waist: _____ in Inseam: _____ in
Flame Resistant Cold Weather Gear				
FR Baklava – Covers head, ears, & neck **fits under hard hat*	❒ Yes ❒ No *One Size		FR Bib Overalls – Brown	❒ Yes ❒ No Waist: _____ in Inseam: _____ in
FR Jacket w/hood - Brown	❒ Yes ❒ No ❒ MED ❒ LG ❒ XL ❒2XL ❒3XL			
Non-Flame Resistant Cold Weather Gear				
Baklava – Covers head, ears, & neck **fits under hard hat*	❒ Yes ❒ No *One Size		FR Bib Overalls – Brown	❒ Yes ❒ No Waist: _____ in Inseam: _____ in
FR Jacket w/hood - Brown	❒ Yes ❒ No ❒ MED ❒ LG ❒ XL ❒2XL ❒3XL			
Environmental Gear				
Tyvek Deluxe Coverall – With Hood/Booties	❒ Yes ❒ No ❒ LG ❒ XL ❒2XL (per units of 5)		Tyvek Coverall – No hood or booties	❒ Yes ❒ No ❒ LG ❒ XL ❒2XL ❒3XL (per units of 5)
Tyvek Bootie Covers 18" high	❒ Yes ❒ No ❒ LG ❒ XL (Boxes of 25)		13", 11mil Nitrile Gloves Puncture, abrasion, cut & chemical resistant	❒ Yes ❒ No ❒ MED ❒ LG ❒ XL ❒2XL (Boxes of 12)
8 mil Extra Tough Nitrile Glove – Puncture/Abrasion/ Chemical resistant	❒ Yes ❒ No ❒ MED ❒ LG ❒ XL ❒2XL (Boxes of 50)		N95 Industrial Respirator with Valve - Lightweight protection against dust, dirt and oil-free air	❒ Yes ❒ No (One Size - Carton of 10)
Half Face Respirator **requires fit test & medical exam*	❒ Yes ❒ No ❒ MED ❒ LG		Face shield **Specify Task*	❒ Yes ❒ No
Other Specialty Gear				
Rain Gear – Hi Vis Lime green	❒ Yes ❒ No ❒ MED ❒ LG ❒ XL ❒2XL ❒3XL		Chest Waders	❒ Yes ❒ No ❒ 6 ❒ 7 ❒ 8 ❒ 9 ❒ 10 ❒11 ❒ 12 ❒ 13
Gaiter – Snake Protection knee to ankle	❒ Yes ❒ No ❒ Regular ❒ Husky		Snake Protection Chaps Snake protection from knee to ankle with briar and bug protection from knee to hip	❒ Yes ❒ No ❒ Regular ❒ Husky
Hi Vis Winter Jacket Tingley Bomber Jacket	❒ Yes ❒ No ❒ MED ❒ LG ❒ XL ❒2XL ❒3XL		Goggles **Specify Task*	❒ Yes ❒ No
Impact gloves –	❒ Yes ❒ No ❒ MED ❒ LG XL			

Specialty gear justification: _____

Job Number/Coding: _____ *(if applicable)*

Manager/Supervisor Approval: _____

HSE MANUAL

SECTION #HS C012

Respiratory Protection Policy

Revision 3.1_09SEP2016

I. SCOPE

1. This document is applicable to all Strategic Construction Solutions personnel who are performing duties requiring the use of respiratory protection to prevent unnecessary exposure to airborne concentrations of toxic materials equal to or greater than the permissible limits established in existing Federal occupational safety and health standards or criteria.
2. This document outlines the minimal acceptable requirements for a respiratory protection program, delineates responsibilities, provides selection criteria in determining respiratory protection needs, and lists currently approved respiratory protective devices used at Strategic Construction Solutions.

II. RESPONSIBILITIES

1. **Safety Department**:
    a. The Director of Safety (or designee) is the Program Administrator
    b. Review the operations for which respiratory protective equipment may be required
    c. Make periodic surveys of operations and equipment at Strategic Construction Solutions to assure adequate protection of employees is being provided
    d. Specify the appropriate equipment. The job situation, exposures involved, exposure levels, and respiratory protection factors will be taken into consideration when specifying a respirator. An inventory of all jobs for which respirators are required shall be maintained in the Office of Safety.
    e. Provide training on the storage, use and care of respiratory protective equipment
    f. Maintain a list of employees medically approved for use of respiratory protective equipment
    g. Generate a written Respiratory Protection Program (HS C012) and update as needed
    h. Conduct annual inspections and evaluations to determine the continued effectiveness of the Respiratory Protection Program (HS C012)
    i. Ensure fit testing takes place for each respirator wearer
2. **Supervisor and Managers Shall**:
    a. Contact the Safety Department at safety@atwell-group.com when they suspect a respirator may be required for a job
    b. Insure that employees are provided with respirators at no cost to the employee
    c. Attend training on the proper storage, use and maintenance of respiratory protective equipment
    d. Insure that employees are scheduled and receive medical exams, and medical approval to wear a respirator when required
    e. Insure that employees clean and maintain the respiratory protective equipment properly
    f. Insure that employees using respirators voluntarily are provided with the information in Appendix A.

g. Insure that employees using respirators are provided an initial fit test before use and an annual fit test thereafter

3. **Employees Shall**:
    a. Attend training on the storage, use and care of respiratory protective equipment.
    b. Be clean shaven in areas where facial hair may prevent a proper face seal.
    c. Store, use and maintain respirators in accordance with instructions given in training.
    d. Report to the supervisor any operations or jobs which they suspect respiratory protection may be needed.

III. DEFINITIONS

For the purpose of this policy, the following definitions apply:

1. **NIOSH-certified:** Tested and listed as satisfactory by the National Institute for Occupational Safety and Health (NIOSH)
2. **Contaminant:** A harmful, irritating, or nuisance material in concentrations exceeding those normally found in ambient air
3. **Disinfection:** The destruction of pathogenic organisms, especially by means of chemical substances
4. **Dusts:** Solid particles, mechanically produced, with a size ranging from submicroscopic to macroscopic
5. **Emergency:** An unplanned event when a hazardous atmosphere of unknown chemical or particulate concentration suddenly occurs, requiring immediate use of a respirator for escape from or entry into the hazardous atmosphere to carry out maintenance or some other task

    Note: *This may or may not include cleanup, maintenance, or repair in unknown contaminant concentrations or oxygen deficiency*
6. **Evacuation or escape:** An unplanned event when a hazardous atmosphere of unknown chemical or particulate concentration suddenly occurs, requiring immediate use of a respirator for exiting the area only
7. **Fumes:** Solid particles generated by condensation from the gaseous state, generally after volatilization from molten metals, with a size usually less than 1 (one) micrometer in diameter
8. **Gases:** Substances which are gaseous at ordinary temperatures and pressures
9. **Immediately dangerous to life or health (IDLH):** A condition posing an immediate threat to life or health, or an immediate threat of severe exposure to contaminants likely to have adverse delayed effects on health. This condition includes atmospheres where oxygen content by volume is less than 19 percent.
10. **Mists:** Suspended liquid droplets generated by condensation or by breaking up of liquid with a size ranging from submicroscopic to macroscopic
11. **Oxygen deficient atmosphere:** An atmosphere containing 19.5 percent or less oxygen by volume
12. **Particulate matter:** A suspension of fine solid or liquid particles or fibers in air, such as dust, fog, fume, mist, smoke or sprays

13. **Pneumoconiosis-producing dust:** Dust which, when inhaled, deposited, and retained in the lungs, may produce signs, symptoms, and findings of pulmonary disease
14. **Radon daughters:** Particulate decay products of radon
15. **Respirator:** An approved safety device designed to provide the wearer with respiratory protection against inhalation of airborne contaminants and for some devices, protection against oxygen-deficient atmospheres
16. **Respiratory minute volume:** The amount of air inspired per minute
17. **Shall:** Indicates a requirement that is essential to meet the currently accepted standards of protection or Federal rules and regulations
18. **Should:** Indicates an advisory recommendation that is to be applied when practical
19. **Vapor:** The gaseous state of a substance that is solid or liquid at ordinary temperature and pressure

IV. REQUIREMENTS

1. Selection and use of Respiratory Protective Devices
    a. Respirators are considered an acceptable method of protecting the health of Strategic Construction Solutions personnel only under the following circumstances:
        i. When it has been determined to the satisfaction of the Safety Department that there are no feasible engineering or work practice controls that can be used to adequately control the hazard
        ii. During intermittent, non-routine operations (i.e., not exceeding 1 (one) hour/day for 1 (one) day/week)
        iii. During the interim periods when engineering controls are being designed and/or installed
        iv. During emergencies
    b. Voluntary Usage: It is not the policy of Strategic Construction Solutions to provide respiratory protection if not needed; however, if an employee expresses an absolute need, an appropriate respirator will be provided and all provisions of this policy will apply. The supervisor is to insure that the information provided in Appendix A is provided to the said employee.
    c. All respirators used must be certified by the National Institute for Occupational Safety and Health (NIOSH) and shall only be used in accordance with the terms of that certification.
    d. The correct respirator shall be specified for each job. The Safety Department shall determine the type of respiratory protective device best suited for the task.
    e. The individual issuing the respirators shall be adequately instructed to insure that the correct respirator is used.
    f. The date of issuance shall be recorded.
    g. Respirator selection and use shall take into account the following:
        i. Health and safety factors
        ii. Nature of hazard
        iii. Intended use and limitations of respiratory protective devices

iv. Movement and work-rate limitations
v. Emergency escape time and distance requirements
vi. Training requirements

h. Human factors is influenced by:

i. Comfort
ii. Ability to breathe without objectionable resistance
iii. Adequate visibility under all conditions
iv. Provisions for wearing prescription lenses
v. Ability to communicate
vi. Ability to perform all tasks without undue interference

2. Classification and description of respirators

Industrial respiratory protective devices have been designed, tested, and approved for protection against specific industrial exposures. These devices are conveniently grouped into two general classifications according to mode of operation.

a. Air Purifying Respirators

i. Gas masks and chemical cartridges (gases and vapors)
ii. Particulates (dusts, fog, fume, mist, smoke, and sprays)
iii. Combination (gas, vapor, and particulate)
a. Cartridges should be changed according to the manufacturer's directions or on the basis of breakthrough data, if available
b. Respirators using cartridges or canisters must be equipped with an end-of-service-life indicator (ESLI) certified by NISOH
c. If there is no ESLI available a change schedule will be formulated based on the manufacturers recommendations, objective information or data that will ensure the cartridges or canisters are changed before the end of their service life.

b. Atmosphere Supplying Respirators

i. Self-contained Breathing Apparatus SCBA

ii. Supplied air respirator with airline attached to a source of breathing air

a. Some respirators have a means for indicating the remaining service life. Some type of warning is available for all self-contained breathing apparatus. This may be a pressure gauge, timer, audible or physical alarm. The user should understand the operation and limitations of each type of warning device.

3. Limitations and use of respiratory protective devices

a. The degree of respiratory hazard, as it refers to the selection and classification of respirators, depends upon the atmospheric oxygen concentration; contaminant's physical state, toxicity and concentration; the presence of other contaminants or stress factors in the working environment; and employee exposure time and susceptibility. Respiratory hazards may be classified as gas and vapor contaminants (immediately or not immediately dangerous to life or health), particulate contaminants (immediately or not immediately dangerous to life or health), and oxygen deficiencies. Each classification requires a different degree of respiratory protection.

b. Respirator selection and use in atmospheres IDLH. It is the policy of Strategic Construction Solutions that employee will not enter atmosphere that are IDLH.

However, in the event of an emergency, properly trained personnel may be required to assist.

i. In areas where the wearer, with failure of the respirator, could be overcome by a toxic or oxygen-deficient atmosphere, at least one individual person shall be present with suitable rescue equipment in the form of self-contained breathing apparatus and protective clothing. Communications (visual, voice or signal line) shall be maintained between both or all individuals present. Planning shall be such that one individual will be unaffected in any likely incident and have the proper rescue equipment to be able to assist the other(s) in case of emergency.

ii. When self-contained breathing apparatus are used in IDLH atmospheres, standby personnel shall be present with suitable rescue equipment.

iii. Supplied air respirators are not approved for use in immediately dangerous to life and health (IDLH) atmospheres unless an auxiliary five minute pack air supply or an air storage receiver with an alarm is also provided because no respiratory protection is provided if the air supply fails.

iv. Persons using supplied air respirators in IDLH atmospheres shall be equipped with safety harnesses and safety lines for lifting or removing persons from hazardous atmospheres or other equivalent provisions for the rescue of persons from hazardous atmospheres shall be used.

v. Standby personnel with suitable self-contained breathing apparatus shall be located at the nearest fresh air base for emergency rescue.

vi. The air supply hose from a compressor or cylinder air supply will be protected from damage, including cutting, kinking, crushing or burning. Hose couplings will be protected against disconnection. Trailing hoses shall be arranged to minimize tripping and to permit ready escape.

c. Other considerations for respirator selection:

i. **Exposure time**: Exposure time determines the length of time for which respiratory protection is needed, including the time necessary to enter and exit a contaminated area.

ii. **Activity of the wearer**: The work to be covered, work rate, and mobility required of the wearer in carrying out his work should be considered in respirator selection.

iii. **Unusual hazards**: Unique factors, which may add additional dimensions to the hazard potential and must be considered when selecting respirators include, for example, skin absorption of the contaminant, skin irritation, eye irritation, and radiation of skin or whole body.

iv. **Vision:** All face pieces will restrict, to some degree, the wearer's vision. This may increase accident potential. Other problems include wearing of prescription glasses and fogging of the respirator lens.

v. **Communications:** Effective speech communication may be required in jobs for which the respirator is being selected. Conventional respirators distort the human voice. The respirator valve usually provides the pathway for some speech transmission over short distances in relatively quiet areas. However, talking can induce face piece or component leakage and should be limited while wearing the respirator. Mechanical and/or electrical speech transmission devices which eliminate these problems are available.

vi. **High Temperatures:** An employee working in areas of high ambient or radiant temperature is under potential stress. Any additional stress resulting from use of respirators should, therefore, be minimized. Strategic Construction Solutions will insure that personnel required to use or to supervise other personnel using respiratory protective devices are provided training annually or as needed.

4. **Training:** Both supervisors and workers shall be instructed by competent persons knowledgeable in the area of respiratory protection. Training shall provide individuals an opportunity to handle the respirator, have it fitted properly, test its face seal, and wear it in normal air for a period of time to become familiar with it.

    a. Minimum training shall include:

        i. Instruction in the nature of the hazard, whether acute, chronic, or both, and what may happen if the respirator is not used

        ii. What is the proper type of respirator for each hazardous atmosphere

        iii. The respirator's capabilities and limitations

        iv. Annual hands on instruction and training in the use of the respirator. Training should also include recognition End of Life Indicators (ESLI) on cartridges and canisters

        v. Classroom and field training to recognize and cope with emergency situations

        vi. Instructions on cleaning and maintenance of the respirators

5. **Fit Testing**: Every respirator wearer shall receive fitting instructions including demonstrations and practice in how the respirator should be worn, how to adjust it, and how to determine if it fits properly. It is the Safety Department and Supervisors responsibility to ensure that the employee receive an initial fit test as well as an annual fit test.

    a. Varieties of respirators should be available to employees. Facial structure varies considerably from one individual to another. The respirator wearer must be clean shaven to insure proper fit and seal.

    b. Respirators are made in various sizes ranging from small, medium and large. Different sizes of the same model or different models of approved respirators must be available to employees.

    c. Before initial use, each respirator shall be properly fitted, leakage tests performed, and the face piece-to-face seal tested in a realistic test situation. Records of fit tests shall be maintained. These records shall, as a minimum, contain date of fit test, name of employee, make, model and size of the respirator tested and the results of the test.

    d. Individuals wearing corrective glasses must maintain a proper seal on the respirator. Temple bars or straps extend through the sealing edge of the face piece is not allowed. Kits for mounting corrective lenses inside full face pieces can be purchased. When an employee must wear corrective lenses as part of the face piece, the face piece and lenses shall be fitted by qualified individuals to provide good vision, comfort and a gas-tight seal.

    e. Each time the wearer puts on the respirator, positive and negative pressure tests shall be conducted to insure a satisfactory face fit. Employees must maintain a clean shaven face to achieve the best fit of the respirator. More than 3 (three) days growth of a beard, sideburns, a skullcap that projects under the face piece, temple pieces on corrective lenses, can prevent a good face piece-to-face seal. There are two types of fit

testing that need to be performed, fitting the proper sizes respirator to the employees face and checking the fit of the seals when first donning the respirator.

f. Fit Testing, Fitting the Respirator:

i. Qualitative fit testing is a pass/fail test method that uses your sense of taste or smell, or your reaction to an irritant in order to detect leakage into the respirator face piece. Qualitative fit testing does not measure the actual amount of leakage. Whether the respirator passes or fails the test is based simply on you detecting leakage of the test substance into your face piece. There are four qualitative fit test methods accepted by OSHA:

a. Isoamyl acetate, which smells like bananas

b. Saccharin, which leaves a sweet taste in your mouth

c. Bitrex, which leaves a bitter taste in your mouth

d. Irritant smoke, which can cause coughing

Qualitative fit testing is normally used for half-mask respirators - those that just cover your mouth and nose. Half-mask respirators can be filtering facepiece respirators.

ii. Quantitative fit testing uses a machine to measure the actual amount of leakage into the facepiece and does not rely upon your sense of taste, smell, or irritation in order to detect leakage. The respirators used during this type of fit testing will have a probe attached to the facepiece that will be connected to the machine by a hose. There are three quantitative fit test methods accepted by OSHA:

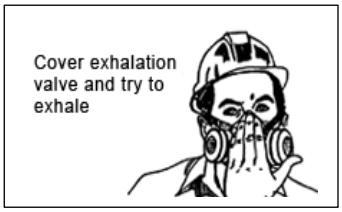
a. Generated aerosol

b. Ambient aerosol

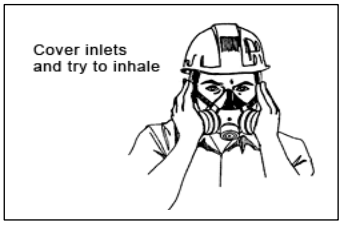
c. Controlled Negative Pressure

d. Quantitative fit testing can be used for any type of tight-fitting respirator

iii. Seal testing is performed when you first don the respirator mask.



a. **Positive pressure test:** Close the exhalation valve and exhale gently into the face piece. The face fit is considered satisfactory if a slight positive pressure can be built up inside the face piece without any evidence of outward leakage of air at the seal. For most respirators, this method of leak testing requires the wearer to place their handover the exhalant valve cover to perform this test.



b. **Negative pressure test:** Close off the inlet opening of the canister or cartridge(s) by covering with the palm of the hand(s), inhaling gently so that the face piece collapses slightly, and hold the breath for 10 seconds. If the face piece remains in its slightly collapsed condition and no inward leakage of air is detected, the tightness of the respirator is considered satisfactory.

6. Record Keeping

a. Department records of respirator training, Medical authorization and Fit Test shall be kept for at least the duration of employment. These records shall include the following minimal information:

i. Name, social security number, and shall be initialed by the employee
ii. Job title
iii. Department, work location, supervisor's name
iv. Date of training or testing
v. Date of medical evaluation
vi. Type of respirator used
vii. Success or failure of person to obtain satisfactory fit if a quantitative fitting test was performed
viii. Respirator protection factor based upon test results if a quantitative fitting test was performed
ix. Name of person performing the training or testing
x. The presence of facial hair, long hair or side burns, etc.
xi. Wearer's need for glasses or other protection
xii. Other pertinent information

7. Maintenance, Care and Inspection of Respiratory Protective Devices

a. When a respirator is issued to an individual, that individual is responsible for primary maintenance and care of the respirator. Equipment shall be properly maintained to retain its original effectiveness.

i. All respirators shall be inspected routinely before and after each use.

ii. A respirator that is not routinely used but kept ready for emergency use shall be inspected after each use and at least monthly by the employee to assure that it is in satisfactory working condition.

iii. Self-contained breathing apparatus shall be inspected monthly. Air and oxygen cylinders shall be fully charged according to the manufacturer's instructions. It shall be determined that the regulator and warning devices function properly. A tag attached to the assembly shall be initialed by the inspector.

b. Respirator inspection shall include a check of the tightness of connections and the condition of the face piece, headbands, valves, connecting tube, and canisters. Rubber or elastomer parts shall be inspected for pliability and signs of deterioration. Stretching and manipulating rubber or elastomer parts with a massaging action will keep them pliable and flexible, and prevent them from hardening or stiffening during storage.

c. Respirators issued to specific individuals shall be cleaned and disinfected as frequently as necessary to insure that skin-penetrating and dermatitis-causing contaminants are removed from respirator surfaces. Respirators shall be cleaned and disinfected after each use.

i. The following procedure is recommended for cleaning and disinfecting respirators:

a. Remove any filters, cartridges, or canisters
b. Wash face piece and breathing tube in a cleaner-disinfectant solution. A brush may be used to facilitate dirt removal
c. Rinse completely in clean, warm water
d. Air dries in a clean area
e. Clean other respirator parts as recommended by the manufacturer
f. Inspect valves, head straps, and other parts; replace defective parts with new ones

g. Insert new filters, cartridges or canisters periodically as specified by the manufacturer; make sure the seal is tight
h. Place in plastic bag or other closed container for storage

ii. Cleaner-disinfectant solution may be commercially prepared solutions; which are followed by a clean, warm-water rinse and air dried; or respirators may be washed in a liquid detergent solution. After washing, additional disinfection may, if desired, be provided by dipping the mask in one of the following disinfectant solutions, followed by rinsing and air drying:
a. Hypochlorite solution (50 ppm chlorine) for 2 (two) minutes
b. Aqueous iodine solution (50 ppm iodine) for 2 (two) minutes

iii. Replacement or repair shall be done only by experienced persons using parts designed for the respirators. No attempt shall be made to replace components or to make adjustments or repairs beyond the manufacturer's recommendations. Reduction or admission valves or regulators shall be returned to the manufacturer or to a trained technician for adjustment or repair.

d. Respirator storage shall be as follows:

i. After inspection, cleaning, and necessary repair, respirators shall be stored to protect against dust, sunlight, heat, extreme cold, excessive moisture, or damaging chemicals and other contaminants. Routinely used respirators, such as dust respirators, may be placed in ziplock bags. Respirators should not be stored in such places as lockers or tool boxes unless they are in containers or cartons.

ii. Respirators shall be packed or stored so the face piece and exhalation valve will not be damaged by being subjected to crushing or cramming.

e. Respirator Inspections

i. Frequent random inspections shall be conducted by supervisors to assure that respirators are properly selected, used, cleaned and maintained.

ii. Respirators used routinely will be inspected during cleaning. Experienced personnel shall replace worn or deteriorated parts with parts designed for the respirator. No attempt shall be made to replace components or to make adjustments or repairs beyond the manufacturer's recommendations.

8. Medical Evaluations

a. Workers shall not be assigned to tasks requiring the use of respirators unless it has been determined by medical evaluation that they are physically able to perform their work while wearing the prescribed respiratory protection. Medical evaluations shall be completed initially prior to fit test or respirator usage.

b. The elements of this medical evaluation shall be the responsibility of a physician or other licensed health care professional. This evaluation will consist of a Medical Evaluation questionnaire (Appendix C) and pulmonary function screening. It may also include other procedures, such as tests of the cardiovascular and respiratory systems, which the medical examiner considers useful in evaluating the ability to use the respirators. Appendix B is the Medical Authorization for Respirator Use form which must be completed. This form must be reviewed and signed by the health care professional doing the evaluation. The medical questionnaire and examinations shall be administered confidentially during the employee's normal working hours or at a time and place convenient to the employee.

c. The following information must be provided to the physician or other licensed health care professional before a recommendation is made concerning an employee's ability to use a respirator.

   i. The type and weight of the respirator to be used by the employee
   ii. The duration and frequency of the respirator use (including use for rescue and response)
   iii. The expected physical effort
   iv. Additional protective clothing and equipment to be worn
   v. Temperature and humidity extremes that may be encountered

d. Follow-up medical evaluations shall be provided if:

   i. An employee demonstrates the need for a follow-up medical exam as determined by the physician or other licensed health care professional
   ii. The follow-up medical evaluation shall include any medical tests, consultations, or diagnostic procedures that the physician or other licensed health care professional deems necessary to make a final determination

9. Air Quality

   a. Compressed breathing air, used for respiration shall meet the following requirements:

      i. Cylinders shall be tested and maintained as prescribed in the Shipping Container Specifications of the Department of Transportation (49 CFR 178).

      ii. Breathing air for respirators may be supplied from cylinders or air compressor meeting the specification for grade D breathing air as defined in American National Standards Institute (ANSI) Standard Z86.1; Compressed Gas Association (CGA) Specification G-7.1, viz.: oxygen 19.5-23.5 percent, hydrocarbons (condensed) less than 5 mg/m3, carbon monoxide less than 10 ppm, and carbon dioxide less than 1000 ppm.

      iii. Strategic Construction Solutions will only use compressed air cylinders for breathing air supplied by a certified vendor. The use of compressor for supplying breathing air is not allowed for Strategic Construction Solutions projects.

         a. The air quality must be checked and a certificate issues by the breathing air supplier.

      iv. Airline couplings shall be incompatible with outlets for other gas systems to prevent inadvertent connection of airline respirators with non-breathing air equipment.

10. Program Evaluation

   a. The Safety Department shall conduct annual evaluations of the workplace to ensure that the written respiratory protection program is being properly implemented, and to consult employees to ensure that they are using respirators properly. The evaluation shall assess the following factors:

      i. Respirator fit
      ii. Appropriate respirator selection for the hazards present
      iii. Proper respirator use under the workplace conditions the employee encounters
      iv. Proper respirator maintenance
      v. Other factors if deemed necessary

V. REFERENCES

1. Respiratory Protection Standard, 29 CFR 1910.134, Cal/OSHA T8 CCR 5144

REVISION DATE	REVIEW DATE	REVISION NUMBER	REVISION COMMENTS	AUTHOR
15APR16	15APR17	1	Reformatted and edited document	Bill Oswald
04MAY16	04MAY17	2	edits	K Rodriguez
06MAY16	06MAY17	3	Add questionnaire	K Rodriguez
09/09/2016	09/09/2016	3.1	Logo Change from SCS to Strategic Construction Solutions	Bill Oswald

Appendix A

Information for Employees Using Respirators When Not Required Under this Policy

Respirators are an effective method of protection against designated hazards when properly selected and worn. Respirator use is encouraged, even when exposures are below the exposure limit, to provide an additional level of comfort and protection for workers. However, if a respirator is used improperly or not kept clean, the respirator itself can become a hazard to the worker. Sometimes, workers may wear respirators to avoid exposures to hazards, even if the amount of hazardous substance does not exceed the limits set by OSHA standards. If the employee provides their own respirator, they need to take certain precautions to be sure that the respirator itself does not present a hazard.

You should do the following:

1. Read and heed all instructions provided by the manufacturer on use, maintenance, cleaning and care, and warnings regarding the respirators limitations.
2. Choose respirators certified for use to protect against the contaminant of concern. NIOSH, the National Institute for Occupational Safety and Health of the U.S. Department of Health and Human Services, certifies respirators. A label or statement of certification should appear on the respirator or respirator packaging. It will tell you what the respirator is designed for and how much it will protect you.
3. Do not wear your respirator into atmospheres containing contaminants for which your respirator is not designed to protect against. For example, a respirator designed to filter dust particles will not protect you against gases, vapors, or very small solid particles of fumes or smoke.
4. Keep track of your respirator so that you do not mistakenly use someone else's respirator.

Print Name: _____ Date:_____

Signature: _____

Appendix B

Medical Determination Form

Employee Name: _____ Date: _____

It has been determined that _____ is medically able to use respiratory protective devices.

List any limitations that apply to the use of respiratory protective devices, or needs for a follow-up medical evaluation:

Limitations if any _____

_____

_____

_____

_____

Physicians Signature: _____ Date _____.

Employees Signature: _____ Date _____.

Appendix C

OSHA Respirator Medical Evaluation Questionnaire

This is mandatory for all respirator wearers to fill out and present to the Medical provider doing the evaluation. This is to be kept confidential between the Medical provider and Employee.

Name: Email:		Phone # ( )
Address:	City:	State: Zip Code:
Supervisor's Name:		Phone #: ( )

To the employer: Answers to questions in Section 1, and to question 9 in Section 2 of Part A, do not require a medical examination.

To the employee: Your employer must allow you to answer this questionnaire during normal working hours or at a time and place that is convenient to you. To maintain your confidentiality, your employer or supervisor must not look at or review your answers, and your employer must tell you how to deliver or send this questionnaire to the health care professional who will review it.

Part A. Section 1. (Mandatory) The following information must be provided by every employee who has been selected to use any type of respirator (please print).

1	Today's Date: _____
2	Your Name: _____
3	Your Age (to the nearest year): _____
4	Sex: ❒ Male ❒ Female
5	Height: _____ feet _____ inches
6	Weight: _____ lbs.
7	Job Title: _____
8	A phone number where you can be reached by the Health Care professional who reviews this questionnaire (include area code): ( ) _____
9	Best time to contact you at this number: _____ ❒am ❒pm
10	Has your employer told you how to contact the Health Care professional who will review this questionnaire: ❒Yes ❒No
11	Check the type of respirator you will use: (you can check more than one category)
	❒ a. N, R, or P disposable respirator (filter-mask, non-cartridge type only)
	❒ b. Other type (for example, half- or full-face piece type, powered-air purifying, supplied-air, self-contained breathing apparatus)
12	Have you worn a respirator? ❒Yes ❒No
	If yes, what type(s): _____
	_____

Part A. Section 2. (Mandatory) Questions 1 through 9 below must be answered by every employee who has been selected to use any type of respirator.

1	Do you currently smoke tobacco or have you smoked tobacco in the last month?	❒Yes ❒No
2	Have you had any of the following conditions?	
	a. Seizures	❒Yes ❒No
	b. Diabetes (sugar disease)	❒Yes ❒No
	c. Allergic reactions that interfere with your breathing	❒Yes ❒No
	d. Claustrophobia (fear of closed in places)	❒Yes ❒No
	e. Trouble smelling odors	❒Yes ❒No
3	Have you ever had any of the following pulmonary or lung problems?	
	a. Asbestosis	❒Yes ❒No
	b. Asthma	❒Yes ❒No
	c. Chronic Bronchitis	❒Yes ❒No

	d.	Emphysema	❒Yes ❒No
	e.	Pneumonia	❒Yes ❒No
	f.	Tuberculosis	❒Yes ❒No
	g.	Silicosis	❒Yes ❒No
	h.	Pneumothorax	❒Yes ❒No
	i.	Lung Cancer	❒Yes ❒No
	j.	Broken Ribs	❒Yes ❒No
	k.	Any chest injuries or surgeries	❒Yes ❒No
	l.	Any lung problem that you have been told about	❒Yes ❒No
4	Do you currently have any of the following symptoms of pulmonary or lung illness?		
	a.	Shortness of breath	❒Yes ❒No
	b.	Shortness of breath when walking fast on level ground or walking up a slight hill or incline	❒Yes ❒No
	c.	Shortness of breath when walking with other people at an ordinary pace on level ground	❒Yes ❒No
	d.	Have to stop for breath when walking at your own pace on level ground	❒Yes ❒No
	e.	Shortness of breath when washing or dressing yourself	❒Yes ❒No
	f.	Shortness of breath that interferes with your job	❒Yes ❒No
	g.	Coughing that produces phlegm (thick sputum)	❒Yes ❒No
	h.	Coughing that wakes you early in the morning	❒Yes ❒No
	i.	Coughing that occurs mostly when you are lying down	❒Yes ❒No
	j.	Coughing up blood in the last month	❒Yes ❒No
	k.	Wheezing	❒Yes ❒No
	l.	Wheezing that interferes with your job	❒Yes ❒No
	m.	Chest pain when you breathe deeply	❒Yes ❒No
	n.	Any other symptoms that you think may be related to lung problems	❒Yes ❒No
5	Have you ever had any of the following cardiovascular or heart problems?		
	a.	Heart attack	❒Yes ❒No
	b.	Stroke	❒Yes ❒No
	c.	Angina	❒Yes ❒No
	d.	Heart failure	❒Yes ❒No
	e.	Swelling in your legs or feet (not caused by walking)	❒Yes ❒No
	f.	Heart arrhythmia (heart beating irregularly)	❒Yes ❒No
	g.	High blood pressure	❒Yes ❒No
	h.	Any other heart problem that you've been told about	❒Yes ❒No
6	Have you ever had any of the following cardiovascular or heart symptoms?		
	a.	Frequent pain or tightness in your chest	❒Yes ❒No
	b.	Pain or tightness in your chest during physical activity	❒Yes ❒No
	c.	Pain or tightness in your chest that interferes with your job	❒Yes ❒No
	d.	In the past two years, have you noticed your heart skipping or missing a beat	❒Yes ❒No
	e.	Heartburn or indigestion that is not related to eating	❒Yes ❒No
7	Do you currently take medication for any of the following problems?		
	a.	Breathing or lung problems	❒Yes ❒No
	b.	Heart trouble	❒Yes ❒No
	c.	Blood pressure	❒Yes ❒No
	d.	Seizures	❒Yes ❒No
8	If you've used a respirator, have you ever had any of the following problems? *(If you've never used a respirator, check the following space and go to question 9)*		❒Never Used

	a. Eye irritation	❒Yes ❒No
	b. Skin allergies or rashes	❒Yes ❒No
	c. Anxiety	❒Yes ❒No
	d. General weakness or fatigue	❒Yes ❒No
	e. Any other problem that interferes with your use of a respirator	❒Yes ❒No
9	Would you like to talk to the health care professional who will review this questionnaire about your answers to this questionnaire?	❒Yes ❒No

Questions 10 to 15 below must be answered by every employee who has been selected to use either a full-face piece respirator or a self-contained breathing apparatus (SCBA). For employees who have been selected to use other types of respirators, answering these questions is voluntary.

10	Have you ever lost vision in either eye (temporarily or permanently)?	❒Yes ❒No
11	Do you currently have any of the following vision problems?	
	a. Wear contact lenses	❒Yes ❒No
	b. Wear glasses	❒Yes ❒No
	c. Color blind	❒Yes ❒No
	d. Any other eye or vision problem	❒Yes ❒No
12	Have you ever had an injury to your ears, including a broken ear drum?	❒Yes ❒No
13	Do you currently have any of the following hearing problems?	
	a. Difficulty hearing	❒Yes ❒No
	b. Wear a hearing aid	❒Yes ❒No
	c. Any other hearing or ear problem	❒Yes ❒No
14	Have you ever had a back injury?	❒Yes ❒No
15	Do you currently have any of the following musculoskeletal problems?	
	a. Weakness in any of your arms, hands, legs, or feet	❒Yes ❒No
	b. Back pain	❒Yes ❒No
	c. Difficulty fully moving your arms and legs	❒Yes ❒No
	d. Pain or stiffness when you lean forward or backward at the waist	❒Yes ❒No
	e. Difficulty fully moving your head up or down	❒Yes ❒No
	f. Difficulty fully moving your head side to side	❒Yes ❒No
	g. Difficulty bending at your knees	❒Yes ❒No
	h. Difficulty squatting to the ground	❒Yes ❒No
	i. Climbing a flight of stairs or a ladder carrying more than 25 lbs.	❒Yes ❒No
	j. Any other muscle or skeletal problem that interferes with using a respirator	❒Yes ❒No

Part B Any of the following questions, and other questions not listed, may be added to the questionnaire at the discretion of the health care professional who will review the questionnaire.

1	In your present job, are you working at high altitudes (over 5,000 feet) or in a place that has lower than normal amounts of oxygen?	❒Yes ❒No
	If "yes," do you have feelings of dizziness, shortness of breath, pounding in your chest, or other symptoms when you're working under these conditions	❒Yes ❒No
2	At work or at home, have you ever been exposed to hazardous solvents, hazardous airborne chemicals (e.g., gases, fumes, or dust), or have you come into skin contact with hazardous chemicals	❒Yes ❒No
	If "yes," name the chemicals if you know them _____	
3	Have you ever worked with any of the materials, or under any of the conditions, listed below?	

a. Asbestos ❒Yes ❒No
b. Silica (e.g., in sandblasting) ❒Yes ❒No
c. Tungsten/cobalt (e.g., grinding or welding this material) ❒Yes ❒No
d. Beryllium ❒Yes ❒No
e. Aluminum ❒Yes ❒No
f. Coal (e.g., mining) ❒Yes ❒No
g. Iron ❒Yes ❒No
h. Tin ❒Yes ❒No
i. Dusty environments ❒Yes ❒No
j. Any other hazardous exposures ❒Yes ❒No
If "yes," describe these exposures _____

4 List any second jobs or side businesses you have _____

5 List your previous occupations _____

6 List your current and previous hobbies _____

7 Have you been in the military services? ❒Yes ❒No
If "yes," were you exposed to biological or chemical agents (either in training or combat)? ❒Yes ❒No

8 Have you been in the military services? ❒Yes ❒No

9 Other than medications for breathing and lung problems, heart trouble, blood pressure, and seizures mentioned earlier in this questionnaire, are you taking any other medications for any reason (including over-the-counter medications) ❒Yes ❒No
If "yes," name the medications if you know them _____

10 Will you be using any of the following items with your respirator(s)?
a. HEPA Filters ❒Yes ❒No
b. Canisters (for example, gas masks) ❒Yes ❒No
c. Cartridges ❒Yes ❒No

11 How often are you expected to use the respirator(s)?
(Mark yes or no for all answers that apply to you)
a. Escape only (no rescue) ❒Yes ❒No
b. Emergency rescue only ❒Yes ❒No
c. Less than 5 hours per week ❒Yes ❒No
d. Less than 2 hours per day ❒Yes ❒No
e 2 to 4 hours per day ❒Yes ❒No
f. Over 4 hours per day ❒Yes ❒No

12 During the period you are using the respirator(s), is your work effort?
a. Light (less than 200 kcal per hour) ❒Yes ❒No
If "yes," how long does this period last during the average shift _____ hrs. _____ min

Examples of a light work effort are sitting while writing, typing, drafting, or performing light assembly work; or standing while operating a drill press (1-3 lbs.) or controlling machines.

b. Moderate (200 to 350 kcal per hour) ❒Yes ❒No
If "yes," how long does this period last during the average shift _____ hrs. _____ min
Examples of moderate work effort are sitting while nailing or filing; driving a truck or bus in urban traffic; standing while drilling, nailing, performing assembly work, or transferring a moderate load (about 35 lbs.) at trunk level; walking on a level surface about 2 mph or down a 5-degree grade about 3 mph; or pushing a wheelbarrow with a heavy load (about 100 lbs.) on a level surface

c. Heavy (above 350 kcal per hour ❒Yes ❒No
If "yes," how long does this period last during the average shift _____ hrs. _____ min
Examples of heavy work are lifting a heavy load (about 50 lbs.) from the floor to your waist or shoulder; working on a loading dock; shoveling; standing while bricklaying or chipping castings; walking up an 8-degree grade about 2 mph; climbing stairs with a heavy load (about 50 lbs.).

13 Will you be wearing protective clothing and/or equipment (other than the respirator) when you're using your respirator? ❒Yes ❒No
If "yes," describe this protective clothing and/or equipment _____

14 Will you be working under hot conditions (temperatures exceeding 77° F)? ❒Yes ❒No

15 Will you be working under humid conditions? ❒Yes ❒No

16 Describe the work you'll be doing while you're using your respirator(s)

17 Describe any special or hazardous conditions you might encounter when you're using your respirator(s) (for example, confined spaces, life-threatening gases):

18 Provide the following information, if you know it, for each toxic substance that you'll be exposed to when you're using your respirator(s)

Name of the first toxic substance _____
Estimated maximum exposure level per shift _____
Duration of exposure per shift _____
Name of the second toxic substance _____
Estimated maximum exposure level per shift _____
Duration of exposure per shift _____
Name of the third toxic substance _____
Estimated maximum exposure level per shift _____
Duration of exposure per shift _____

The name of any other toxic substances that you'll be exposed to while using your respirator

19	Describe any special responsibilities you'll have while using your respirator(s) that may affect the safety and well-being of others (for example, rescue, and security)

Appendix D

Filter Cartridge Selection and Change Procedures

It is the dual responsibility of the Supervisor, employee and the Safety department to determine appropriate Filter/Cartridges for the hazard and develop a change schedules for filter/cartridges used in air purifying respirators. The cartridge change schedule requirement applies only to respirators used for protection against gases or vapors, not particulates.

Selection

The Selection of the filter/cartridges is critical that it matches the airborne contaminate in the atmosphere that the employee will encounter. All filter/cartridges are color coded for the airborne contaminate. Contaminants come in different forms – generally: aerosols (solids/particles) and gases (gases, vapors). You can choose between the filter types to protect against one of these forms or a combination of both of them. Solids/particles: dusts, fibers, fumes, microorganisms (e.g. viruses, bacteria, fungi, spores) and mists. Gaseous substances: gases and vapors.

The following table shows you the color coding of filters according to NIOSH – which helps you to determine which filter-type is needed for the contaminants you are dealing with.

Color Code	Filter Type	Contaminants Present
	OV	Organic Vapor
	AG	Acid Gas (substances need to be determined) Example: Chlorine, hydrogen chloride, sulphide dioxide, chlorine dioxide
	OV/AG	Organic Vapors / Acid Gas
	AM/MA	Ammonia / Methylamine
	MV	Mercury Vapor
		Multi-Gas and Vapor
	P100	Particulates

Example: OV/AG-P100 

A filter with the above mentioned color code is suitable for the following contaminants:

- OV Gases and vapors of organic compounds
- AG Acid Gas
- P100 Particles (oil and non-oil)

Warning: If the contaminate is not known or the Oxygen levels ae below 19.5% then air purifying respirators should not be used.

Change Procedures

If available, the respirator wearer shall use the End-of-Service-Life Indicator (ESLI) to determine when to change out air-purifying elements.

If no ESLI is available for a particular the following methods can be used to determine and appropriate change schedule:

1. Manufacturers Information:
    a. Contact the manufacturer of the respirator or cartridge to determine the appropriate change schedule.
2. Rule of Thumb:
    a. If the concentration of the chemical is less than 200 ppm and the chemical's boiling point is greater than 70°C, you can expect a service life of 8 (eight) hours at a normal work rate.
    b. Service life is inversely proportional to work rate.
    c. Reducing concentrations by a factor of 10 will increase the service life by a factor of 5 (five).
    d. Humidity above 85% will reduce service life by 50%.

***Note: This should NOT be the sole method of determining service life. It can only be used as a guide. ***

The following chemical specific standards are already addressed by OSHA:

Acrylonitrile 1910.1045(h)(2)(ii)	End-of-service life or end of shift (whichever occurs first)
Benzene 1910.1028(g)(2)(ii)	Every 1, 2 or 4 hours dependent upon concentration according to Table and at beginning of each shift
Butadiene 1910.1051(h)(2)(ii)	Every 1, 2 or 4 hours dependent upon concentration according to Table and at beginning of each shift
Formaldehyde 1910.1048(g)(2)(ii)	For cartridges, every three hours or end of shift (whichever is sooner); for canisters, every 2 or 4 hours according to the schedule
Vinyl chloride 1910.1017(g)(3)(ii)	End-of-service life or end of shift in which they are first used (whichever occurs first)
Methylene chloride 1910.1052(g)(2)(ii)	Canisters may only be used for emergency escape and must be replaced after use

If there are any questions with developing a cartridge change schedule the Safety Department should be notified and appropriate measures will be taken to develop an appropriate change schedule.

HSE MANUAL

SECTION # HS C013

Short Service Employee (SSE) Policy

Revision 2.1_09SEP2016

I. SCOPE

A. Strategic Construction Solutions is committed to providing a safe and healthy work environment for our employees**.** Strategic Construction Solutions has adopted the following program to ensure that short service employees are identified, appropriately supervised, trained, mentored, and managed. This program is adopted in order to prevent accidents such as personal injury, injury to others, environmental damage, and/or property damage by the short service employee.

II. DEFINITIONS

A. Strategic Construction Solutions defines a Short Service Employee (SSE) as any person or personnel with less than six (6) months experience in his/her current position or with one's current employer. A person or persons can be classified as an SSE if they change jobs within the company they are working for or as a new hire for the same type of position from another company.

III. WORK ASSIGNMENTS AND RESRICTIONS

A. The following ratio and restrictions for SSE on the job site must be observed. A single employee as his own crew shall not be an SSE.

B. When crew/group sizes of two (2) to four (4) employees are assembled, no more than one (1) SSE per group/crew is allowed.

C. When working with crew/group sizes larger than four (4) members, the SSE's will not exceed 40% of the crew/group make up.

IV. COMMUNICATION AND NOTIFICATION

A. Project Mangers, Construction Managers and Supervisors will review personnel assignments during pre-job planning to ensure the number of SSEs do not exceed policy requirements.

V. IDENTIFICATION

A. All SSE personnel will be visibly identified. This will be done by employing the following methods:

1. In the field the each employee shall apply a SSE sticker to their hard hat identifying them as a SSE.

VI. MENTORING PROCESS

A. When employee is hired, HR assigns a mentor through the HR hiring process. The assigned mentor will be the mentor for all SSE. The mentor will monitor their SSE employees for Health, Environment, and Safety awareness.

B. The SSE may be removed from the SSE Program at the discretion of their Manager at the end of the required six-(6) month period if they have:

1. Demonstrated the ability to work safely in their position
2. Demonstrated knowledge of and complied with company's Policies, Standards, and Procedures
3. Deemed Qualified and competent in their job position.

VII. SUBCONTRACTORS

1. Strategic Construction Solutions will endeavor to avoid utilizing subcontractor SSEs during field operations. Subcontractors of Strategic Construction Solutions which utilize SSEs must follow this program or an equivalent program of their own, which has been approved by the Safety Director. Subcontractors will provide copies of their SSE program upon request of Strategic Construction Solutions.

REVISION DATE	REVIEW DATE	REVISION NUMBER	REVISION COMMENTS	AUTHOR
04AUG16	04AUG17	1	created document	Bill Oswald
10AUG16	10AUG16	2	Edit/reformatted document	K Rodriguez
09/09/2016	09/09/2016	2.1	Logo Change from SCS to Strategic Construction Solutions	Bill Oswald

STRATEGIC
CONSTRUCTION SOLUTIONS

HSE MANUAL

SECTION # HS C018

Fit for Duty Policy

Revision 1.1_09SEP2016

I. SCOPE

Strategic Construction Solutions is committed to providing a safe and healthy work environment for our employees. Strategic Construction Solutions full and part-time staff are expected to report for work fit for duty, which means able to perform their job duties in a safe, appropriate, and an effective manner free from the adverse effects of physical, mental, or emotional problems.

II. REQUIREMENTS

It is the goal of Strategic Construction Solutions to provide a safe workplace for all workers. To accomplish this goal we have adopted the following fitness for duty policy requirements.

A. Competency

Strategic Construction Solutions ensures workers are qualified and have the necessary education, experience, training, and are competent to perform their job tasks.

B. Physically Capable

Employees must be physically capable of performing all tasks associated to their job. Employees are required to assist Strategic Construction Solutions to maintain a safe and healthy working environment and to take all reasonable care not to put themselves or others at risk. Employee must notify their supervisor when fatigued and not able to perform their work safely.

Certain Job functions, DOT PHMSA or Client requirements may require a pre-employment physical prior to assignment or if an employee changes job assignment to a one that require a pre-assignment physical. In addition a post assignment or exit physical may be required.

C. Medication Reporting Requirements

Employees must notify their supervisor if they are taking prescription or over-the-counter medication that may impair their ability to work safely. Employees must report all medications they are taking.

Over-the-counter medications such as allergy or cold and flu medications could also impair one's ability to perform safely and must also be reported to their supervisor.

D. Employee Activity and Behavior

Strategic Construction Solutions is responsible for monitoring workers for unsafe behaviors and removing workers from the job site, if necessary. Employee's activities and behaviors will be monitored to determine if employee(s) should be removed from the work site.

Workers are prohibited from entering the workplace while under the influence of drugs or alcohol. The company will ensure that no person enters or remains at the job site while under the influence of drugs and/or alcohol. Employees are subject to the company Substance Abuse Policy (HS C017) that includes testing for pre-employment, post-accident, random, reasonable cause, return to duty, follow-up, and pre-access.

E. Employee Assistance

Strategic Construction Solutions will provide assistance to workers who are unable to safely perform their job duties. If an employee is determined to be unfit for duty, the company has a process in place to provide reasonable assistance to the employee. This may include, but is not limited to, transferring the worker to another role, providing a leave of absence, Employee Assistance Programs, etc.

Strategic Construction Solutions Human Resources will review each matter on a case by case basis.

Disciplinary action may occur for an employee reporting to work in a condition which could endanger their safety or the safety of any other person(s).

F. Training

The company Fit for Duty policies and procedures are communicated to employees. The company ensures workers are trained on the Fit for Duty policies and procedures for company.

Safe work practices and procedures must be followed. Safe work procedures must be in place prior to work beginning.

Employees shall follow our and our client's safety requirements. Examples may include, hot work permitting, confined space, lockout tagout, process safety management, electrical safety, operator safety and other standard work practices, safety rules, or procedures.

REVISION DATE	REVIEW DATE	REVISION NUMBER	REVISION COMMENTS	AUTHOR
03/29/2016	03/29/2016	1	created document	Bill Oswald
09/09/2016	09/09/2016	1.1	Logo Change from SCS to Strategic Construction Solutions	Bill Oswald

HSE MANUAL

SECTION #HS C019

Confined Space Entry Policy

Revision 2_15NOV2016

I. SCOPE

1. The purpose of Strategic Construction Solutions Confined Space Program is to set procedures that will ensure workers safe entry into confined spaces and permit-required confined spaces to perform routine tasks associated with their employment. This procedure is designed to provide the minimum safety requirements in accordance with the Occupational Safety and Health Administration's (OSHA) Confined Space Standard, 1910.146 and 1926.1201.

II. Background

1. A confined space is defined as any location that has limited openings for entry and egress, is not intended for continuous employee occupancy, and is so enclosed that natural ventilation may not reduce air contaminants to levels below the threshold limit value (TLV). Examples of confined spaces include: manholes, stacks, pipes, storage tanks, trailers, tank cars, pits, sumps, hoppers, and bins. Entry into confined spaces without proper precautions could result in injury, impairment, or death due to:
    a. An atmosphere that is flammable or explosive
    b. Lack of sufficient oxygen to support life
    c. Contact with or inhalation of toxic materials
    d. General safety or work area hazards such as steam or high pressure materials

III. RESPONSIBILITIES

1. **Safety Department**:
    a. The Director of Safety (or designee) is the Program Administrator
    b. Review the locations where Confined Spaces entry operations may be required.
    c. Make periodic surveys of operations and equipment at Strategic Construction Solutions to assure adequate entry procedures are followed during confined space entry activities.
    d. Specify the appropriate equipment needed for confined space entry. The job situation, exposures involved, exposure levels, and respiratory protection factors will be taken into consideration when evaluating Confined Space entry.
    e. Designated and qualify Project and Construction Managers to administrate the confines space program on work sites.
2. **Project Managers and Construction Managers**:
    a. Project Managers and or Construction Manager is the designated management representative in authorizing the Entry Into permit and Non permit confined spaces.
    b. Designates and assigns employees to the following roles:
        i. Entry supervisors for confined space entry
        ii. Assigned Attendant
        iii. Entry personnel

c. The PM/ CM or trained designee completes and fills in the confined space permit ensuring all precautions and test are completed.

d. Verifies the training of employees involved in confined space entry is current for the position they are fulfilling. Will only allow trained employees make confined space entry.

3. **Employees Shall**:

   a. Attend training on the requirements of Confined space entry.

   b. Stop any confined space entry if any unsafe condition exists or develops.

   c. Report to the any issues with the confined space entry activities to Project or Contract manger over the project.

IV. DEFINITIONS

For the purpose of this policy, the following definitions apply:

1. **Acceptable entry conditions:** means the conditions that must exist in a permit space, before an employee may enter that space, to ensure that employees can safely enter into, and safely work within, the space.
2. **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 this policy.
3. **Authorized entrant:** means an employee who is authorized by the entry supervisor to enter a permit space.
4. **Barrier:** means a physical obstruction that blocks or limits access.
5. **Blanking or blinding:** means the absolute closure of a pipe, line, or duct by the fastening of a solid plate (such as a spectacle blind, plug or a pancake blind) that completely covers the bore and that is capable of withstanding the maximum pressure of the pipe, line, or duct with no leakage beyond the plate.
6. **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.
7. **Confined space:** means a space that:

   a. Is large enough and so configured that an employee can bodily enter it;

   b. Has limited or restricted means for entry and exit; and

   c. Is not designed for continuous employee occupancy.

8. **Control:** means the action taken to reduce the level of any hazard inside a confined space using engineering methods (for example, by ventilation), and then using these methods to maintain the reduced hazard level. Control also refers to the engineering methods used for this purpose. Personal protective equipment is **not** a control.
9. **Controlling Contractor:** is the employer that has overall responsibility for construction at the worksite.

   Note. If the controlling contractor owns or manages the property, then it is both a controlling employer and a host employer.

10. **Double block and bleed:** means the closure of a line, duct, or pipe by closing and locking or tagging two in-line valves and by opening and locking or tagging a drain or vent valve in the line between the two closed valves.
11. **Early-warning system**: means the method used to alert authorized entrants and attendants that an engulfment hazard may be developing. Examples of early-warning systems include, but are not limited to: alarms activated by remote sensors; and lookouts with equipment for immediately communicating with the authorized entrants and attendants.
12. **Emergency:** means any occurrence {including any failure of power, hazard control or monitoring equipment) or event, internal or external, to the permit space that could endanger entrants.
13. **Engulfment:** means the surrounding and effective capture of a person by a liquid or finely divided (flowable) solid substance that can be aspirated to cause death by filling or plugging the respiratory system or that can exert enough force on the body to cause death by strangulation, constriction, crushing, or suffocation.
14. **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.
15. **Entry Employer:** means any employer who decides that an employee it directs will enter a permit space.

    Note. An employer cannot avoid the duties of the standard merely by refusing to decide whether its employees will enter a permit space, and OSHA will consider the failure to so decide to be an implicit decision to allow employees to enter those spaces if they are working in the proximity of the space.
16. **Entry permit (permit):** means the written or printed document that is provided by the employer who designated the space a permit space to allow and control entry into a permit space and that contains the information specified in this policy.
17. **Entry Rescue:** occurs when a rescue service enters a permit space to rescue one or more employees.
18. **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.

    Note. An entry supervisor also may serve as an attendant or as an authorized entrant, as long as that person is trained and equipped as required by this standard for each role he or she fills. Also, the duties of entry supervisor may be passed from one individual to another during the course of an entry operation.
19. **Hazard** means a physical hazard or hazardous atmosphere. See definitions below.
20. **Hazardous atmosphere** means an atmosphere that may expose employees to the risk of death, incapacitation, and impairment of ability to self-rescue (that is, escape unaided from a permit space}, injury, or acute illness from one or more of the following causes:
    a. Flammable gas, vapor, or mist in excess of 10 percent of its lower flammable limit (LFL};
    b. Airborne combustible dust at a concentration that meets or exceeds its LFL;

Note: This concentration may be approximated as a condition in which the combustible dust obscures vision at a distance of 5 feet (1.52 meters) or less.

c. Atmospheric oxygen concentration below 19.5 percent or above 23.5 percent;

d. Atmospheric concentration of any substance for which a dose or a permissible exposure limit is published in Subpart 0-0ccupational Health and Environmental Control, or in Subpart Z- Toxic and Hazardous Substances, of this part and which could result in employee exposure in excess of its dose or permissible exposure limit;

Note. An atmospheric concentration of any substance that is not capable of causing death, incapacitation, and impairment of ability to self-rescue, injury, or acute illness due to its health effects is not covered by this definition.

e. Any other atmospheric condition that is immediately dangerous to life or health.

Note. For air contaminants for which OSHA has not determined a dose or permissible exposure limit, other sources of information, such as Safety Data Sheets that comply with Strategic Construction Solutions Hazard Communication Policy HSA008, published information, and internal documents can provide guidance in establishing acceptable atmospheric conditions.

21. **Host Employer:** means the employer that owns or manages the property where the construction work is taking place.
22. **Hot work:** means operations capable of providing a source of ignition (for example, riveting, welding, cutting, burning, and heating).
23. **Immediately Dangerous to Life or Health (IDLH):** means any condition that would interfere with an individual's ability to escape unaided from a permit space and that poses a threat to life or that would cause irreversible adverse health effects.

Note. Strategic Construction Solutions will not perform IDLH work without written permission from Vice President of Strategic Construction Solutions, Director of Safety and senior officer Vice President or higher of Atwell, LLC the parent company to Strategic Construction Solutions.

24. **Inerting:** means displacing the atmosphere in a permit space by a noncombustible gas (such as nitrogen) to such an extent that the resulting atmosphere is noncombustible.

*Note. This procedure produces an **IDLH** oxygen-deficient atmosphere.*

25. **Isolate or isolation:** means the process by which employees in a confined space are completely protected against the release of energy and material into the space, and contact with a physical hazard, by such means as: blanking or blinding; misaligning or removing sections of lines, pipes, or ducts; a double block and bleed system; lockout or tagout of all sources of energy; blocking or disconnecting all mechanical linkages; or placement of barriers to eliminate the potential for employee contact with a physical hazard.
26. **Limited or restricted means for entry or exit:** means a condition that has a potential to impede an employee's movement into or out of a confined space. Such conditions include, but are not limited to, trip hazards, poor illumination, slippery floors, inclining surfaces and ladders
27. **Line breaking:** means the intentional opening of a pipe, line, or duct that is or has been carrying flammable, corrosive, or toxic material, an inert gas, or any fluid at a volume, pressure, or temperature capable of causing injury.

28. **Lockout**: means the placement of a lockout device on an energy isolating device, in accordance with an established procedure, ensuring that the energy isolating device and the equipment being controlled cannot be operated until the lockout device is removed.
29. **Lower flammable limit (LFL) or lower explosive limit (LEL):** means the minimum concentration of a substance in air needed for an ignition source to cause a flame or explosion.
30. **Monitor or monitoring:** means the process used to identify and evaluate the hazards after an authorized entrant enters the space. This is a process of checking for changes that is performed in a periodic or continuous manner after the completion of the initial testing or evaluation of that space.
31. **Non-entry rescue:** occurs when a rescue service, usually the attendant, retrieves employees in a permit space without entering the permit space.
32. **Non-permit confined space:** means a confined space that meets the definition of a confined space but does not meet the requirements for a permit-required confined space.
33. **Oxygen deficient atmosphere:** means an atmosphere containing less than 19.5 percent oxygen by volume.
34. **Oxygen enriched atmosphere:** means an atmosphere containing more than 23.5 percent oxygen by volume.
35. **Permit-required confined space (permit space):** means a confined space that has one or more of the following characteristics:
    a. Contains or has a potential to contain a hazardous atmosphere;
    b. Contains a material that has the potential for engulfing an entrant;
    c. 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
    d. Contains any other recognized serious safety or health hazard.
36. **Physical hazard:** means an existing or potential hazard that can cause death or serious physical damage. Examples include, but are not limited to: explosives, mechanical, electrical, hydraulic and pneumatic energy; radiation, temperature extremes; engulfment; noise; and inwardly converging surfaces. Physical hazard also includes chemicals that can cause death or serious physical damage through skin or eye contact (rather than through inhalation).
37. **Prohibited condition:** means any condition in a permit space that is not allowed by the written permit during the period when entry is authorized. A hazardous atmosphere is a prohibited condition unless it can be demonstrate that personal protective equipment (PPE) will provide effective protection for each employee in the permit space and provides the appropriate PPE to each employee.
38. **Qualified person:** 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 ability to solve or resolve problems relating to the subject matter, the work, or the project.
39. **Rescue:** means retrieving, and providing medical assistance to, one or more employees who are in a permit space.
40. **Rescue service:** means the personnel designated to rescue employees from permit spaces.

41. **Retrieval system:** means the equipment (including a retrieval line, chest or full body harness, wristlets or anklets, if appropriate, and a lifting device or anchor) used for non-entry rescue of persons from permit spaces.
42. **Serious physical damage:** means an impairment or illness in which a body part is made functionally useless or is substantially reduced in efficiency. Such impairment or illness may be permanent or temporary and includes, but is not limited to, loss of consciousness, disorientation, or other immediate and substantial reduction in mental efficiency. Injuries involving such impairment would usually require treatment by a physician or other licensed health-care professional.
43. **Tagout means:**
    a. Placement of a tagout device on a circuit or equipment that has been deenergized, in accordance with an established procedure, to indicate that the circuit or equipment being controlled may not be operated until the tagout device is removed; and
    b. The employer ensures that
        i. Tagout provides equivalent protection to lockout, or
        ii. That lockout is infeasible and the employer has relieved, disconnected, restrained and otherwise rendered safe stored (residual) energy.
44. **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.

    Note. Testing enables employers both to devise and implement adequate control measures for the protection of authorized entrants and to determine if acceptable entry conditions are present immediately prior to, and during, entry.
45. **Ventilate or ventilation** means controlling a hazardous atmosphere using continuous forced-air mechanical systems.

V. REQUIREMENTS

1. Before Strategic Construction Solutions employees begins work at a worksite, Project or Construction Manager must ensure that a competent person identifies all confined spaces in which one or more of the employees may work, and identifies each space that is a permit space, through consideration and evaluation of the elements of that space, including testing as necessary.
2. Each affected employee must be trained prior to initial assignment to work in a confined space.
3. If the workplace contains one or more permit spaces, the client and or Strategic Construction Solutions identifies and gives notice of, a permit space must:
    a. Inform exposed employees by posting danger signs or by any other equally effective means, of the existence and location of, and the danger posed by, each permit space; and

    Example of a sign reading "DANGER—PERMIT REQUIRED CONFINED SPACE, DO NOT ENTER" or equivalent.

b. Inform, in a timely manner and in a manner other than posting, all employees, authorized representatives and the controlling contractor of the existence and location of, and the danger posed by, each permit confined space.

4. For each permit required confined space that Strategic Construction Solutions is made aware of supervision will take steps to not allow employees to enter that permit required confined space. Strategic Construction Solutions must take effective measures to prevent those employees from entering that permit confined space.

5. If Strategic Construction Solutions decides that employees will enter a permit confined space, this policy will serve as a written permit space program. The written program must be made available prior to and during entry operations for inspection by employees and their authorized representatives.

VI. RESPONSIBLE PERSONS

1. A minimum of three (3) people in various roles are required to make a confined space entry. The following are the minimum number of people in the required roles.
    a. Authorized Entrant
    b. Attendant
    c. Entry Supervisor
2. **Entry Supervisor**
    a. General:
        i. The Entry Supervisor is responsible for both the thorough completion and safety of all aspects of confined space entry operations to which he/she is assigned. He/she has the authority to assign additional responsibilities, in addition to those specified by this program (termed “program” responsibilities). However, additional responsibilities may not interfere with the primary responsibilities outlined below, the authority to hold crew members accountable for their responsibilities, and the authority and responsibility to discontinue operations if any situation poses a threat to the safety of the operation or crew members.
    b. Responsibilities:
        i. Reviews, understands and knows the hazards faced during entry – including the chemical (i.e. SDS, mode, signs or symptoms and consequence of exposure to chemical substances, etc.) and physical hazards of the space.
        ii. Reviews the Entry Permit to verify the following:
            a. All appropriate entries are properly recorded on the permit/all appropriate tests have been conducted/all appropriate equipment

and procedures specified by the permit are in place before endorsing the permit and allowing entry to begin.

iii. Verifies that all information is accurate and appropriate before signing the permit.

iv. Terminates the entry and cancels the entry permit under the following conditions: operation is complete/entrants have left the space/the space is secured/a condition not specified or allowed by the permit arises in or near the permit space.

v. Verifies that written rescue procedures, as specified are available and that the means for summoning or enacting them are operable.

vi. Restricts, blocks or prevents (without creating a physical risk to him/herself) unauthorized individuals from entering or attempting to enter the permit space during entry operations.

vii. Assures that the entry operation remains consistent with the terms of the permit and that acceptable entry conditions are maintained when entry responsibilities are transferred.

viii. Assigns additional responsibilities (tasks).

ix. Conducts and documents on the permit items discussed during the Pre Entry Safety meeting.

x. Assures that the communication system is established.

xi. Assures all participants are familiar with emergency procedures and their assigned responsibilities.

xii. Assures that all entrants have had the opportunity to view the initial air monitoring being conducted on the space and discusses these results with the entrants.

xiii. Notifies Health & Safety of any unusual events, i.e. – site problems, accidents, injuries, exposures, near misses, changes in tasks, unauthorized entries or attempts, etc. that occur during the entry operation.

xiv. A minimum of three employees are present and properly trained. Two (2) of the three (3) employees must be Strategic Construction Solutions employees who remain outside the space during the entire entry.

c. Entry-by-Entry Supervisor:

i. The Entry Supervisor may enter the confined space to carry out responsibilities or otherwise supervise the work being performed. However, he/she is not permitted to perform other duties in the space such as those assigned to the Entrants. Additionally, if entry by the Entrant Supervisor would compromise the capability of the rescue team, the Entry Supervisor may not enter the space.

d. Conditions for Entry-by-Entry Supervisor:

i. The Confined Space Entry (CSE) Supervisor may enter a permit-required confined space to perform supervisory responsibilities under the following conditions. If these conditions are met, the CSE Supervisor can enter without relinquishing the CSE Supervisor role.

ii. Verifies that adequate rescue services are available and that the means for summoning them are operable.

iii. The attendant is instructed to summon rescue if the need arises

iv. Entry is conducted for supervisory duties only. A new permit need not be completed if the above comments are ensured. However, time in and out should be recorded on the permit.

v. If the Entry Supervisor is entering the space to perform work other than that of a supervisory nature, the Entry Supervisor must assure that another qualified Entry Supervisor is available to supervise the entry. In this case, a new permit is not required if the replacement supervisor is a qualified Entry Supervisor and his/her name and supervisory times are noted on the established permit. The original Entry Supervisor must be listed as an Entrant on the permit for the times in the space.

e. Assumption of Attendant Duties:

i. The Entry Supervisor may also assume the Attendant's responsibility in addition to the Entry Supervisor responsibility. This is permitted so long as the following is considered, ensured and can be accomplished.

ii. Only one Entrant is permitted in the space at any one point in time. Any deviation from this requirement must first be discussed and approved with Health & Safety.

iii. Rescue or other emergency services can be summoned without relinquishing the Entry Supervisor or Attendant's duties – i.e. leaving the space. This may be accomplished through an established and effective communication system, i.e. two-way radios, others.

iv. The Entry Supervisor will be able to remove the Entrant using non-entry rescue unless an adequate rescue team or outside rescue service is available, assigned and will be utilized.

v. The Entry Supervisor/Attendant will not enter the space to perform supervisory responsibilities unless relieved by an authorized Attendant.

3. **Attendant**

a. Primary responsibilities:

i. Reviews, understands and knows the hazards faced during entry, including the chemical – i.e. SDS, signs or symptoms and consequences of exposure to chemical substances, etc. - and physical hazards of the space.

ii. Is aware of possible behavioral effects of hazards exposure of entrants – see permit SDS.

iii. Continuously maintains an accurate count of Entrants in the permit space and ensures that the names listed on the Entry Permit accurately identify who is in the permit space.

iv. Communicates with authorized Entrants as necessary to monitor Entrant status and to alert Entrants of the need to evacuate the space.

v. Monitors 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:

a. If the Attendant detects a prohibited condition

b. If the Attendant detects the behavioral effects of hazard exposure in an authorized Entrant

c. If the Attendant detects a situation outside the space that could endanger the authorized Entrants

d. If the Attendant cannot effectively and safely perform all his/her duties

vi. Summons rescue and other emergency services as soon as he/she determines that authorized entrants may need assistance to escape from permit space hazards.

vii. Takes the following actions when unauthorized persons approach or enter a permit space while entry is under way:

a. Warns the unauthorized persons that they must stay away from the permit space

b. Advises the unauthorized persons that they must exit immediately, if they have entered the permit space

c. Informs the authorized Entrants and the Entry Supervisor without leaving the standby position, nor entering the permit space, if unauthorized persons have entered the permit space

viii. Performs non-entry rescues as specified by the written rescue plan and guidelines.

ix. Performs no other duties than monitoring and protecting the authorized Entrants.

x. Conducts (as appropriate without entry) and documents atmospheric monitoring as specified by the permit or additional monitoring as deemed necessary. Communicates these results to the entrants.

xi. Documents monitoring results and operational conditions on permits.

xii. Remains outside the space during entry operations until relieved by another qualified Attendant. “Qualified” means the relief Attendant is as knowledgeable in the responsibilities, hazards, conditions, etc. as the original Attendant.

b. Other Attendant Duties:

i. The following are examples of permitted and prohibited duties; others should be evaluated on a case-by-case basis.

ii. Permitted duties – passing tools and buckets to Entrants/pulling buckets while maintaining constant visual or verbal communication with the Entrant.

iii. Prohibited duties – directs traffic/walks to a vehicle to obtain a tool/load or unloads a drum if that action will affect the attendant’s primary duty of monitoring the status of the entrant(s).

iv. Regardless of the Attendant’s regular or additional responsibilities, the following conditions must be maintained:

a. The Attendant maintains constant communication with the Entrant(s).

b. The use of an automated LEL/Oxygen/Toxic meter is used to continuously monitor the confined space and immediately alerts the Attendant and Entrant that a problem exists.

c. The frequency of monitoring as noted above shall be based on the conditions of the space being monitored and any limitations of the air-monitoring instrument being utilized.

d. The Attendant does not break the plane of an opening into the confined space.

4. **Entrants**

a. Adhere to all instructions provided by the Entry Supervisor and Attendant.

b. Know the hazards that may be faced during entry including information on the signs or symptoms and consequences of the exposure to a physical or atmospheric hazard.

c. Properly use equipment

i. Testing and monitoring equipment specified by the permit, as appropriate for Entrant's use

ii. Ventilating equipment needed to obtain acceptable entry conditions

iii. Communications equipment, methods, systems, signals, etc.

iv. Required personal protective equipment

v. Lighting equipment needed to enable employees to see well enough to work safely and to exit the space quickly in an emergency.

vi. Barriers and shields

vii. Equipment, such as ladders, needed for safe entry and egress by authorized Entrants

viii. Rescue and emergency equipment needed to comply with the rescue plan and guideline, except to the extent that the equipment is provided by Rescue Services

ix. Any other equipment necessary for safe entry into and rescue from permit spaces

x. Visually observer initial air monitoring that is conducted on the space.

d. Alert the Attendant whenever:

i. The Entrant recognizes any warning sign or symptom of exposure to a dangerous situation

ii. The Entrant detects a prohibited condition

iii. Exit from the permit space as quickly as possible whenever:

iv. An order to evacuate is given by the Attendant or the Entry Supervisor

v. The Entrant recognizes any warning sign or symptom of exposure to a dangerous situation

vi. The Entrant detects a prohibited condition

vii. An evacuation alarm is activated

viii. The Entrant suspects a problem has developed or is likely to develop with their respiratory protection or other personal protective equipment

5. **Health & Safety**

   a. Health & Safety will review, approve, and distribute this Standard and all related Policies to all locations, sites and offices as applicable. Health & Safety will also coordinate revisions of all Standards and related Policies as required. Lastly, Health & Safety will directly support Policy and Standard implementation and report any exceptions and will provide support to all locations, sites and offices as necessary.

   b. Provides technical assistance to aid crews in identifying space characteristics and conduct site audits to ensure compliance with these guidelines.

   c. Conducts an annual review of these Entry Guidelines to assure that the guidelines continue to provide adequate protection for Entrants.

   d. Provides consultation on unusual, difficult or unique operations.

VII. PERMIT REQUIRED CONFINED SPACE

1. Permit Required Confined Space--A space that meets all the requirements of a Confined Space and has one or more of the following characteristics:

   a. Contains or has the potential to contain a hazardous atmosphere.

   b. Contains a material, liquid or finely divided (flowing) solid that has the potential for engulfing an entrant.

   c. Has an internal shape (sloping floors) or configuration (converging walls) that could cause an employee to lose their footing and/or be trapped, causing injury.

   d. Contains any other recognized serious safety, health, mechanical and/or electrical hazard.

   e. Work being performed in the space is considered hazardous or may introduce a hazardous material into the space (painting, using solvents, and cutting through a tank floor).

   NOTE: *All Confined Spaces are considered Permit Required Confined Spaces until certified otherwise. If visible product and/or vapors become present in a previously certified Non-Permit Confined Space it then becomes a Permit Required Confined Space.*

VIII. NON-PERMIT CONFINED SPACE

1. Non-permit confined space means a confined space that does not contain, or have the potential to contain, any hazard capable of causing serious harm. Project management may identify these spaces and others as a permit required confined space. In these instances, Strategic Construction Solutions will follow permit rules for the confined space.

2. Strategic Construction Solutions employees can enter a Non-permit confined space, provided that all of the following conditions are met:

   a. It can be demonstrate that all physical hazards in the space are eliminated or isolated through engineering controls so that the only hazard posed by the permit space is an actual or potential hazardous atmosphere;

b. It can be demonstrate that continuous forced air ventilation alone is sufficient to maintain that permit space safe for entry, and that, in the event the ventilation system stops working, entrants can exit the space safely;

c. Strategic Construction Solutions has develops monitoring and inspection data that supports the change in classification.

d. If an initial entry of the permit space is necessary to obtain the data required the entry is performed in compliance with permit required Confined Space Entry.

e. The determinations and supporting data are documented and are made available to each employee who enters the permit space or to that employee's authorized representative.

f. Entry into the permit space under the terms of the non-permit required confined space is performed in accordance with the stated requirements.

IX. PRE-ENTRY SAFETY MEETING

1. Frequency
    a. A Pre-Entry Safety meeting shall be conducted once the space has been characterized
        i. Prior to the start of any activity
        ii. Whenever new tasks are initiated, i.e. entering the next boiler in a series
        iii. For newly assigned Entrants, Attendants, etc.
        iv. A minimum of once per shift, prior to the start of each operation
2. Content
    a. The following information must be discussed. atmospheric, chemical and physical hazards of the space and surrounding area, rescue procedures, the task to be completed, Safety Data Sheets, work assignments and responsibility of each function, i.e. Entrant, Attendant & Supervisor.
3. Documentation
    a. When performing work for client's who use and issue Confined Space permits as part of their permitting system the Strategic Construction Solutions permit must be utilized also.
    b. Review the Confined space rescue plan and each crew member's role in it. (Attachment 2)
    c. The Entry Supervisor (or his/her designee) must document the following information on the Strategic Construction Solutions Confined Space Permit: information discussed those in attendance, any questions posed by the crew and scope of work assignments.
    d. Signature: Each crew member must sign the permit once they are satisfied they understand all operational and safety aspects of the assigned work.
    e. Withholding Signature: Any crew member who has not had his/her questions answered to their satisfaction, does not thoroughly understand their responsibilities, or is unsure of methods to safely perform the operation may withhold their signature until their questions are answered and the information is provided. No entrant will be compelled to enter a confined space until they understand and agree to the information.

f. Agreement: An entrant's signature is his/her indication that they understand the hazards, agree to their responsibilities and have had all questions answered to their satisfaction. No entrant shall be compelled to sign his/her name, but should do so only after receiving adequate explanation of applicable information.

X. PRE-ENTRY PROCEDURES

1. General Pre-Entry Procedures

    a. Authority to enter the Permit Required Confined Space is initiated with the Client and Strategic Construction Solutions Project Manager. Actual entry into a Permit Required Confined Space shall not be permitted until the Entry Supervisor and Client are satisfied that all Pre-Entry criteria have been met, the appropriate personal protective equipment is available, and safety procedures and job duties for the particular Permit Required Confined Space have been reviewed with all authorized Entrants and Attendants. When these items have been completed, the Entry Supervisor shall sign the Confined Space Entry Permit (Form A) to authorize entry.

    b. Individuals must be trained in Permit Required Confined Space entry procedures before being allowed to enter and work in a Confined Space as an Entrant or at the entrance of the Confined Space as an Attendant.

    c. Prior to entering any Permit Required Confined Space, the Majority of the Confined Space Entry Permit must be completed. The required procedures shall be completed, and any air quality readings must be taken as required to the satisfaction of the Entry Supervisor before entry authorization is granted.

    d. The telephone number or communication protocol for reaching the designated rescue team shall be recorded on the Entry Permit. On-site rescue teams shall be notified of the planned entry.

2. Atmosphere Quality Testing and Monitoring

    a. When the Confined Space is isolated, clean and vapor-free, a trained individual shall test the air quality and record the results on the Confined Space Permit. Tests shall be performed for the particular air quality hazard in the following order:

        i. Oxygen first

        ii. Flammable vapors second

        iii. Toxic concentrations third

    b. Where possible, air samples shall be taken from outside the Confined Space if the samples are representative of air throughout the space. The following conditions shall be met for acceptable work environments:

        i. Oxygen Deficiency: The atmosphere in the Confined Space shall be continuously tested for oxygen. Oxygen concentrations must be greater than 19.5% before any employee shall be permitted to enter. If the oxygen content is deficient (less than 19.5%), the Entry cannot take place until the oxygen content is brought back above 19.5%.

        ii. Oxygen Enriched: No employee shall be allowed to enter or remain in an oxygen enriched atmosphere. This occurs when the level of oxygen in the air reaches 23.5%. If this occurs, the abnormal oxygen source must be determined and eliminated.

iii. Flammable Materials: The atmosphere of the Confined Space shall be continuously tested for flammable vapors with a combustible gas indicator or other instrument designed for this purpose. If evidence of flammable vapors is found in the Confined Space, the source shall be determined and controlled or eliminated. If vapor concentrations exceed 10% LEL, the space must be ventilated.

iv. Toxic Materials: Based upon the contents of the Confined Space, tests shall be taken to assure that potentially toxic materials have been removed or that the concentration is below any IDLH exposure limits for that material. Refer to the SDS for the IDLH limits and threshold limit values (TLV) or permissible exposure limits (PEL). The personal protective equipment required to protect against exposure must be used if toxic concentrations are above TLV/PEL limits. The two toxic materials that will always be monitored for are Hydrogen sulfide(H2S), Carbon Monoxide(CO)and SO2

a. **Hydrogen sulfide (H2S)** is a highly toxic gas that can be deadly at low concentrations. Entry will not allow when more than 10 PPM of H2S is present.

b. **Carbon Monoxide (CO)** is an aspirant hazard in a confined space it will replace the oxygen in the space. Entry will not be allowed if the concentration of CO is above 35 PPM.

c. **Sulfur dioxide (SO2)** is a highly toxic gas which poisons its victims via inhalation through the lungs. SO2 combines with water to form sulfuric acid (H2SO4). It is for this reason sulfur dioxide can burn the respiratory tract upon inhalation. High doses of sulfur dioxide can cause death quite rapidly. Entry will not be allowed if the concentration of SO2 is above 2 PPM.

MONITORING SUBSTANCE	ENTRY LIMITS
Oxygen (O2)	Between 19.5% - 23.5%
Lower Explosive limit (LEL)	10% of LEL
Carbon Monoxide (CO)	35 PPM
Hydrogen sulfide (H2S)	10 PPM
Sulfur dioxide (SO2)	2 PPM

v. Airborne dust must not limit visibility to less than five (5) feet.

3. The following are to be performed as needed:

a. Barricading: The work area around the Confined Space should be isolated with barricades and barrier tape to deter unauthorized entrance. Barricades must be placed at the opening to the Confined Space when a ground level vertical entry is being performed.

b. Draining: before entering the interior of any Confined Space, the contents shall be drained. All available hatches, manholes or clean-out doors shall be opened.

c. Blanking: Isolate the Confined Space from other equipment. Insert slip blanks in all connecting pipes at the flanges closest to the Confined Space or disconnect the piping and install solid blinds on the open ends. A blank or blind must be of the proper thickness to withstand the full line pressure for that section of piping. When blanks

cannot be installed at the closest flange due to inaccessibility, the line must be blanked or separated at the nearest available flange. Make provisions for gas testing this or any dead leg which must be considered part of the Confined Space.

d. Lockout/Tagout: Any source of power (electrical, mechanical hydraulic, or pneumatic) that provides energy directly to unguarded equipment in the Confined Space or controls auxiliary functions to that equipment must be isolated and tagged so the equipment or other functions cannot be inadvertently activated. Follow Strategic Construction Solutions lockout/tagout procedures.

e. Cleaning: Confined Spaces that have contained flammable, combustible or toxic materials shall be cleaned by flushing or steaming. If cleaning can be accomplished from outside the Confined Space, no special precautions are required. If cleaning cannot be accomplished without entering the Confined Space, special permissions and procedures must be developed before entering to clean.

f. Ventilation: The Confined Space should be purged of vapors by natural or forced ventilation prior to entry and during entry. Oxygen shall never be used for ventilation. Side-to-side ventilation is recommended, when feasible.

g. After the safety procedures have been completed, the Entry Supervisor shall sign the Entry Permit authorizing actual entry into the space. The Entrant and Attendant must check all their personal protective and operational equipment, review operational and safety procedures, test communication devices and make sure all signals are clearly understood. The Attendant shall record his/her name on the permit and retain the permit for the length of the entry. The Attendant must also record air Monitoring readings, Entrant's names and make the permit available for review by each Entrant.

XI. PERMIT ENTRY INTO CONFINED SPACES HAVING ACCEPTABLE WORK ENVIRONMENTS

1. An adequate, continuous supply of air from a clean source shall be provided while working in confined spaces. Forced ventilation shall be provided where flammable vapors have been initially detected and subsequently reduced to a safe level; where hot work is performed in the Confined Space; where seepage of gases or liquids into the confined space is possible; or where oxidation may cause an oxygen deficiency. Forced ventilation equipment may not block the only means of egress or escape from the Confined Space.
2. The Entrant(s) shall enter the Confined Space only after they are sure that all the required safety equipment and procedures are in place. The Entrant shall enter the Confined Space to perform the maintenance or operating procedure wearing the required personal protective equipment, as determined by air quality tests and the product's SDS. The Entrant will take the air monitoring device or its hose line to continuously monitor the air. The Attendant shall record the readings hourly on the Confined Space Entry Permit.
3. Entry in to Confined spaces:
    a. For vertical entries a retrieval line must be attached to each Entrant's full body harness and if the vertical lift to exit the space is greater than five (5) feet, lifting equipment must be immediately available.
    b. For horizontal entries involving more than one Entrant, retrieval lines are not required to be attached to Entrants' harnesses. However, retrieval lines must be available at the entrance of the space. If, in the judgment of the Entry Supervisor, the configuration of

the space will make a retrieval line ineffective in assisting rescue of a single Entrant from the space it may be omitted.

4. An Attendant is required at all times when work is being performed in a Permit Required Confined Space. The Attendant remains just outside the entrance of the Confined Space to carry out the responsibilities of the attendant.

ALERT NOTICE
At no time shall an Attendant enter a space to perform a rescue function (even though trained in rescue techniques)

5. The Entry Supervisor shall terminate the entry and cancel the Entry Permit when:
    a. The work or operation indicated on the Entry Permit is completed.
    b. An unknown hazard occurs or air readings exceed the conditions for acceptable working environments.
6. Special Precautions for Welding and Cutting in a Permit Required Confined Space.
    a. Employees exposed to welding or cutting shall be aware of and protect against the toxic effects of materials which are coated or plated.
    b. Air purifying respirators equipped with a HEPA dust, fume, mist (magenta) or other appropriate cartridges per SDS shall be worn by all Entrants in the Confined Space during welding operations. Respirators shall continue to be worn inside the Confined Space after completion of cutting or welding until the space has sufficiently ventilated to dissipate the welding fumes.
    c. Fuel-gas and oxygen cylinders shall not be taken inside the Confined Space.
    d. Oxygen shall never be used for ventilation.
    e. When arc welding has been suspended for any substantial period of time, such as during lunch or overnight, remove all electrodes from the holders and shut the welding machine down.
    f. When gas welding or cutting has been suspended for a substantial period of time (overnight), remove the torch and hoses from their supply bottles.

XII. PERMIT SYSTEM

1. Completion
    a. A Strategic Construction Solutions entry permit must be thoroughly prepared by the Entry Supervisor prior to the entry. All items must be reviewed, evaluated, performed, etc. before the Entry Supervisor signs the permit, indicating all information is complete and accurate.
2. Availability/Posting
    a. The completed permit and space conditions must be discussed with the Entrants and Attendant during the pre-entry safety meeting. At that time, the Entrants and Attendant will be given an opportunity to review and confirm that pre-entry preparations have been completed. Each participant will be asked to sign the permit. The permit shall also be posted.

3. Permit Duration
    a. The permit is valid for one shift or the time period required to complete the assignment or job identified on the permit (entry purpose), if that is less than one shift. If the job exceeds the expiration date and time, a new permit must be issued.
4. Canceling the Permit
    a. The Entry Supervisor must terminate the entry and cancel the permit under the following conditions:
        i. Entry operations covered by the permit have been completed and all entrants have exited the space.
        ii. Conditions not allowed by the permit arise in or near the space.
        iii. Site Problems – Any problems encountered during an entry shall be noted on the permit and must be communicated to Health & Safety by the Entry Supervisor as soon as possible, but no later than at the conclusion of the entry.
5. Information Recording
    a. The Attendant is responsible for ensuring that the following information is recorded on the permit: monitoring results, entrant's time in and out, and other pertinent information contained on the permit.
6. Retention
    a. Retention Period – Canceled permit must be retained for one year to facilitate review of the confined space entry program.
    b. Copies – copies of all permits should be kept in one central file that is accessible for review. The files shall be maintained at each field service location and facility.

XIII. ENTRY GUIDELINES

1. The following guidelines are provided to help identify, evaluate and control the hazards typically encountered in confined spaces. Because each space is unique and presents obvious and less than obvious hazards, it is vital that each action be taken to identify and minimize the risk during entry.
2. **Limiting Unauthorized Entry**
    a. Signs:
        i. All warning signs shall be printed both in English and in the predominant language of non-English reading employees. Employees unable to read labels and posted signs shall be informed of the instructions printed on the signs.
        ii. A sign warning of the confined space must be posted at the entrance to each confined space while Strategic Construction Solutions is onsite performing an entry. An example of acceptable wording includes the following: *Contact Health & Safety for appropriate signage*

b. Posting:

   i. The sign should be posted in a conspicuous location such that it can be readily seen by any individual who happens upon a space's access. It should not be placed on the cover (access way) to a space.

c. Access Protection:

   i. To further limit access of unauthorized Entrants to a confined space where Strategic Construction Solutions is working, but the access location is not being used for entry, the following methods should be used. Other methods may also achieve this objective.

   ii. Station a worker at each entry/access point to inform unauthorized Entrants of the space and the prohibition against entering.

   iii. Close off each entry point by reattaching the access cover, if unattended.

   iv. Attach (bolt) a secure barrier (expanded metal wire, etc.) to each access point that is unattended.

   v. Ensure the material is sufficiently strong to prevent easy break-through – i.e. chicken wire is inappropriate for floor level openings. However, expanded metal wire may provide adequate stability and strength. Also, be sure this action does not create additional hazards – i.e. trip hazard, puncture wound, etc.

   vi. Place or ensure that a manhole gate is placed around any manhole entrance.

   vii. Position a vehicle to block another vehicle from entering the space. Exhaust gases may enter the confined space creating a potentially toxic environment. Therefore, either vent exhaust gases away from the space or keep the engine off. Also, when using this barrier during entries involving flammable materials, the ignition must be left in the OFF position at all times. The Entry Supervisor should install a tag on the steering wheel indicating the vehicle must remain off or lockout the vehicle. Log on the permit, that the keys have been removed.

   viii. The atmosphere around the entire vehicle must be evaluated to assure flammable vapors (greater than 10% of the LEL) do not accumulate before starting the vehicle.

d. Host Employer/Another Employer:

   i. If employees other than Strategic Construction Solutions personnel are performing work on or near the space being entered and that work will affect the Strategic Construction Solutions entry team, then the entry supervisor needs to ensure the following is followed: meet with and apprise the client contact of the host employer or other contractors working on the site, etc. that Strategic Construction Solutions will be working in the space (identify the space) and ask that they inform their employees to not enter the space, nor perform

any work around the space that may jeopardize the safety of the Entrants or permit, under the section "Supervisor's Comments."

e. Reporting Unauthorized Entry or Attempts to Enter:

i. Any unauthorized entry or attempted entry must be reported to the Entry Supervisor immediately. The Entry Supervisor is responsible for removing unauthorized individuals who enter or who attempt to enter the space during entry operations. However, attempts should be made to deter the unauthorized person from entering the space. This should be done verbally. Bodily force should not be used.

3. **No Entry**

a. When planning a confined space entry, one option to consider is NO ENTRY. This option may be viable with a little adaptation to the operation and should be considered before a decision to enter is made. Contact Health & Safety for assistance when considering this option.

4. **Isolation**

a. Prior to entry, the space must be removed from service and protected against the release of energy sources or introduction of material into the space. Sources include: product lines, mechanical, electrical, hydraulic, pneumatic, etc. Contact Health & Safety before entering if the space cannot be isolated i.e., sewers, manholes, etc. Additional precautions will be required.

b. Energy Isolation & Lockout/Tagout Procedures - Confined Space Entry:

i. Energy isolation and lockout/tagout procedures shall be specific for each type of permit-required confined space.

ii. The confined space shall be completely isolated from all other systems by physical disconnection or blanking off all lines or double block and bleed as a minimum.

iii. Lockout/tagout or any closure of lines, ducts or pipes shall be confirmed by the entry supervisor.

iv. All blanks to be used on feed lines, drain lines, etc. shall be recorded on the entry permit.

v. Any energy isolation is required, circuit breakers and/or disconnects will be locked in the “off” position with a key-type padlock. The only key is to remain with the person working inside the confined space. If more than one person is inside the confined space, each person shall place his/her own lock on the circuit breaker. In addition to the lockout system, there must be an accompanying tag that identifies the operation and prohibits use.

vi. If electrical isolation is required, circuit breakers and/or disconnects will be locked in the “off” position with a key-type padlock. The only key is to remain with the person working inside the confined space. If more than one person is inside the confined space, each person shall place his/her own lock on the circuit breaker. In addition to the lockout system, there must be an accompanying tag that identifies the operation and prohibits use.

vii. Lockout and tagout will be completed before entry when moving parts, drive belts or chains present a hazard.

viii. Any forms of stored energy (i.e. hydraulic, pneumatic) must be isolated or released procedures and processes used to clean the inside of a confined space shall be reviewed and authorized by the Entry Supervisor.

ix. Documentation of isolation points will be completed in accordance with Strategic Construction Solutions Lockout/Tagout guidelines.

5. **Hazard Mitigation**

a. Methods to mitigate confined space hazards must be instituted prior to entry. Available methods include, but are not limited to:

i. Purging – introducing a gas (inert or air) to flush the atmosphere of oxygen deficient or toxic gases, vapor, dust, mists, fumes, etc.

ii. Inerting – purging the confined space with an inert gas like nitrogen to eliminate the oxygen to prevent pyrophoric material from coming in contact with oxygen.

iii. Flushing – introducing a liquid to the tank with the objective of mobilizing and removing product contained in the space.

iv. Mechanical venting – the process of reducing the hazardous atmosphere from the space by introducing or removing air from the space utilizing a unit solely designed for the purpose of moving air.

a. Exhaust Venting: exhausting air from the space removes the hazardous atmosphere and dilutes the remaining atmosphere with clean air. If properly arranged, exhaust venting has several advantages over Forced Air Ventilation. These include, removing hazardous atmospheres close to the source, introducing uncontaminated (outside) air or diluted air in the breathing zone of the workers, and greater ability to control vapor exhausts

b. Forced Air Ventilation: air should not be blown into a space that contains flammable or toxic atmospheres. Blowing air into a space will agitate and evaporate the contaminants and disperse them throughout the space. Blowing air into a space will also result in an uncontrolled expulsion of the hazardous atmospheres from the space through any openings in the space. This may result in contamination of adjacent spaces and areas. Clean air may be blown into a space only when no flammable or toxic materials are present or being generated by the work process and only when ventilation is required merely to provide clean, breathable air for breathing and general comfort. In the event that special circumstances require air to be blown into a tank containing flammable materials, this option must first be discussed and approved with Health & Safety prior to being implemented

c. Natural Ventilation: this is not acceptable ventilating techniques as an effective method to control atmospheric hazards:

v. Lockout/Tagout – refer to Strategic Construction Solutions HSB016 Control of Hazardous Energy

i. Lockout Tagout Policy.

ii. Hot work – refer to Strategic Construction Solutions HSC025 Hot Work Policy.

2. **Acceptable Entry Conditions (AEC)**

a. Prior to entering the confined space, the Entry Supervisor must determine and assure that acceptable entry conditions exist. The following are the conditions that must be met:

   i. Hazard Assessment – the hazards of space have been assessed using information provided by the client and information developed using Section II of the CSE Permit. Additional hazards should be noted at this time. The Entry Supervisor must verify the accuracy of the hazard assessment by conducting a survey of the area (entry should not be performed to verify hazards). If additional hazards are identified, note these are in the Hazard Assessment section of the permit, identify appropriate control measures and discuss all pertinent information with the crew.

   ii. Permit – acceptable entry conditions as specified by the permit must be complete, accurate, discussed with the crew, signed by all appropriate personnel, and the permit shall be posted.

   iii. Hazard Control – hazards identified prior to entry must be controlled, discussed, explained, etc. before initiating entry. This includes methods to control atmospheric, physical, etc. hazards identified.

   iv. Atmospheric Evaluation.

      a. Atmospheric Concentrations: ventilation must be used to maintain acceptable concentrations. Other methods listed under Hazard Mitigation, may be used to produce acceptable atmospheric conditions. However, it may not maintain the atmosphere at an acceptable level. If ventilation is not sufficient for producing and maintaining acceptable concentrations of toxic materials, ventilation shall none-the-less be used and must be supplemented with respiratory protection.

MONITORING SUBSTANCE	ENTRY LIMITS
Oxygen (O2)	Between 19.5% - 23.5%
Lower Explosive limit (LEL)	10% of LEL
Carbon Monoxide (CO)	35 PPM
Hydrogen sulfide (H2S)	10 PPM
Sulfur dioxide (SO2)	PPM

      b. “Prohibited” conditions: if a prohibited condition is identified, hazard mitigation techniques must be used to reduce the hazards before entry may be considered. Prohibited conditions include concentrations beyond the range. Prohibited conditions also include when all toxic materials cannot be measured, the entire space cannot be characterized from outside, “unknown” conditions exist and permit conditions are not met.

   v. Restricted entry conditions: a confined space SHALL NOT be entered where any of the following conditions exist:

      a. LEL is greater than 10%

      b. Oxygen concentration is less than 19.5% or exceeds 22%

c. The IDLH is exceeded. Contact Health & Safety for onsite support and if an oxygen deficient environment less than 16% oxygen is encountered.

vi. Alternative control method/PPE: operations performed in the confined space may not enable Strategic Construction Solutions to thoroughly control toxic or oxygen-deficient atmospheres. In those instances where hazard mitigation have been used and (IDLH may not be exceeded), they must none-the-less be used and respiratory protection must be used to supplement the hazard control strategy. This strategy is not applicable when RESTRICTED ENTRY CONDITIONS exist. Other forms of PPE must also be used as appropriate.

vii. Physical hazards – physical hazards of the space have been identified (see Section 8) and controlled (see Section 9.4) are required to prevent employee exposure.

viii. Isolation – the space has been isolated from hazardous sources as identified above.

3. **Verifying Acceptable Entry Conditions**

a. Prior to and throughout the entry, the crew must be vigilant in assuring that Acceptable Entry Conditions (AEC) exists. If, at any time during the entry, AEC is not maintained in the space, the entry must be terminated, immediately. Verification that acceptable conditions continue may be accomplished through the following means:

i. Atmospheric exposure monitoring - atmospheric monitoring conducted by the Attendant (Standby) and/or Entrants is maintained within Acceptable Concentrations as indicated in Section 9 and recorded on the permit.

ii. Communication – changes that occur during the entry that might create unacceptable (not meeting conditions specified by the permit), prohibited or restricted entry conditions or may invalidate the permit, must be communicated IMMEDIATELY to the Attendant (Standby), other Entrants and Entry Supervisor.

iii. Continuing Hazard Observations – as work progresses, additional hazards may develop. The CSE Supervisor needs to be notified of any changing conditions that might affect entry conditions. The Entrants and Attendant must be constantly aware of developing or changing conditions, how these may affect existing entry conditions, and their ability to produce new or unforeseen hazards. If observations of the Entrants, Attendant or Entry Supervisor indicate changes to existing hazards or exposure to a new hazard, the Entry Supervisor must evacuate the space, update the permit, notify all crew members of the changes, and reinitiate entry. The new hazard must also be controlled utilizing hazard mitigation methods or another effective means to control the hazard.

IX. ATMOSPHERIC EXPOSURE MONITORING

1. Atmospheric monitoring of the space must be conducted to determine if acceptable Entry Conditions exist before entry begins.

a. Materials – the following must be evaluated in the order listed:

b.

ORDER OF EVALUATION	MATERIAL
1st	Oxygen
2nd	Combustible gases and vapors
3rd	Toxic gases and vapors

c. Monitoring Frequency:

   i. Monitoring must be conducted prior to, throughout the entry, and/or re-entry, and whenever monitoring is interrupted as would happen during breaks. Continuous monitoring should be conducted for each material.

   ii. Continuous monitoring is defined as the minimum response time of the test instrument as specified by the manufacturer.

   iii. Testing must continue throughout the entry to assure Acceptable Entry Conditions are maintained during the course of entry operations.

d. Recording – all monitoring results (including oxygen, combustible gases and vapor, and toxic gases and vapors) must be documented. Space is provided on the permit for this purpose. Recording of results is important both to, the document that testing is being performed on and even more so, to enable the Attendant to spot trends in entry conditions. Results must be recorded at least every 30 minutes when periodic testing is appropriate and at least every 15 minutes, if continuous testing is warranted. (Additional monitoring and documentation may be necessary if tasks or conditions change).

e. Monitoring location during venting – It is critical to avoid monitoring outside air, while venting is being used. Outside air monitoring occurs when samples are obtained from access ways that are under negative air flow due to the presence of Exhaust Venting. To avoid this, samples should be obtained from areas outside the stream of air flowing into the access way, or where outside air has co-mingled with the confined space atmosphere and dilution has occurred. This will occur at locations removed from the immediate vicinity of the access way. Additional remote areas of the space will provide representative monitoring of the confined space atmosphere (i.e. toxic and outside air combined).

2. **Attendant Duties**

   a. The Attendant must remain outside the space performing the duties specified in Section 3 for the duration of the entry. This person may have no other duties that would interfere with his/her primary responsibilities as specified in Section 3. The Attendant may attend to multiple spaces at once provided that the attendant is able to effectively monitor the status of the entrants in those spaces. If the attendant is going to monitor multiple spaces simultaneously Health & Safety must approve this first.

3. **Multiple Employer Entries**

   a. To avoid endangering either Strategic Construction Solutions or other employers' employees (client, trades, other contractors, etc.) from exposure to hazards created by the space, operation, etc., entry operations must be coordinated.

b. So far as possible, simultaneous (SIMOPS) entries must be avoided. If this is unavoidable, procedures must be developed to assure that Strategic Construction Solutions employees do not endanger the employees of another employer and vice versa.

c. In the case SIMOPS is necessary onsite, contact Health & Safety to develop and specify procedures to coordinate activities and minimize hazards.

4. **Additional Requirements**

a. Personal Protective Equipment: see Strategic Construction Solutions HSC010 Personal Protective Equipment Policy for use and selection.

b. Lighting:

i. All work areas shall be adequately lighted for the work being performed.

ii. Portable lighting fed by 110 volt supply must be equipped with either; a low voltage isolation transformer or protected with a ground fault circuit interrupter (GFCI).

c. CPR/Basic First Aid: a minimum of two people working on each Confined Space Entry must maintain current (within one year) valid CPR/Basic First Aid Training. One of the CPR/Basic First Aid trained individuals must remain outside the space at all times.

d. Fire Extinguisher: a minimum of two (2) fire extinguishers is required for each space where flammable or combustible materials are encountered.

e. Eye Wash/Flushing Equipment: whenever acid or caustic material are handled, a means for flushing the eyes, face or body must be available. The device must be capable of delivering sufficient flushing capabilities to continue flushing until first aid services can be obtained. Typically, a minimum of 15 minutes if needed. Flushing equipment can include: eye wash, safety shower or water hose (low pressure garden type hose). The flushing equipment need not be owned by Strategic Construction Solutions so long as it is; functional (provides adequate flushing capabilities), readily accessible (within 10 feet of the portal), pH is neutral and available for use.

f. Electronic Communication Devices –

i. Various electronic communication devices are available and may be needed for a particular entry. Each device should be evaluated in the specific work environment to ensure it will provide effective communication.

ii. Communication equipment used in a flammable or combustible environment must be intrinsically safe and possess the following classification: Class 1/Division 1.

X. EMERGENCY PLANNING & RESPONSE

1. **Introduction**

a. Two rescue services are available to retrieval of Entrants from a confined space in an emergency. They are: Outside Rescue Services & Strategic Construction Solutions Rescue Service.

2. **Outside Rescue Service**

a. Introduction: Outside rescue services may be a Fire department or a client (customer) provided service. If the site Entry Supervisor wishes to utilize the client's Rescue Service

or outside service, he/she must consult with the service to determine their capability, availability and applicability to perform the service. This must be done in preparation (bid stage) of a confined space entry.

b. Required Action: Outside Rescue Services must be contacted and notified during the preparation phase (bid stage) of a confined space entry (see below). Health & Safety must also be involved in the evaluation and determination of the proficiency of any outside rescue service. If outside services will be used for emergency rescue services, they must be contacted and the following information must be determined. If any outside rescue service is used, the following must be done:

    i. Inform the outside service of the hazards

    ii. Provide the outside service with access to each space where rescue may be necessary, so they may develop appropriate rescue plans and practice rescue operations

    iii. Provide SDSs (previously called MSDS) and other toxic hazard information

    iv. Contact the outside services to determine if they can respond to a confined space entry emergency, and if the service is proficient with CSE Rescue Techniques and the utilization of CSE Rescue Equipment

    v. If they are available and are willing to render assistance if the need develops, determine the response time

    vi. It is preferable to have the outside Rescue Service available throughout the entry. Services may be available and willing to do this for a fee

c. Outside Service Planning: During entry planning, where outside emergency services will be utilized, they must be contacted and provided with hazard information and other information to enable proper planning of their response. The following information must be provided:

    i. Space hazards – description of space (CSE Permit Section I), Hazard Assessment Guide (CSE Permit Section II), other hazard info as available

    ii. Access to the Space – so that the service can develop appropriate plans and practice rescue operations

    iii. SDS/Toxic Hazard Info

3. **Strategic Construction Solutions Rescue Service**

    a. If the Entry Supervisor elects to utilize Strategic Construction Solutions rescue service, he/she must ensure the following:

        i. A sufficient number of trained rescue personnel are available to conduct a rescue.

        ii. The rescue team is provided with and trained to properly use the personal protective equipment (PPE) and rescue equipment necessary for making rescues.

        iii. The rescue team is trained to perform their assigned duties and to the Entrant level.

        iv. The rescue team receives practical training once every 12 months by means of simulated rescue operations.

v. The rescue team possesses current basis first-aid and cardiopulmonary resuscitation (CPR).

4. **Non-Entry Rescue**

a. This option should be used whenever possible.

i. Non-entry rescue involves removal of an Entrant from outside the space, without entry, using the retrieval system outlined below. This method prevents exposure of rescues from the hazards, which created the emergency. However, under certain circumstances, non-entry rescue may be inappropriate, i.e. physical injury such as a broken bone. Here, movement may exacerbate the injury; immediate removal may not be required to minimize the impact, etc.

ii. To facilitate non-entry rescue, retrieval systems or methods shall be used unless, in the concurrent opinion of Health & Safety and the Entry Supervisor, the retrieval equipment would increase the overall risk of entry or would not contribute to the rescue of the Entrant. Examples where the mechanical retrieval may increase the overall risk of entry include:

a. Obstructions or turns that prevent pull on the retrieval line from being transmitted to the Entrant may not contribute to a rescue

b. A permit space from which an employee being rescued with the retrieval system would be injured because of forceful contact with projections in the space may not contribute to a rescue

b. Retrieval System Equipment: full-body harness/lifeline, and Retrieval Device

i. Harness/Lifeline: Each Entrant must use a harness (chest or full-body) with a retrieval line attached. The other end of the retrieval line must be attached to a mechanical retrieval device (availability required for vertical entries 5 feet or greater) or fixed point in such a manner that rescue can begin as soon as the rescuer (Attendant) becomes aware that rescue is necessary.

ii. Mechanical Retrieval Device: A mechanical retrieval must be available on all vertical spaces more than five feet deep.

5. **Entry Rescue**

a. Introduction: In the event that the Entry Supervisor has determined that entry rescue will be utilized, hazards identified in permit must be assured to be the same.

i. Stretcher Rescue: Certain types of horizontal entries present unique circumstances, which may inhibit the effective utilization of a full-body harness to facilitate rescue. In these circumstances, the use of a stretcher for entry rescue in lieu of, or in addition to, a harness may be used provided the following conditions are met:

a. The space access and egress is sufficient to accommodate the stretcher

b. There is a minimum of five employees dedicated to the entry.

c. The stretcher's construction is compatible with the materials in the space

d. A towline equal to, or greater than, 1.5 times the diameter of the space is available outside the space. This line may be used to assist

rescuers with removal of personnel. The line material(s) must be compatible with the material(s) in the space

e. This option has been reviewed and approved by H&S during the bid stage of the project

ii. Contingency Planning: Consideration must be given, and contingencies developed, to provide a secondary means of rescue should the effectiveness of a stretcher be compromised. These contingencies must be developed, documented on the permit, and discussed with all members of the crew prior to beginning the entry.

iii. Rescue Consideration: Please refer to and review information described in Appendix 5 for direction on the techniques for performing entry rescue.

XI. COMMUNICATION

1. **Effective Communication**

   a. An effective means of communication is essential for limiting hazards, initiating methods to mitigate emergencies and assuring information is communicated promptly. Communications must be maintained at all times between Entrants and Attendant. This may be accomplished by one or a combination of the following methods:

      i. Visual contact between Entrants and Attendants

      ii. Vocal contact between Entrants and Attendants

      iii. Electronically assisted vocal contact between Entrants and Attendants

      iv. Signal system, i.e. periodic tap, line jerks, etc.

2. **Signaling or Vocal Content**

   a. If signaling or vocal contact is used, the system established must assure that the Entrants and Attendant can see and understand the voice commands or signals.

3. **Signaling System**

   a. A clearly understandable signal system should be established before entry into the confined space. In the event of failure of the above means of communication, an alternative signal system such as using line-jerk signals in the following manner:

      i. One pull – allow more slack in the line

      ii. Two pulls – lead line is inadequate

      iii. Three pulls – emergency, pull man from confined space

      iv. No response – emergency, initiate rescue

         a. For this method to be used there can be no obstruction that would prevent clear signaling. Examples that may prevent signaling include: baffles, remote locations, corners, bends, etc.

         b. Entrants must be instructed to have direct contact with signal line. The line attached to either the airline or retrieval line may not be adequate for this method

4. **Other Forms of Communication**

a. Other forms of communication may be used as well. For example, a loud horn may be used in large confined spaces where the workers may be some distance from the access openings. (Air horns may be a source of ignition and therefore, should not be used in flammable or combustible atmospheres).

5. **Emergency Notification – Outside Services**

   a. A method to communicate to outside services (ambulance, EMS, fire, rescue, etc.) must be arranged. Telephone, two-way radio, cellular phone, etc. must be arranged to assure that outside service can be notified in the event they are needed.

6. **Inability of Establish Effective Communication System**

   a. If none of these means of communications is available or effective, no entry should be made into the confined space. Contact Health & Safety.

7. **Entry Supervisor's Responsibility**

   a. Prior to entry, the Entry Supervisor must establish an effective system of communication and assure, in practice, it is effective. To accomplish this, perform the following for each confined space:

      i. Prior to entry, evaluate the space to determine an adequate system of communication.

      ii. Acceptable communication systems include, but are not limited to, visual contact, verbal, either unassisted or electronically assisted (contact H&S if electronically assisted method is proposed for a space containing flammable or combustible materials) or sounds – i.e. periodic taps.

      iii. Whenever the Attendant Standby cannot see the Entrant(s), adequate communication means Attendant Standby and entrant(s) can hear and understand each other's voices or signals.

      iv. Initially, and periodically, verify that the established communication system is and continues to be effective.

XII. CONFINED SPACE QUALIFICATION PROCESS

1. **Training**

   a. Each employee that will work with Confined Space Entry will be required to complete Confined Space Training prior to being assigned to work in a confined space.

   b. Training records will be maintained by the HSE department. The records are available to employees and or their designated representative upon request written request.

   c. Training records must contain can be in two (2) forms MSHA 5000-23 or as a completed evaluation form. The minimal information required on all training documents is:

      i. Employees Name

      ii. Date of training

      iii. Signature or initials of Trainer

      iv. Type of training given

      v. Location of training

   d. The Confined Space Training shall consist of:

i. Confined space hazard recognition
ii. Attendant Duties and Responsibilities
iii. Entrant Duties and Responsibilities
iv. Entry Supervisor Duties and Responsibilities
v. Respirator training/breathing apparatus
vi. Powered ventilation equipment use
vii. All rescue and support equipment use (retrieval Equipment)
viii. Emergency rescue procedures
ix. Lockout/Tagout, isolation, and purging
x. Air monitoring and gas detection equipment
xi. Personal protective clothing/equipment requirements
xii. Training shall be documented showing subject, attendees, trainer and proof of competency
xiii. Training records if done on site shall be immediately available for review
xiv. Training conducted off site shall be available within 24 hrs.

XIII. CONFINED SPACE STANDARD REVIEW

1. To assure the continued effectiveness of the Confined Space Entry Standard, Strategic Construction Solutions will perform a periodic review of two components of the program: Entry Operations and Entry Standard. The following is a description of how and when these reviews will be conducted.
2. **Entry Operation Review**
    a. Entry operations must be reviewed and revised to correct noted deficiencies before subsequent entries are authorized. This review is required wherever the Entry Supervisor (Site Specific Entry) and Strategic Construction Solutions (all entries) have reason to believe that measures taken under the program may not effectively protect employees. Examples may include, but are not limited to:
        i. Unauthorized entry to a permit space
        ii. Detection of a hazard not covered by the permit
        iii. Detection of a condition prohibited by the permit
        iv. Occurrence of an injury or near-miss during entry
        v. A change in the use of configuration of a space
        vi. Complaints about the effectiveness of the program
        vii. Other circumstances
    b. It is the Entry Supervisor's responsibility to notify the crew and Health & Safety if these or other conditions that affect the protection of employees in confined spaces are detected. The Corporate Health & Safety Director must be notified.
3. **Entry Standard Review**

a. Within one (1) year from the date this program is implemented and annually thereafter, Strategic Construction Solutions will review the Confined Space Entry Standard to ensure that employees are protected from hazards of confined spaces. The following tools will be used:

   i. Canceled permits/issues identified

   ii. Entry Operation Review/audits

   iii. Observations conducted by Health & Safety

   iv. Other sources will also be utilized as available

XIV. REFERENCES

1. 29 CFR 1910.146
2. 29 CFR 1926.1201-1213
3. Cal/OSHA T8 CCR 5157
4. 30 CFR Part 57.5015

REVISION DATE	REVIEW DATE	REVISION NUMBER	REVISION COMMENTS	AUTHOR
27SEP2016	27SEP2017	1	Reformatted and edited document	Bill Oswald
15NOV16	15NOV17	2	Edits	K Rodriguez

CONFINED SPACE ENTRY PERMIT

DIVISION:	DEPARTMENT:
LOCATION OF CONFINED SPACE:	DATE:
SHIFT: DAY NIGHT	CONFINED SPACE ID#:
ENTRY SUPERVISOR NAME:	APPROVAL SIGNATURE:
ENTRY ATTENDANT(S) NAME(S):	
AUTHORIZED ENTRANT(S) NAME(S):	
If 'NO' to all questions in Section A, this space may be classified as a Non-Permit Required Confined Space (sign below)	
Name	Signature

STEP 1 – ARE HAZARDOUS ENERGY SOURCES / CONDITIONS PRESENT?

Section A – Hazard Checklist			Section B – Hazard Checklist		
YES	**NO**	**HAZARD**	**YES**	**NO**	**HAZARD**
		Hazardous Atmosphere (including the potential)			Pre-Opening Hazards
		Sloping walls or floors			Flammables / Fire
		Engulfment / Entrapment			Toxins / Corrosive Material
		Any other SERIOUS safety hazard			Hazardous Energy
Type of serious hazard:					Conditions Outside Space
					Falls / Falling Objects
If yes to any question in section A (above) the space must be classified as PERMIT REQUIRED. Other serious safety hazards are those in which an injury of serious nature is reasonably likely to occur if specific controls are not applied.					Lighting / Noise
					Biological Hazards
					Other

STEP 2 – PREPARATION PROCEDURES

PRE-ENTRY AIR TESTING			DONE	PROCEDURE	DONE	PROCEDURE
GAS	**ACCEPTABLE**	**READINGS**		Pre-Entry Checklist		Lighting / Hearing Protection
Oxygen	19.5 - 23.5 %			Oxygen Pre-Entry Reading		Thermal Protection
LEL	< 10 %			Chemical Cleanout Electrical		Hydraulic Protection
CO	35 PPM			Ventilation Purge Time		Radiation Protection
H2S	10 PPM			Lock out / Tag out / Try out		Traffic Control / Barricading
Other				Mechanical Isolation		Pneumatic Isolation
Test Instrument and #				Fall Protection		Hot Work Permit
Date of last calibration:						

REQUIRED EQUIPMENT

REQUIRED	EQUIPMENT	REQUIRED	EQUIPMENT
	Ventilator		Hand / Foot Protection
	Respirator		Lighting with GFCI
	Atmospheric Monitor		Ladder / Safe Access
	Isolation Devices		Fire Extinguisher
	Full body harness		Intrinsically Safe Radio / Phone
	Tripod - Emergency rescue winch		
	PPE for entry		
	Other:		

ACCEPTABLE ENTRY CONDITIONS

DONE	ACTION	DONE	ACTION
	Review Permit with Attendant and Entrant		All Safety Equipment Available
	Entry Permit Posted at Portal		SDSs Reviewed for chemicals used or present
	Preparation / Isolation Procedures Done		Pre-Opening Hazards Eliminated
	Traffic Control / Barricading Done		Employees Task Trained
	Attendant/Entrant Communication Tested		Atmospheric Tests Satisfactory
	CSE / Crews, Emergency Services		Surrounding Areas Free From Vapors and Other Hazards

CONTINUOUS ATMOSPHERIC MONITORING

GAS	ACCEPTABLE	TIME	READING	TIME	READING	TIME	READING
Oxygen	19.5 - 23.5 %						
LEL	< 10 %						
CO	< 35 PPM						
H2S	< 10 PPM						
Other:							

LEL = Lower Explosive Limit
PEL = Permissible Exposure Limit
TLV = Threshold Limit Value
IDLH = Immediately Dangerous to Life or Health

Post entry Cancelation of permit by Confined Space Entry Supervisor	Signature:
Post entry evaluation:	

WORK DETAILS			
Site Name		Work Order #	
Location on site		GPS Coordinates (optional)	
Plan Developed by		Date	
Related permits	☐ Confined Space Entry Permit ☐ Work at Height Permit ☐ Excavation and Trenching Permit ☐ Utility Locate Permit		

EMERGENCY COMMUNICATION REQUIREMENTS	
Emergency Phone Number:	Emergency Radio Channel (if applicable):
Emergency Contact Name:	Emergency Assembly Location:

POTENTIAL RESCUE SITUATIONS

☐ Engulfment ☐ Height ☐ Hazardous Atmosphere ☐ Hazardous Chemicals ☐ Fire ☐ Electrical ☐ Other:

Will entry and exit to the work area impact on any emergency rescue? ☐ Yes ☐ No (if YES must be addressed in rescue plan)

EMERGENCY EQUIPMENT REQUIREMENTS

☐ Harness	☐ First Aid Kit	☐ Breathing Apparatus
☐ Life/Rescue Line	☐ Basket Stretcher	☐ Oxygen Resuscitation Equipment (Oxy-Viva)
☐ Tripod/Davit/Anchor Points	☐ Roll-up Stretcher	☐ Lighting
☐ Polycarbonate Slide Sheet	☐ Rescue Strop	☐ Fire Fighting Equipment
☐ Hazardous Chemical Suit	☐ Satellite/Mobile Phone	☐ Ventilation Equipment
☐ Crane	☐ Gas Detector	☐ Defibrillator

Other rescue equipment requirements:

Rescue equipment must be available at the job location prior to commencing the work activity.

RESCUE PLAN (INSERT PHOTO/DRAWING AND NOTES)	
	Plan includes: ☐ Entry and Exit Points ☐ Location of Rescue Equipment ☐ Evacuation Point/s ☐ Emergency Assembly Area ☐ Location of Identified Hazards ☐ Participants in Rescue Party ☐ Role of each participant ☐ Location of Workers involved in Rescue ☐ Other:

Rescue Plan Notes:

BRIEFING REQUIREMENTS			
Participants in the rescue party been briefed on the rescue plan prior to the work commencing	**YES** ☐	Rescue equipment checked	**YES** ☐

HSE MANUAL

SECTION # HS C020

Trenching, Shoring and Excavation Policy

Revision 2_12OCT2016

I. SCOPE

A. Strategic Construction Solutions is committed to providing a safe and healthy work environment for our employees. It is the policy at Strategic Construction Solutions to permit only trained and authorized personnel to create or work in excavations. The purpose of this program is to prevent the hazards of excavation work and the danger of trench cave-ins and other hazards associated with trenches include contact with numerous underground utilities, hazardous atmospheres, water accumulation, and collapse of adjacent structures.

II. DEFINITIONS

A. **Aluminum hydraulic shoring**: means an engineered shoring system comprised of aluminum hydraulic cylinders (cross braces), used in conjunction with vertical rails (uprights) or horizontal rails (walers). Such a system is designed specifically to support the sidewalls of an excavation and prevent cave-ins.

B. **Benching**: means a method of protecting employees from cave-ins by excavating the sides of an excavation to form one or a series of horizontal levels or steps, usually with vertical or near-vertical surfaces between levels.

C. **Cave-in**: means the separation of a mass of soil or rock material from the side of an excavation, or the loss of soil from under a trench shield or support system, and its sudden movement into the excavation, either by falling or sliding, in sufficient quantity so that it could entrap, bury, or otherwise injure and immobilize a person.

D. **Competent person:** means one who is capable of identifying existing and predictable hazards in the surroundings, or working conditions that are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them. All competent persons must complete the 4-hour Physical Plant trenching and shoring class, successfully pass the exam, and be certified for successful completion of the class. A competent person should have and be able to demonstrate the following:

1. Training, experience, and knowledge of:
    a) Soil analysis
    b) Use of protective systems
    c) Requirements of applicable OSHA regulations
2. Ability to detect:
    a) Conditions that could result in cave-ins
    b) Failures in protective systems
    c) Hazardous atmospheres
    d) Other hazards, including those associated with confined spaces
3. Have authority to take prompt corrective actions to eliminate existing and predictable hazards and to stop work when required.

E. **Excavation**: means any man-made cut, cavity, trench, or depression in an earth surface, formed by earth removal.

F. **Registered Professional Engineer**: means a person who is registered as a professional engineer.

G. **Shield (shield system)**: means a structure that is able to withstand the forces imposed on it by a cave-in and thereby protect employees with the structure. Shields can be permanent structure or can be designed to be portable and moved along as work progresses. Also known as trench box or trench shield.

H. **Shoring (shoring system)**: means a structure such as a metal hydraulic, mechanical or timber shoring system that supports the sides of an excavation and which is designed to prevent cave-ins.

I. **Sloping (sloping system)**: means a method of protecting employees from cave-ins by excavating to form sides of an excavation that are inclined away from the excavation so as to prevent cave-ins. The angle of incline varies with differences in such factors as the soil type, environmental conditions of exposure, and application of surcharge loads.

J. **Trench (trench excavation)**: means a narrow excavation (in relation to its length) made below the surface of the ground. In general, the depth is greater than the width, but the width of a trench is not greater than 15 feet. If forms or other structures are installed or constructed in an excavation as to reduce the dimension measured from the forms or structure to the side of the excavation to 15 feet or less, the excavation is also considered to be a trench.

III. RESPONSIBILITIES

A. Project Manager/Construction Managers

1. The PM/CM is responsible for developing and maintaining the written Excavation Procedures. These procedures are kept in the Site Project book.
2. Our Excavation Procedures are administered under the direction of our competent person(s), someone 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. These competent persons include Site Safety Manager and all Site Supervisors.

IV. PROCEDURE

A. Before anyone at this company begins excavating, we follow the steps below:

1. Contact the State One Call location system utility companies or property owners and ask the companies or owners to find the exact location of the underground installations in the area.
2. If the locating service does not respond within 24 hours the period established by law or ordinance, or if they cannot establish the location of the utility lines, the excavation may proceed with caution. In this situation, provide employees with detection equipment or other safe and acceptable means to locate utility installations.
3. Remove or adequately support the following objects (i.e., trees, rocks, and sidewalks) in the excavation area that could create a hazard to employees.
4. Using applicable OSHA regulations, classify the type of soil and rock deposits at the site as either stable rock, Type A, Type B, or Type C soil. The soil classification is based on the results of at least one visual and at least one manual analysis conducted by a competent person. Details of the acceptable visual and manual analyses are to be found in the OSHA regulation.

   NOTE: Soil classification is not necessary if the excavation will be sloped to an angle of one and one-half horizontal to one vertical.

5. Have the competent person choose the appropriate method for protective support systems, as necessary. See the Protective Support Systems section for the procedures he/she used for selecting this system.

V. TESTING METHODS

A. The competent person in charge of the excavation shall be responsible for determining whether the soil is Type B or C. The competent person shall use a visual test coupled with one or more manual tests.

VI. VISUAL TEST

A. In addition to checking the items on the trench inspection form, the competent person should perform a visual test to evaluate the conditions around the site. In a visual test, the entire excavation site is observed, including the soil adjacent to the site and the soil being excavated. The competent person also checks for any signs of vibration.

B. During the visual test, the competent person should check for crack-line openings along the failure zone that would indicate tension cracks, look for existing utilities that indicate that the soil has been previously disturbed, and observe the open side of the excavation for indications of layered geologic structuring.

C. This person should also look for signs of bulging, boiling, or sloughing, as well as for signs of surface water seeping from the sides of the excavation or from the water table.

D. In addition, the area adjacent to the excavation should be checked for signs of foundations or other intrusions into the failure zone, and the evaluator should check for surcharging and the spoil distance from the edge of the excavation.

VII. MANUAL TESTS

A. Thumb penetration test- Attempt to press the thumb firmly into the soil in question. If the thumb penetrates no further than the length of the nail, it is probably Type B soil. If the thumb penetrates the full length of the thumb, it is Type C. It should be noted that the thumb penetration test is the least accurate testing method.

B. Dry strength test- Take a sample of dry soil. If it crumbles freely or with moderate pressure into individual grains it is considered granular (Type C). Dry soil that falls into clumps that subsequently break into smaller clumps (and the smaller clumps can only be broken with difficulty) it is probably clay in combination with gravel, sand, or silt (Type B).

C. Plasticity or Wet Thread Test - Take a moist sample of the soil. Mold it into a ball and then attempt to roll it into a thin thread approximately 1/8 inch in diameter by two inches in length. If the soil sample does not break when held by one end, it may be considered Type B.

D. A pocket penetrometer, shearvane, or torvane may also be used to determine the unconfined compression strength of soils.

VIII. SPOIL

A. Temporary spoil shall be placed no closer than 2 (two) feet from the surface edge of the excavation, measured from the nearest base of the spoil to the cut. This distance should not be measured from the crown of the spoil deposit. This distance requirement ensures that loose rock or soil from the temporary spoil will not fall on employees in the trench.

B. Spoil should be placed so that it channels rainwater and other run-off water away from the excavation.

C. Spoil should be placed so that it cannot accidentally run, slide, or fall back into the excavation.

D. Permanent spoil should be placed some distance from the excavation.

IX. SURFACE CROSSING OF TRENCHES

A. Surface crossing of trenches should not be made unless absolutely necessary. However, if necessary, they are only permitted under the following conditions:

1. Vehicle crossings must be designed by and installed under the supervision of a registered professional engineer.

2. Walkways or bridges must: have a minimum clear width of 20 inches, be fitted with standard rails, and extend a minimum of 24 inches past the surface edge of the trench.

X. INGRESS & EGRESS

A. Trenches 4 (four) feet or more in depth shall be provided with a fixed means of egress.

B. Spacing between ladders or other means of egress must be such that a worker will not have to travel more than 25 feet laterally to the nearest means of egress.

C. Ladders must be secured and extend a minimum of 36 inches above the landing.

D. Metal ladders should be used with caution, particularly when electric utilities are present.

XI. PROTECTIVE SUPPORT SYSTEMS

A. The company protects each employee in an excavation from cave-ins during an excavation by an adequate protective system designed in accordance with OSHA standards. Protective system options include proper sloping or benching of the sides of the excavation; supporting the sides of the excavation with timber shoring or aluminum hydraulic shoring; or placing a shield between the side of the excavation and the work area. Strategic Construction Solution has the following standard operating procedures regarding protective support systems for excavations, in accordance with safe practices and procedures and OSHA excavation regulations:

1. If the excavation is made entirely of stable rock, then no protective system is necessary or used.

2. If the excavation is less than 5 (five) feet in depth (provided there is no indication of a potential cave-in), then no protective system is necessary or used.

3. If the excavation is less than or equal to 20 feet in depth, then competent person chooses the most practical design approach (that meets required performance criteria) for the particular circumstance, and/or

4. A registered professional engineer designs all protective systems for use in the excavation.

XII. SLOPING

A. When sloping is used to protect against cave-ins, these options can be chosen for designing sloping systems:

1. If a soil classification is not made, then slope the sides of the excavation to an angle not steeper than one and one-half horizontal to one vertical (34 degrees). A slope of this gradation or less is considered safe for any type of soil.
2. Use the OSHA standard to determine the maximum allowable slope and allowable configurations for sloping systems. The soil type must be determined in order to use this option.
3. Use other tabulated data approved by a registered professional engineer.
4. Have an engineer design and approve the system to be used.

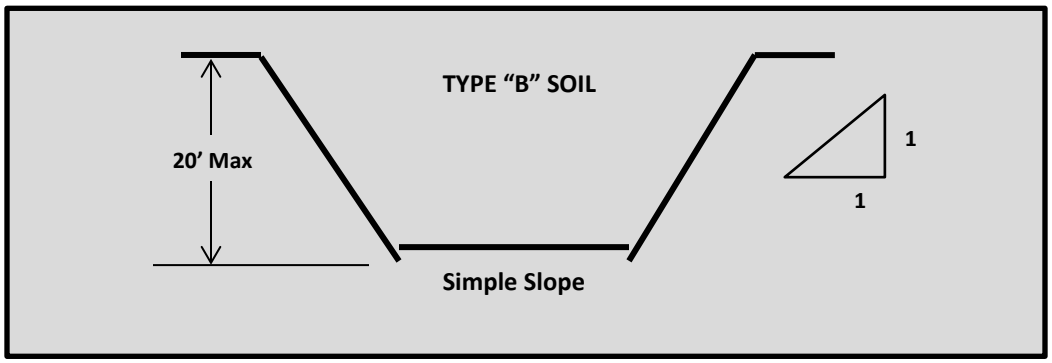
B. There are a number of exceptions or special cases to these general sloping guidelines, which can be utilized by your company if the conditions meet the exception's requirements. The exceptions and conditions are outlined below:

1. In Type A soil, simple slope excavations which are open 24 hours or less (short term) and which are 12 feet high or less in depth may have a maximum allowable slope of 1/2 horizontal to 1 vertical.
2. In Type A soil, all excavations 8 (eight) feet or less in depth which have unsupported vertically sided lower portions must have a maximum vertical side of 3.5 feet.
3. In Type A soil, excavations over 8 (eight) feet but less than 12 feet in depth with unsupported vertically sided lower portions must have a maximum allowable slope of 1H: 1V and a maximum vertical side of 3.5 feet.
4. In Type A soil, excavations 20 feet or less with vertically sided lower portions that are supported or shielded shall have a maximum allowable slope of 3/4 H: 1V. The support or shield system must extend at least 18 inches above the top of the vertical side.
5. In Type B soil, all excavations 20 feet or less which have vertically sided lower portions shall be shielded or supported to a height at least 18 inches above the top of the vertical side. The excavation shall have a maximum allowable slope of 1H: 1V.
6. In Type C soil, all excavations 20 feet or less which have vertically sided lower portions shall be shielded or supported to a height at least 18 inches above the top of the vertical side. The excavation shall have a maximum allowable slope of 1-1/2 H: 1V.
7. When an excavation contains layers of different types of soils, the general sloping requirements do not apply. The excavation must be sloped according to the OSHA standard.

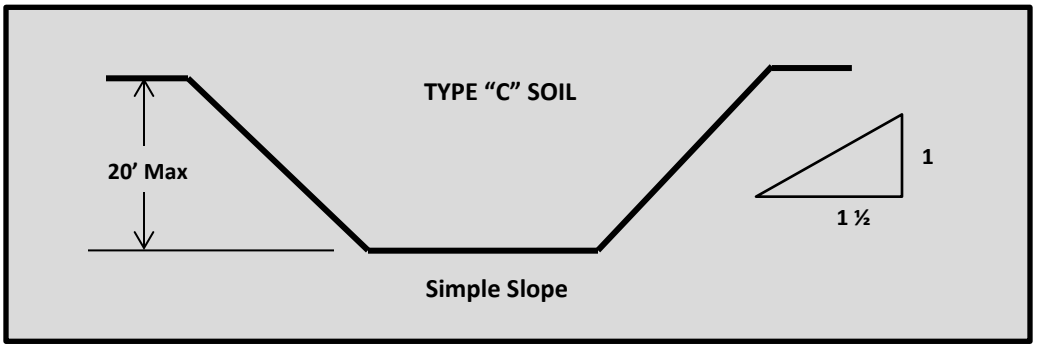
C. Maximum allowable slopes for excavations less than 20' based on soil type and angle to the horizontal are as follows:

Soil Type	Height/depth ratio	Slope Angle
Type B	1:1	45 degrees
Type C	1 1/2:1	34 degrees

D. A 10-foot-deep trench in Type B soil would have to be sloped to a 45-degree angle, or sloped 10 feet back in both directions. Total distance across a 10-foot-deep trench would be 20 feet, plus the width of the bottom of the trench itself.



E. In Type C soil, the trench would be sloped at a 34-degree angle, or 15 feet back in both directions for at least 30 feet across, plus the width of the bottom of the trench itself. All simple slope excavations 20 feet or less in depth shall have a maximum allowable slope of 1 1/2:1.



F. The competent person chooses the best option for sloping for the job at hand.

XIII. BENCHING

A. When benching is used to protect against cave-ins, these options can be chosen for designing benching systems:

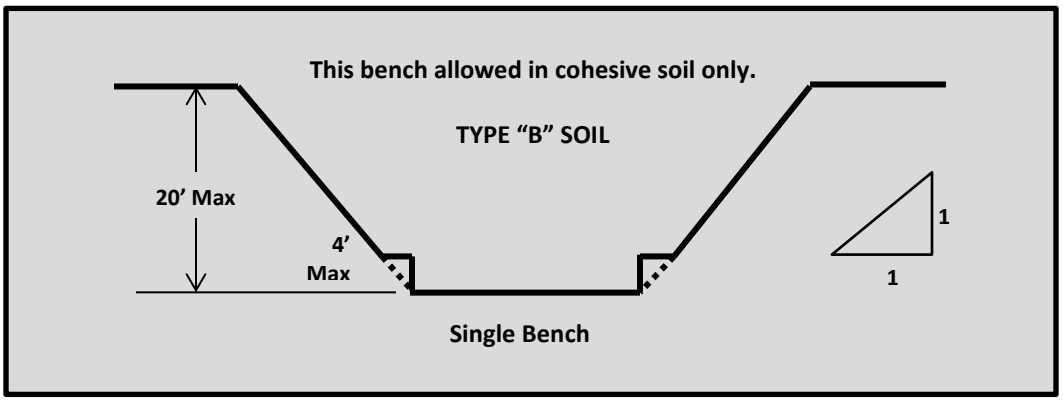
1. Use Appendices A and B of 29 CFR 1926, Subpart P to determine the maximum allowable slope and allowable configurations for benching systems. The soil type must be determined in order to use this option.
2. Use other tabulated data approved by a registered professional engineer. Have an engineer design and approve the system to be used.
3. Have an engineer design and approve the system to be used.

B. There are a number of exceptions or special cases to these general benching guidelines, which should be utilized by your company if the conditions meet the exception's requirements. The exceptions and conditions are outlined below:

1. In Type A soil, simple slope excavations which are open 24 hours or less (short term) and which are 12 feet high or less in depth may have a maximum allowable slope of 1/2 horizontal to 1 vertical.
2. In Type A soil, all excavations 8 (eight) feet or less in depth which have unsupported vertically sided lower portions must have a maximum vertical side of 3.5 feet.

3. In Type A soil, excavations over 8 (eight) feet but less than 12 feet in depth with unsupported vertically sided lower portions must have a maximum allowable slope of 1H:1V and a maximum vertical side of 3.5 feet.
4. In Type A soil, excavations 20 feet or less with vertically sided lower portions that are supported or shielded shall have a maximum allowable slope of 3/4H:1V. The support or shield system must extend at least 18 inches above the top of the vertical side.
5. In Type B soil, all excavations 20 feet or less which have vertically sided lower portions shall be shielded or supported to a height at least 18 inches above the top of the vertical side. The excavation shall have a maximum allowable slope of 1H:1V.
6. In Type C soil, all excavations 20 feet or less which have vertically sided lower portions shall be shielded or supported to a height at least 18 inches above the top of the vertical side. The excavation shall have a maximum allowable slope of 1-1/2 H:1V.

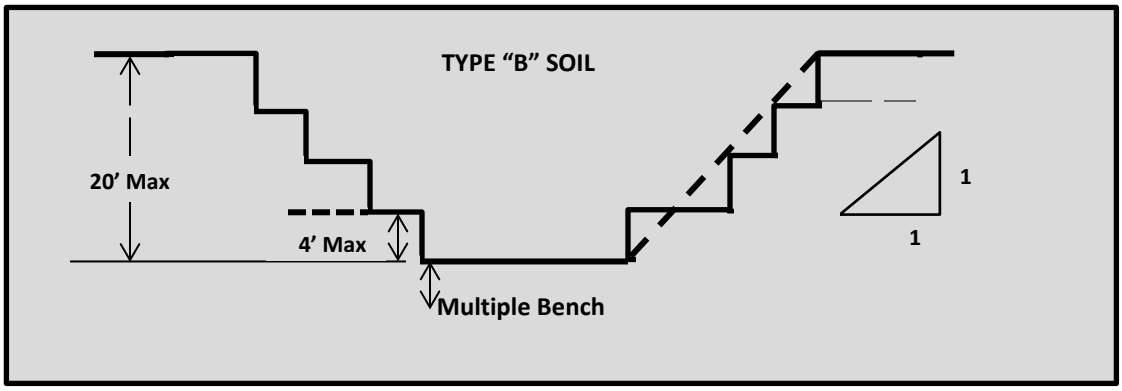
C. When an excavation contains layers of different types of soils, the general sloping requirements do not apply. The excavation must be sloped according to the OSHA standard.



D. There are two basic types of benching, single and multiple, which can be used in conjunction with sloping.

E. All benched excavations 20 feet or less in depth shall have a maximum allowable slope of 1:1. In Type B soil, the vertical height of the benches must not exceed 4 feet. Benches must be below the maximum allowable slope for that soil type. In other words, a 10-foot deep trench in Type B soil must be benched back 10 feet in each direction, with the maximum of a 45-degree angle.

F. The competent person chooses the best option for sloping for the job at hand.



G. Benching is not allowed in Type C soil.

XIV. SUPPORT SYSTEMS, SHIELD SYSTEMS, AND OTHER PROTECTIVE SYSTEMS

A. **Timber Shoring**

B. When trenches do not exceed 20 feet, timber shoring according to OSHA design specifications may be used. Designs for timber shoring in trenches for company work sites are determined by the competent person using the following method(s):

1. Use the requirements set forth by OSHA. The design specifications for timber shoring provided by OSHA may be found in the OSHA standard. These tables refer to the actual dimensions and not nominal dimensions of the timber. If the competent person chooses to use nominal size shoring, he/she must use the additional tables found in the OSHA standard. The soil type in which the excavation is made must be determined in order to use the OSHA data.

NOTE: The specifications do not apply in every situation experienced in the field; the data were developed to apply to most common trenching situations. If the specifications do not apply to the situation encountered in the field, the competent person will make a determination of what approach to use to allow safe protective support of the excavation.

2. Use data provided by the manufacturer of the support system.
3. Use other tabulated data approved by an engineer.
4. Have a registered professional engineer design the system.

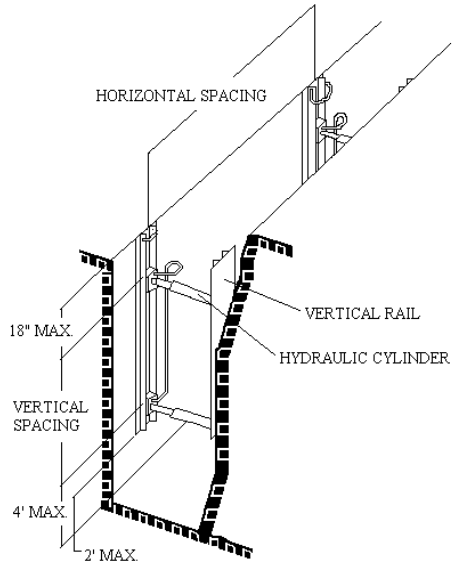
C. **Aluminum Hydraulic Shoring**

1. Determined by the competent person, each design for aluminum hydraulic shoring is based upon the following method(s):
2. Use the manufacturer's tabulated data and design in accordance with the manufacturer's specifications, recommendations, and limitations. Deviations from the manufacturer's specifications, recommendations, or limitations are only allowed upon written approval of the manufacturer, which must be obtained by the competent person prior to implementation. The written approval is kept at the job site during construction of the protective system.
3. Use the OSHA specifications if the manufacturer's tabulated data cannot be utilized.

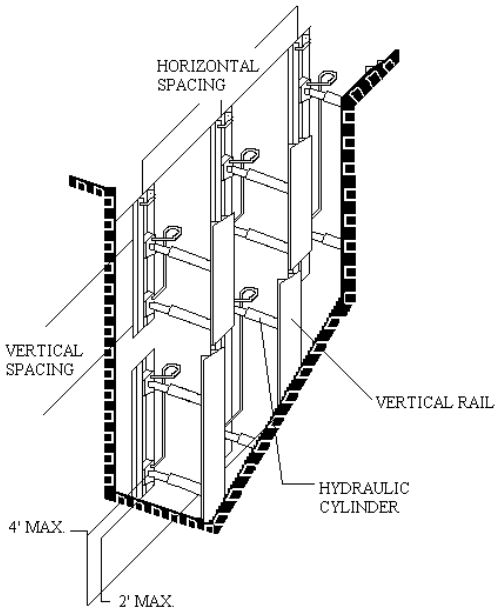
   NOTE: Before using the OSHA data, the soil type must be determined.
4. Use other tabulated data approved by an engineer.

D. Here are some typical installations of aluminum hydraulic shoring:

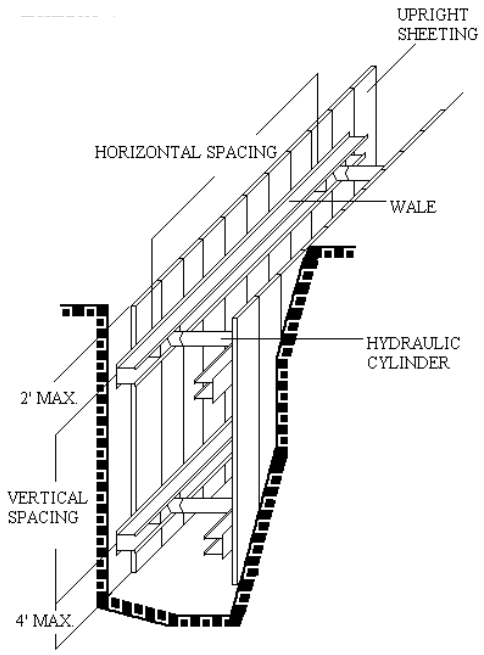
1. Vertical aluminum hydraulic shoring (spot bracing)



2. Vertical aluminum hydraulic shoring (with plywood)
3. Vertical aluminum hydraulic shoring (stacked)



4. Aluminum hydraulic shoring waler system (typical)



5. Aluminum hydraulic shoring waler system (typical)

XV. OTHER SUPPORT SYSTEMS

A. Designs for our support systems are determined by the competent person using the following method(s):

1. Use data provided by the manufacturer of the support system.
2. Use other tabulated data approved by an engineer.
3. Have a registered professional engineer design the system.

XVI. SHIELDING

A. Determined by the competent person, designs for shielding are based upon the following method(s):

1. Use data provided by the manufacturer of the support system.
2. Use other tabulated data approved by an engineer.
3. Have a registered professional engineer design the system.

XVII. OTHER PROTECTIVE SYSTEMS

A. Designs for our protective systems are determined by the competent person using the following method(s):

1. Use data provided by the manufacturer of the support system.
2. Use other tabulated data approved by an engineer.

3. Have a registered professional engineer design the system.

XVIII. GENERAL REQUIREMENTS FOR EXCAVATIONS

A. The following rules are to be followed at all times by all employees working on, in, or near excavations, as applicable:

1. Employees exposed to public vehicular traffic must wear warning vests or other suitable garments made of reflective or high-visibility material.
2. The competent person inspects the excavation and the adjacent areas on a daily basis for possible cave-ins, failure of protective systems and equipment, hazardous atmospheres, or other hazardous conditions (see appendices for Daily Inspection Checklist. Inspections are also required after the occurrence of any natural (such as rain) or man-made events (such as blasting) that could increase the potential for hazards. Employees may not begin work until after being informed by the competent person that these inspections are complete.
3. A warning system is used to alert operators of heavy equipment and other employees at the work site of the edge of an excavation.
4. Adequate protection is provided to protect employees from falling rock, soil, or other materials and equipment. Protection is provided by placing and keeping such materials or equipment at least 2 (two) 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.
5. Employees are not permitted under loads that are handled by lifting or digging equipment. Employees are not allowed to work in the excavation above other employees unless the lower level employees are adequately protected.
6. While the excavation is open, underground installations are protected, supported, or removed as necessary to safeguard employees. Adjacent structures are supported to prevent possible collapse.
7. Employees are not permitted to work in excavations where water has accumulated or is accumulating unless adequate precautions have been taken. Diversion ditches, dikes, or other means are used to prevent surface water from entering an excavation and to provide drainage to the adjacent area.
8. Before an employee enters an excavation greater than 4 (four) feet in depth, the competent person must test the atmosphere where oxygen deficiency or a hazardous atmosphere exists or could reasonably exist (i.e., excavations in landfill areas or excavations in areas where hazardous substances are stored nearby). Emergency rescue equipment is readily available and attended when hazardous atmospheric conditions exist or may develop.
9. Sufficient means for exiting excavations 4 (four) feet deep or more are provided and are within 25 feet of lateral travel for employees.
10. Guardrails are provided if there are walkways or bridges crossing over an excavation.

XIX. TRAINING

The Site Supervisor will identify all new employees in the employee orientation program and make arrangements with management to schedule training. The following person(s) will conduct initial training and evaluation: Site Safety Manager and/or the Site Supervisor. These instructor(s) have the necessary knowledge, training, and experience to train excavation workers.

A. **Training Certification**

1. After an employee has completed the training program, our company keeps records certifying that each excavation worker has successfully completed excavation training. The certificate includes the name of the worker, the date(s) of the training, and the signature of the person who did the training. SITE SAFETY MANAGER is responsible for keeping a copy of all training certification records.

B. **Current Certified Excavation Workers**

1. Under no circumstances shall an employee create or work in an excavation until he/she has successfully completed this company's excavation training program. This includes all new excavation workers regardless of claimed previous experience.

XX. INSPECTION PROCEDURES

A. Our competent person inspects excavations daily and during poor weather. Our inspection checklist is attached to these written Excavation Procedures. Site Supervisor is responsible for retaining completed inspection checklists.

XXI. PERSONAL PROTECTIVE EQUIPMENT

A. All excavation workers required to wear all required personal protective equipment and are trained when it is necessary; what equipment is necessary; how to properly put on, take off, adjust, and wear it; limitations of the equipment; and proper care, maintenance, useful life, and disposal of PPE.

XXII. RECORDKEEPING

A. We keep a copy of the following documents at the job site during construction of a particular excavation protective system and then store them in the Site Safety Manager office at company headquarters where they will be readily available to OSHA upon request:

1. Tabulated data for designing any of our sloping or benching systems
2. Designs of any sloping or benching systems approved by a registered professional engineer
3. Manufacturer's specifications, recommendations, and limitations for designs of support systems, shield systems, and other protective systems drawn from manufacturer's tabulated data
4. Manufacturer's approval to deviate from the specifications, recommendations, and limitations for designs of support systems, shield systems, and other protective systems drawn from manufacturer's tabulated data

5. Tabulated data for designing any of our support systems, shield systems, and other protective systems
6. Designs of all support systems, shield systems, and other protective systems approved by a registered professional engineer

XXIII. REFERENCES

29 CFR 1926.651

29 CFR 1926.652

REVISION DATE	REVIEW DATE	REVISION NUMBER	REVISION COMMENTS	AUTHOR
09/30/2016	09/30/2016	1	created document	Bill Oswald
12OCT16	12OCT17	2	Revisions/Edits	K Rodriguez

EXCAVATION AND TRENCHING SAFETY CHECKLIST
(Pre-work and Daily Inspection)

PRE-WORK

Job/Task ID: _____ Excavation Permit No.: _____

	Verified By	Date
Excavation permit is completed, dated, all required signatures obtained, all attachments/scans/etc. are complete as required. (Supervisor and Competent Person)	Supervisor:	
	Competent Person:	
Competent Person(s) has been designated /assigned; designation form is complete /current (within 1 year). (Supervisor)	Supervisor:	
Initial (pre-excavation) call to "One Call" has been made. Date: _____ Time: _____ (Supervisor)	Supervisor:	
Walk down of proposed excavation performed. (Supervisor and Competent Person) Walk down to ensure: ▪ Ground markings identifying underground obstructions are present and applied in accordance with. Evaluation of the work area for potential hazards that have not been addressed by scanning existing drawing research efforts and/or other pre-task planning activities.	Supervisor:	
	Competent Person:	
Excavation work is released to begin. (Supervisor)	Supervisor:	

EXCAVATION AND TRENCHING PERMIT

Project Name	Project Location	Project No./Contract No.
Date	Time	Expiration Date
Job Description and Location (be specific)		

BEFORE TRENCHING AND EXCAVATION

☐ Soil Classification:
☐ Stable Rock ☐ Type A ☐ Type B ☐ Type C
☐ Requirements have been met and required data recommended
☐ Proximity to utilities, buildings, footings or pilings, and sources of vibration
☐ Owners of utilities, service, or transmission piping, (electrical, telephone, water, sewer)
☐ Site of Excavation:
Depth _____ Width _____ Length _____
☐ Changing ground conditions, particularly after rain fall
☐ Monitor for possible oxygen deficiency or gaseous conditions
☐ Adequacy of shoring and/or sloping as work progresses
☐ Entrance and Exit Facilities:
☐ Stairway ☐ Ladders ☐ Ramp
☐ Change in vehicular and machinery operation patterns
☐ Water removal equipment and operation
☐ Adequacy of portable trench boxes or trench shields

☐ Check for previously disturbed ground
☐ Adequacy and availability of all equipment, including personal protective gear, shoring material, signs, barricades, and machinery
☐ Other known obstructions (such as footing concrete encasements)
☐ Allowable slope
☐ Overhead obstructions reviewed
Protective systems depth of a trench or excavation of 5 feet (1.5 meters) or more – check the applicable boxes below:
☐ Sloping and benching
☐ Timber shoring for trenches
☐ Aluminum hydraulic shoring for trenching
☐ Alternative to timber shoring
☐ Selection of protective systems
☐ Designed shoring (data must be filed on site)
Note: Sloping or benching for excavations greater than 20 feet (6.1 meters) deep must be designed by a registered professional engineer.
☐ Atmospheric testing required ☐ Yes ☐ No
☐ Oxygen ☐ LEL (%) ☐ Toxics

Comments

APPROVER	APPROVAL SIGNATURES	DATE
Competent Person		
Electrical		
Equipment Operator		
Supervisor		
Mechanical Engineer		
Civil Superintendent		
Other Approval if Required by Civil Engineer or Registered Professional Engineer		

Note: All items must be evaluated before start of work.

STRATEGIC
CONSTRUCTION SOLUTIONS

HSE MANUAL

SECTION #HSC 021

Aerial Man Lift Policy

Revision 2_14NOV2016

I. SCOPE

1. Strategic Construction Solutions recognizes the benefits of a safe and healthy work environment. The purpose of this policy exists to ensure that aerial platform lifts are safely operated to prevent injury to employees, contractors, and visitors. This policy applies to all aerial platform lifts used, stored or staged on-site. This policy applies to all contractors employees who operate or manage the aerial platform lifts.
2. Strategic Construction Solutions recognizes working at heights is a recognized risk that must be managed to prevent employees from falling. Also, some aerial platform lifts have the potential to create a "caught in between" or crush hazard due to the swing radius. Having procedures for safe operation, storage and staging of aerial platform lifts is essential to prevent falls and crush injuries.

II. DEFINITIONS

1. **Aerial Platform Lifts** - Any vehicle mounted device, telescoping or articulating or both, which is used to position personnel. This includes: extendable boom platforms, articulating boom platforms, vertical towers, electrical bucket trucks and other mechanized personnel lifts (IE: JLG's). Aerial ladders and scissor lifts shall not be included in this definition.
2. **Dedicated Spotter** - an individual whose work task is to serve as spotter to signal safe movement to the operator of the aerial platform lift. This spotter may perform other job tasks as long as it does not hamper their ability to perform the responsibilities of the dedicated spotter. The dedicated spotter should be trained on operation of the aerial platform lift.
3. **Movement** - Any forward, backward or rotating movement of the base, movement of stabilizing devices or movement of the boom or basket.
4. **Permitted Roadway** - A road where vehicles require a Vehicle Entry Permit or a Hot Work Spark Potential Permit to Work (PTW) to enter. Roadways are permitted to help control traffic or because they are hazardous classified locations.
5. **Stabilizing Device** - Outriggers, extending axles or any other similar piece of equipment that is intended to stabilize the aerial platform lift while in use.
6. **Trained Persons** - An individual who has completed an established training program and is able to safely operate the aerial platform lift. These individuals should be able to safely operate and perform daily inspections of the aerial platform lifts. Also referred to as "operator".

III. AERIAL PLATFORM LIFT GENERAL REQUIREMENTS

1. A copy of the manufacturer's manual shall be kept with the aerial platform lift.
2. Aerial platform lifts shall have both platform (upper) controls and lower controls. Upper controls shall be in or beside the platform within easy reach of the operator. Lower controls shall provide for overriding the upper controls.
3. Controls shall be plainly marked as to their function. All labels shall be legible.
4. All aerial platform lifts shall be fit for the purpose, and shall be maintained in safe working order as defined by the manufacturer.

5. Aerial platform 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. This certification shall be kept with the aerial platform lift.
6. The manufacturer boom and basket load weight limit shall be labeled in view of personnel in the basket.
7. Boot around joystick controllers must be free of cracks.
8. Electrocution warnings must be visible to basket operators.
9. If an electrical outlet is installed on the basket, it must be free of damage and be equipped with a cover.
10. All aerial platform lifts shall be equipped with a working tilt alarm to notify the operator if the aerial platform lift is exceeding its safe operating limit on an incline.
11. All aerial platform lifts shall be equipped with a working alarm that sounds when the platform is lowering.
12. All aerial platform lifts shall be equipped with either a gravity or swing gate. The latch on the swing gate must be in proper working condition.
13. Tires shall be in good condition. If tires do not meet the criteria for "good condition" listed below, the aerial platform lift may not be used to perform work.
    a. Foam filled tires are considered in good condition when neither the foam nor rubber cords are visible.
    b. Air filled tires are considered in good condition when the rubber is free of cracks and gouges.

IV. OPERATIONAL REQUIREMENTS

1. Only trained persons shall operate an aerial platform lift.
2. A dedicated spotter will be utilized whenever the aerial platform lift is in motion, except while traveling on non-permitted roadways.
3. The dedicated spotter must have a verbal or signal based communication with the operator of the aerial platform lift.
4. The dedicated spotter may be in the basket of the aerial platform lift provided that ALL provisions below are met:
    a. Only the basket and boom are in motion
    b. The dedicated spotter is not operating the lift
    c. The designated spotter has a clear view of all possible hazards from the basket.
    d. The device is designed to allow more than one person in the basket.
5. If equipped with stabilizing devices, the stabilizing devices must be fully extended before the aerial platform lift may be operated.
6. While stabilizing devices are in motion, only the personnel in the basket of the aerial platform lift may be within the swing radius of the aerial platform lift.
7. When there are accessible areas in which the equipment's rotating superstructure poses a reasonably foreseeable risk of striking an employee or pinching/crushing an employee against another part of the equipment or another object, the following apply:

8. Warning lines shall be erected to mark the boundaries of the hazard area. Where it's not feasible to erect these lines, signs (Danger - swing/crush zone) and high visibility markings can be placed on equipment to identify the hazard areas
9. Boom and basket load limits specified by the manufacturer shall not be exceeded. Tool weights will be included in the total weight in the basket.
10. Lower level controls shall not be operated while the lift is in use, unless permission has been obtained from person in the lift, except in the case of emergency.
11. The wheels of an aerial platform lift may be moved when the boom is elevated in a working position with workers in the basket, except when not specifically designed for this type of operation, per the manufacturer's recommendations.
12. When equipped with brakes they shall be set and outriggers, when used, shall be positioned on pads or a solid surface.
13. Wheel chocks shall be used whenever an aerial platform lift is being used on an incline.
14. Fire blankets shall be removed from the floor of the aerial platform lift before the platform is lowering to grade.
15. Aerial platform lifts shall not be used in sustained wind or gusts that exceed the safe operating limits set by the manufacturer.

V. OPERATING NEAR ELECTRICAL EQUIPMENT

1. Aerial platform lifts shall not be operated within 20 feet of any exposed and energized electrical line. The 20-foot distance applies to the aerial lift, and also all personnel and materials within the basket. Exceptions to the rule include:
    a. Specially trained and certified linemen,
    b. Qualified electricians and tree trimmers using electrically insulated aerial platform lifts.
    c. Qualified electricians following distances in 4.2
2. Qualified Electricians may operate a non-insulated aerial platform near insulated, energized conductors but must maintain the required distance from uninsulated parts or conductors shown in the table below:

Operation Near Insulated, Energized Electrical Lines (actual distance including elevation and distance)	
Voltage (nominal, kV, alternating current)	**Minimum clearance distance (feet)**
Up to 50	10
Over 50 to 200	15
Over 200 to 350	20
Over 350 to 500	25
Over 500 to 750	35
Over 750 to 1,000	45
Over 1,000	(As established by the utility owner/operator)

VI. PERSONAL SAFETY REQUIREMENTS

1. A body harness and fall arrest device shall be used when operating the aerial platform lift.
2. The fall arrest device shall be anchored to the designated anchor points manufactured into the platform basket. No person shall ever anchor to the platform railings.

3. Anchoring to an adjacent pole, structure or equipment while working from an aerial platform lift shall not be permitted, except when entering or exiting the platform basket at an elevation greater than six (6) feet with 100% fall protection.
4. When working over open water, personnel in the basket shall wear a personal floatation device in addition to a body harness and fall arrest device. While over open water, personnel shall un-anchor from the aerial platform lift.
5. Employees shall always stand firmly on the floor of the basket, and shall not sit or climb on the railing of the basket or use planks, ladders or other devices for work position.

VII. INSPECTION REQUIREMENTS

1. All aerial platform lifts on site will be current in the yearly inspection and daily pre-use inspection. These records shall be kept for the current year and three (3) years previous.
2. Aerial platform lifts will be inspected before each days use. The Strategic Construction Solutions pre-use Inspection sheet shall be used. If another sheet has been developed by a contractor, it may be used providing that it meets or exceeds all OSHA regulations.
3. The daily pre-use inspection must be performed prior to use on a job. A copy of the day's inspection sheet shall be kept with the aerial platform lift for the duration of the working day (24 hour maximum) and then filed with dispatch at the end of use for Strategic Construction Solutions owned lifts. The same daily pre-use inspection sheet may be used for seven (7) days. Contractors shall retain record of their daily pre-use inspections within their company.
4. The yearly inspection should be conducted by a mechanic that is competent on the specific make and model of aerial platform lift. A manufacturer approved yearly inspection sheet should be used.
5. Copies of the yearly inspection shall be kept with the aerial platform lift.
6. If the aerial platform lift is being stored or staged on a road way, cones, danger tape and/or barricades should be placed around the aerial platform lift to ensure that all drivers are aware of its presence on the roadway. When possible, the lifts should be staged and stored off of roadways.

VIII. TRAINING REQUIREMENTS

1. Strategic Construction Solutions and all onsite contractors will meet the following aerial platform lift training requirements. Each training program can be designed by the specific company to meet their individual needs as long as it meets the minimum requirements found in the section and complies with all OSHA regulations.
2. Aerial platform lift training will have the following components:
    a. Classroom training that covers the following subject areas as a minimum:
        i. Types of aerial platform lifts
        ii. Labels and markings required in lifts
        iii. Pre-use inspections and provide a copy of the company specific form to be used.
        iv. Responsibilities of the lift operator
        v. Safe work considerations such as fall protection, tip-overs (ground conditions), working near electrical lines, use of spotters, and dropped objects.

vi. Use of stabilizing devices such as outriggers and extending axels

vii. When base controls can be used in place of platform controls

viii. What conditions will activate the lifts "safe mode" due to overextension of operating conditions (for example: tilt alarm)

ix. Any other topics recommended by the manufacturer, OSHA, or are deemed necessary to ensure a complete understanding of the safe operation of aerial platform lifts.

b. Competency Verification will be necessary for the following categories of lifts:

i. ≤ 80' boom

ii. > 80' boom

3. The Competency Verification will require a demonstration of competency in a minimum of the following subject areas:

a. Performing a pre-use inspection

b. Proper access and use of fall protection

c. Ability to maneuver the lift smoothly and properly

d. Safely operates the lift:

i. Checks for pedestrians and other obstacles

ii. Uses horn, when appropriate

iii. Uses outriggers or extending axels, when appropriate

iv. Travels with the platform at a safe level

v. Avoids bumps and uneven surfaces

vi. Identifies and maintains proper distances from energized power lines

e. Other skills recommended by the manufacturer, OSHA or are otherwise deemed necessary for the safe operation of the lift.

4. Initial training does not require that an employee be trained in each category. The intention is that prior to an employee operating a lift that they receive competency verification on that category of equipment.

5. Each company on site must retain records of classroom and competency verifications and be able to produce these records on request.

6. Aerial platform lift training must be refreshed every three (3) years. Classroom and competency verifications may be refreshed on cycles separate from each other as long as they are, respectively, within the three (3) year cycle.

7. Retraining is mandatory if an employee performs in a manner that brings into question their ability to safely operate the lift.

IX. REFERENCES

29 CFR 1910.67

REVISION DATE	REVIEW DATE	REVISION NUMBER	REVISION COMMENTS	AUTHOR
14OCT2016	14OCT2017	1	Created the document	Bill Oswald
14NOV16	14NOV16	2	EDITS	K Rodriguez

STRATEGIC
CONSTRUCTION SOLUTIONS

HSE MANUAL

SECTION #HSC 022

Rigging Material Handling Policy

Revision 2_12OCT2016

I. SCOPE

1. Strategic Construction Solutions recognizes the benefits of a safe and healthy work environment. The purpose of this training program is to ensure a safe and incident free lifting operation.
2. Strategic Construction Solutions 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. Contractors will supply a competent person with authority over all rigging and hoisting operations they perform. The contractor 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.
3. When work is performed on a non-owned or operated site, the operator's program shall take precedence, however, this document covers Strategic Construction Solutions employees and contractors and shall be used on owned premises, or when an operator's program doesn't exist or is less stringent.
4. Strategic Construction Solutions has implemented and will enforce the following work practices and procedures to assure that no employee will be exposed to hazards during rigging and hoisting operations.

II. KEY RESPONSIBILITIES

1. Strategic Construction Solutions Project Managers/Contract Mangers shall determine if this program is required for regulatory compliance on projects under their control. Contractor Management shall select a training facility or use an in-house qualified trainer to supply and document the training on rigging.
2. Contractor supervisors shall assist the Contractor managers in the tasks described above. The contractor supervisor shall verify that each of their employees have the proper training before being involved in rigging operations.
3. Only qualified and trained personnel can attach or detach lifting equipment to loads or lifting loads.

III. PROCEDURE

1. **General**
    a. Only "qualified riggers" are allowed to attach any loads to a lifting hook and only "qualified operators" are allowed to operate a crane while engaged in lifting operations.
2. **Material Handling**
    a. Rigging equipment shall be inspected to ensure it is safe. Rigging equipment for material handling shall be inspected by the crane and rigging contractor prior to use and on each shift and as necessary during its use to ensure that equipment is safe.
    b. Defective rigging and equipment shall not be used and shall be removed from service immediately.

c. Rigging equipment shall not be loaded beyond its recommended safe working load and load identification shall be attached to the rigging.

d. Rigging equipment not in use shall be removed from the immediate work area so as not to present a hazard to employees.

e. Tag lines shall be used unless their use creates an unsafe condition

f. Latches will be in place on all hooks, eliminating the hook throat opening. Hooks on overhaul ball assemblies, lower load blocks, or other attachment assemblies shall be a type that can be closed and locked, eliminating the hook throat opening. Alternatively, an alloy anchor type shackle with a bolt, nut, and retaining pin may be used.

g. All employees shall be kept clear of loads about to be lifted and of suspended loads. No employee shall be allowed under a suspended load.

3. **Training and Education**

a. Strategic Construction Solutions and Contractor employees shall display their competency in the following topics:

i. The selection of proper hardware (eye bolts, shackles, hooks, wire rope products, synthetic slings, chain slings, etc.) for the correct application (weight, hitches, angles, temperatures, center of gravity, etc.).

ii. The inspection of the selected hardware before, during and after the lift.

iii. The proper methods of securing the load, attaching the load to the hook, lifting the load, handling of the load during the movement of the load, and lowering and placement of load.

iv. The proper storage of the rigging equipment.

b. All employees shall re-certify their training on a four (4) year basis.

IV. References

CFR 1926.251

REVISION DATE	REVIEW DATE	REVISION NUMBER	REVISION COMMENTS	AUTHOR
11OCT2016	11OCT2017	1	Created the document	Bill Oswald
12OCT16	12OCT16	2	Revisions/Edits	K Rodriguez

HSE MANUAL

SECTION # HS C020

Crane Safe Operations Policy

Revision 2_12OCT2016

I. SCOPE

A. Strategic Construction Solutions is committed to providing a safe and healthy work environment for our employees. Strategic Construction Solutions has implemented this policy to manage the risks and control measures associated with Lifting and Hoisting Operations. Strategic Construction Solutions has adopted this program to ensure the Crane Operator is fully qualified and suitably prepared to assure the safety of employees.

B. Strategic Construction Solutions does not own or operate cranes or derricks but does hire third party companies to perform that service. This policy is designed to provide guidelines for mobile crane contractors to follow when on a Strategic Construction Solutions job site.

II. RESPONSIBILITIES

A. Project Manager/Construction Managers

1. The PM/CM is responsible for developing and maintaining the written lifting plans for specific projects. These plans are kept in the Site Project book.

B. Crane Operator

1. The Crane Operator is designated as qualified and as the Competent Person in authority over all assembly, disassembly and hoisting operations.

III. PROCEDURE

Strategic Construction Solutions has implemented and will enforce the following work practices and procedures to assure that no employee will be exposed to hazards during crane hoisting operations:

A. Crane Contractor will comply with the manufacturer's 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.

B. Rated load chart capacities, recommended operating speeds, special hazard warnings, or instruction, will be conspicuously posted on all equipment. Instructions or warnings affixed by the manufacture will be visible to the operator while he is at his control station or cab and operators manual will be readily available in the cab.

C. Hand signals to crane and derrick operators will be those prescribed by the applicable ANSI standard for the type of crane in use. An illustration of the signals will be posted at the job site or on the crane.

D. The crane operator 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. If any deficiency is identified, an immediate determination must be made by the competent person as to whether it constitutes a safety hazard. If the deficiency is determined to constitute a safety hazard, the equipment must be taken out of service until it has been corrected.

E. Upon inspection of manufacturer’s safety devices, if a safety device is found to be inoperative or malfunctioning, the equipment shall be taken out of service until the devices are working correctly again in order to put the equipment back into service.

F. Crane Contractor will maintain a crane and its accessories in a condition which will not endanger an operator or other employees.

    1. A thorough, annual inspection of the hoisting machinery will be made by a private third party agency recognized by the U.S. Department of Labor. The Strategic Construction Solutions will maintain a record of the dates and results of inspections for each hoisting machine and piece of equipment.

G. 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.

H. A portable dry powder fire extinguisher with not less than 10 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.

I. For power lines rated 50 kV or below, minimum clearance between the power lines and any part of the crane or load will be 10 feet.

J. The equipment operation manual provided by the crane manufacturer, matching the serial number of crane, will be readily accessible for the Crane Operator‘s reference in the cab of the crane at all times.

K. 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.

    1. Management of Change will be implemented for modified equipment – reference TF 155 Management of Change Policy

L. All crawler, truck, or locomotive cranes in use will meet the applicable requirements for design, inspection, construction, testing, maintenance, and operation as prescribed in the ANSI B30.5-1968, Safety Code for Crawler, Locomotive, and Truck Cranes. Certification records which include the date of inspection, the signature of the person who performed the inspection and the serial number, or other identifier, of the crane which was inspected shall be made monthly on critical items in use such as brakes, crane hooks, and ropes.

IV. CRANE OPERATOR REQUIREMENTS AND QUALIFICATIONS

A. 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.

B. 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:

    1. 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.

    2. Be able to read and understand signs, labels, and instruction manuals.

    3. They will be able to distinguish colors, regardless of position of colors, if color differential is required for operation.

4. The Operators hearing, with or without hearing aid, must be adequate for a specific operation.
5. Have effective use of all 4 (four) limbs.
6. Be of a height sufficient to operate the controls and to have an unobstructed view over the controls into the work area.
7. Be free of known convulsive disorders and episodes of unconsciousness. If an operator or trainee is found to show evidence they are subject to seizures or loss of physical control will be sufficient reason for disqualification.
8. Have coordination between eyes, hands, and feet.
9. They will have sufficient strength, endurance, agility, coordination, and speed of reaction to meet the demands of equipment operation.
10. They will have normal depth perception, field of vision, reaction time, manual dexterity, coordination, and no tendencies to dizziness or similar undesirable characteristics.
11. Evidence of physical defects or emotional instability which could render the operator or trainee a hazard to their self or others, or could interfere with their safe performance may be sufficient cause for disqualification.

C. An employee assigned to operate a crane will have his or her ability to meet these requirements verified not less than every 3 (three) years.

D. The Contract Company Crane Forman will ensure that an employee has adequate knowledge of, and is capable of operating cranes or derricks before assigning an employee to a crane. The Crane Contractor will limit the use of a crane to:

1. Only employees who have been trained and qualified to operate the type crane to which he or she is assigned
2. A trainee under the direct supervision of a designated mentor
3. Authorized maintenance personnel during the performance of their duties

E. Employees, *except* trainees, or maintenance personnel, will pass qualification test before operating a crane.

F. An operator will report any defects of a crane to his or her supervisor.

G. An unauthorized employee will not enter a crane cab.

H. An unauthorized employee will not ride on any exterior part of a crane.

I. An employee will remain clear of equipment at all times unless the employee is operating the equipment.

J. The Local Crane Foreman will assure that a prospective operator, before assignment as an operator of a crane, has been trained in all of the following areas:

1. Capabilities of the equipment and attachments
2. Purpose, use, and limitations of the controls
3. How to make daily inspections of the equipment
4. Practice in operating assigned equipment through the functions necessary to perform the job
5. A review of OSHA standards and Strategic Construction Solutions rules and regulations applicable to crane operation

6. NCCCO certified to operate the capacity of crane that they will be operating

K. The Local Crane Foreman will determine the ability of an employee before authorizing the employee to operate a crane. This determination will be based on the employee‘s:

1. Operating ability
2. Knowledge of the equipment
3. Knowledge of OSHA standards, Strategic Construction Solutions rules and regulations applicable to crane operation
4. Knowledge of daily inspections of the equipment

V. GENERAL CRANE OPERATIONS

A. 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.

B. 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.

C. The operator must ensure that ground conditions are firm, drained, and graded to a sufficient extent so that , in conjunction (if necessary) with the use of supporting materials, the equipment manufacturer’s specifications for support and degree of level are met.

D. Prior to operation of the equipment the operator must erect control lines, warning lines, or similar barriers to prevent employees from entering the swing radius hazard zone of the rotating superstructure.

E. No minor under 18 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.

F. 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.

G. 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.

H. An equipment operator will not leave equipment unattended unless the operator is notified by the appointed individual that it is safe to do so. Before leaving, the operator will do all of the following:

1. Land any attached load
2. Disengage clutches
3. Put the controls in the off or neutral position
4. Open the main power switch or stop the engine
5. Engage manual locking devices such as house swing and boom hoist, etc. in the absence of automatic holding equipment. To ensure the crane is secured against accidental motion.

I. When there is a warning sign or lockout/tagout on the switch or engine starting controls, an equipment operator will not close the switch or start operations until the sign or lock has been removed by the person who placed it there.

J. Before closing the main power 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.

K. If power fails during operation, an equipment operator will do all of the following:

1. Set all brakes and locking devices
2. Move all clutch or other power controls to the off or neutral position
3. Communicate with the responsible supervisor in charge of equipment operations
4. If practical, and applicable, land the load under brake control

L. An operator will respond to signals only from the designated signalman using appropriate signals, except where voice communications equipment is used.

1. 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.
2. A signal person must be used if the load travel or point of load placement is not in full view of the operator, due to site specific safety concerns, or it is determined that it is necessary by the operator or person in charge of the lift.

M. A crane will be equipped with an audible signaling device which will be actuated before traveling without a signalperson and intermittently during travel. When moving a crane, the following signals will be used:

1. Stop 1 audible signal
2. Go ahead, 2 audible signals
3. Back up, 3 audible signals

N. The operator, or someone especially designated, will properly lubricate all working parts of the crane.

O. When lowering a load, the operator will proceed carefully and make sure the load is under safe control.

P. When leaving the cage or cab the operator will throw all controllers to the “OFF” position and open the main switch.

Q. Tools, oil cans, waste, extra fuses, and other necessary articles will be stored in the tool box or other area, and will not be permitted to lie loose in or about the cab.

R. The Local Crane Foreman will insure that operators are familiar with the operation and care of the fire extinguishers provided.

S. A legible load rating chart will be provided at the operator station showing not less than the following information for cranes:

1. 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 is provided by the manufacturer, alternate ratings will be provided in addition.
2. Where structural competence limits the ratings, such information will be shown on the chart.

T. When assembling or disassembling a crane a competent and qualified person must direct the work utilizing the manufacturer’s instructions and prohibitions.

VI. ASSEMBLY AND DISABLING OF THE CRANE

A. The Crane Operator is designated qualified and as the Competent Person in authority over all assembly, disassembly and hoisting operations.

B. Assembly/disassembly will be directed by the crane operator and fill the role of "A/D director".

C. Where the all of Strategic Construction Solutions assembly/disassembly is being performed by only one person, that person must meet the criteria for both a competent person and a qualified person.

D. The A/D director must understand the applicable assembly/disassembly procedures.

E. The A/D director must review the applicable assembly/disassembly procedures immediately prior to the commencement of assembly/disassembly unless the A/D director understands the procedures and has applied them to the same type and configuration of equipment (including accessories, if any).

F. Before commencing assembly/disassembly operations, the A/D director must ensure that the crew members understand all of the following:

1. Their tasks
2. The hazards associated with their tasks
3. The hazardous positions/locations that they need to avoid

G. Before a crew member goes to a location that is out of view of the operator and is either in, on, or under the equipment, or near the equipment (or load) where the crew member could be injured by movement of the equipment (or load), the crew member must inform the operator that he/she is going to that location.

H. When the operator knows that a crew member went to a location that is out of view the operator must not move any part of the equipment (or load) until the operator is informed in accordance with a pre-arranged system of communication that the crew member is in a safe position.

I. When pins (or similar devices) are being removed, employees must not be under the boom, jib, or other components, except:

J. Where the employer demonstrates that site constraints require one or more employees to be under the boom, jib, or other components when pins (or similar devices) are being removed, the A/D director must implement procedures that minimize the risk of unintended dangerous movement and minimize the duration and extent of exposure under the boom. (See Non-mandatory Appendix B of this subpart for an example.)

K. During all phases of assembly/disassembly, rated capacity limits for loads imposed on the equipment, equipment components (including rigging), lifting lugs and equipment accessories, must not be exceeded for the equipment being assembled/disassembled.

L. The A/D director supervising the assembly/disassembly operation must address the specific hazards associated with the operation, which include:

1. Site and ground conditions must be adequate for safe assembly/disassembly operations and to support the equipment during assembly/disassembly.
2. The size, amount, condition and method of stacking the blocking must be sufficient to sustain the loads and maintain stability.
3. When used to support lattice booms or components, blocking must be appropriately placed to:

a) *Protect the structural integrity of the equipment, and*

b) *Prevent dangerous movement and collapse.*

M. The selection of components, and configuration of the equipment, that affect the capacity or safe operation of the equipment must be in accordance with:

1. The Manufacturer instructions, prohibitions, limitations, and specifications in regards to the selection of components
2. Where these are unavailable, a registered professional engineer familiar with the type of equipment involved must approve, in writing, the selection and configuration of components; or
3. Approved modifications that meet governmental requirements

N. Upon completion of assembly, the equipment must be inspected to ensure compliance with procedures outlined in this policy for post-assembly inspection requirements).

VII. ATTACHING AND HOLDING A LOAD

A. 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.

B. Before starting to hoist, the operator will make sure:

1. The hoist rope is not kinked
2. The multiple part lines are not twisted around each other
3. The hook is not swinging when brought over the load

C. An employee will not be permitted to pass or stand under a suspended load.

D. An operator will not load a crane beyond the rated load.

E. Mobile cranes, auto cranes and pickers shall establish a safe buffer zone for employees working with in the fall zone of suspended loads. Buffer zones should be established during JSA and pre-job safety meetings or as task and site conditions change. All affected employees shall be made aware of buffer zones prior to the start of the job or task.

1. Fall zone means the area (including but not limited to the area directly beneath the load) in which it is reasonably foreseeable that partially or completely suspended materials could fall in the event of an accident.

F. For non-essential personnel a buffer zone of 30 foot minimum should be established. Non-essential personnel should not be allowed to enter a fall zone during lifting and hoisting of suspended loads until the load has been safely lowered below the riggers waist.

G. Essential personnel includes but is not limited to; Employees engaged in hooking, unhooking or guiding a load (Designated Signal Person etc.); or employees engaged in the initial attachment of the load to a component or structure

VIII. MOVING A LOAD

A. In moving a load, an operator will avoid sudden acceleration and deceleration movement of the boom which would cause a swinging action by the load.

B. An operator will not move a load or hook if an employee is on it.

C. A load will be secured and balanced before it is lifted more than 6 (six) inches.

D. 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 either single or multiple line reeving.

E. A load will not be moved in a manner to contact obstructions.

F. 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.

G. A tag line will be used on all single crane lifts.

H. Floats or pads secured to outriggers will be used at all times as per manufacturer's specification unless manufacturer allows the nonuse of outriggers. A wood or steel block used to support an outrigger will be:

1. Of such size as to prevent shifting and toppling of the load
2. Of such strength to resist crushing
3. Free of defects such as knots, cracks, rust, broken welds, and dents which could affect its ability to support the load.

I. Before moving with a load, a designated employee will determine:

1. Position to carry the load
2. Boom location
3. Ground conditions
4. Travel route
5. Speed of movement
6. Location of overhead wires

J. A crane, while moving from one location to another, will have:

1. The boom carried in line with the direction of movement.
2. The superstructure secured against rotation or the boom on a dolly.
3. An empty hook restrained against movement.
4. A crane with or without a load will not travel with the boom at a height that it may bounce back over the cab.
5. A crane operating at a fixed radius will have the boom-hoist pawl or other positive locking device engaged.

IX. CRANE OPERATIONS NEAR A POWER LINE

A. Before beginning operations near power lines a hazard assessment of the work site must be conducted to determine if any part of the equipment, load line or load, if operated up to the equipment's maximum working radius in the work zone, could get closer than 20 feet to a power line.

B. If so one of the following options must be met;

1. *Option (1) - De-energize and Ground. Confirm from line owner/operator that power line has been de-energized and visibly grounded at the work site.*

2. *Option (2) - 20 foot clearance. Ensure no part of the equipment, load line, or load gets closer than 20 feet to the power line*
3. *Option (3)* – Table "A" clearance. Determine the line's voltage and minimum approach distance permitted under Table A

Table A – Minimum Clearance Distances

Voltage (nominal, kV, alternating current)	Minimum clearance distance (feet)
Up to 50	10
Over 50 to 200	15
Over 200 to 350	20
Over 350 to 500	25
Over 500 to 750	35
Over 750 to 1,000	45
Over 1,000	(As established by the utility owner/operator)

C. Any overhead wire will be considered an energized line until a representative of the owner or utility has checked and indicated otherwise.

D. Before any crane operation is started near a power line the owner or utility representative will be notified.

X. REFUELING

A. A crane fuel tank will not be refueled while the engine is running.

B. 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.

C. Smoking or other sources of sparks and flame will be not less than 25 feet from a refueling operation.

D. During the dispensing and handling of flammable liquids (Gasoline, Diesel, etc.), proper bonding (metallic bond wire or metal to metal contact between two conductors) and grounding procedures must be used to control static electricity.

XI. INSPECTION RECORDS AND INSPECTOR

A. The inspection of a crane will be made by an authorized and competent employee of the crane contractor or an outside service.

B. The crane contractor inspection records will be maintained of results of monthly crane inspections including brakes, hooks, and ropes and semiannual inspections of hydraulic relief pressure valves.

C. The crane contractor inspection records shall include items checked, results of inspection, name and signature of inspector, and shall be retained for a minimum of 3 (three) months.

XII. INITIAL INSPECTIONS

A. A crawler, locomotive, or truck crane will be inspected prior to initial use and after modification to insure compliance with this part.

XIII. FREQUENT INSPECTIONS

A. A crane will be given the following daily to monthly visual inspections by the crane contractor:

1. Control mechanisms for wear and malfunction, each daily use
2. Deterioration or leakage of air or hydraulic systems, each daily use
3. Hydraulic system for oil level, each daily use
4. Hydraulic hoses and fittings for leaks and deterioration
5. All running ropes that can reasonably be expected to be used during the day's operation, each daily use
6. Lifting hooks for deformation or cracks. A hook having a crack, a throat opening of more than 5% of normal not to exceed ¼ " or any visibly apparent bend or twist from the plane of an unbent hook will be replaced
7. Rope reeving in conformance with the crane manufacturer's specifications
8. Electrical apparatus for malfunction, wear, dirt, and moisture accumulations
9. Tires for specified pressure
10. A crane will be given a visual inspection not less than monthly for malfunction of safety devices.

XIV. PERIODIC INSPECTIONS

A. A crane will be given the following monthly to yearly inspections by the crane contractor:

1. Structural members and boom for cracks, deformation, and corrosion
2. Bolts and rivets for tightness
3. Sheaves, drums, pins, bearings, shafts, gears, rollers, locking and clamping devices for wear, distortion, and cracks
4. Power sources for performance
5. Brake & clutch system parts, linings, pawls, & ratchets for excessive wear
6. Load, boom angle, and other indicators for inaccuracies over their full range
7. Travel, steering, braking, and locking devices for malfunction
8. Tires for wear or damage
9. Radiators and oil coolers for leakage, blockage of air passages, and improper performance
10. Rust on piston rods and control valves
11. Oil strainers and filters for debris and metal particles

XV. WIRE ROPE INSPECTION

A. Running ropes in continuous service will have an inspection at least once a month by the crane contractor. The inspection will include:

1. Measurement of diameter of rope
2. Count of broken wires in 1 lay when concentrated

3. End connections for broken wires
4. Corrosion, kinking, crushing, cutting, or other conditions affecting the capability of the rope
5. Cracked, bent, worn, corroded, or improperly applied end connectors

B. 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.

C. Inspection of a non-rotating type rope will include the determination that the wires are not broken or worn within the rope.

D. A rope which has been idle more than 1 (one) month will be given a complete *periodic* inspection before being placed in service.

XVI. OCCASIONAL AND OUT OF SERVICE INSPECTIONS

A. A crane which has been idle more than 1 (one) month, but less than 6 (six) months will receive a frequent inspection before being placed in service.

B. A crane, which has been idle more than 6 (six) months, will receive a periodic inspection before being placed in service.

C. A standby crane will be inspected at least semiannually. Frequent inspection

XVII. TESTS FOR CRANES

A. A crane, prior to initial use and after modification, will be given an operational test to insure compliance by the crane contractor, including the following:

1. Load hoisting and lowering mechanisms
2. Boom hoisting and lowering mechanisms
3. Travel mechanism
4. Safety devices
5. Boom extension mechanisms for a mobile hydraulic crane

B. A test load will not exceed 110% of the rated load at any working radius.

C. Records of operational crane tests and load tests will be made available.

XVIII. GENERAL MAINTENANCE

A. The Crane Contractor will establish and maintain a preventative maintenance program under the supervision of an authorized and trained employee or outside service.

B. Before adjustments and repairs to a crane are started, the following steps will be taken:

1. The crane will be placed where it does not interfere with other operations.
2. 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.
3. The power plant will be disconnected, locked out, or made safe by other means.
4. The boom will be lowered to the ground or otherwise secured against dropping.

5. Hydraulic oil pressure from all hydraulic circuits will be relieved before loosening or removing hydraulic components of a mobile hydraulic crane.
6. The load block will be lowered to the ground or otherwise secured against dropping, except when operation is necessary for the adjustment.

C. 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.

D. Hazardous conditions disclosed by the inspection requirements will be corrected before operation of the crane is resumed.

E. Adjustments will be maintained to assure correct functioning of such components as operating mechanisms, safety devices, control systems, power plants, brakes, and clutches.

F. 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.

G. 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.

XIX. WIRE ROPE MAINTENANCE

A. Running wire ropes will be replaced when they show 6 (six) random broken wires in 1 (one)rope lay or 3 (three) broken wires in 1 (one) 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 more than 5%.

B. A standing wire rope will be replaced if it has more than 2 (two) broken wires in 1 (one) lay section beyond an end connection or 1 (one) broken wire at an end connection.

C. A wire rope having more than 1 broken wire at the entrance of a wedge socket will be re-socketed.

D. Wire rope will be stored in a manner to prevent damage or deterioration and handled in a manner to prevent kinking or twisting.

E. Before cutting preformed rope, 1 seizing at least ≥ the rope diameter will be placed on each side of the cut to prevent un-laying of the strands.

F. During installation, wire rope will not be dragged in dirt or around sharp objects.

XX. REFERENCES

29 CFR 1926.651

29 CFR 1926.652

REVISION DATE	REVIEW DATE	REVISION NUMBER	REVISION COMMENTS	AUTHOR
10/07/2016	10/07/2017	1	created document	Bill Oswald
12OCT16	12OCT17	2	Revisions/Edits	K Rodriguez

Date:	
Location of Lift:	
Description of Object to Be Raised:	
Lifting Equipment Make & Model:	
Lifting Equipment Rated Capacity:	tons

Load		
Total Weight of Lift:		lbs/tons
Weight of Rigging:		lbs/tons
How Was Weight of Object Obtained?		lbs/tons
If lift is an existing item, weight calculations will include modifications, liquid remaining, insulation, sludge, scale, sediment, etc.		

Set Up		
Boom Angle:		degrees
Distance From Pin:		feet
Crane Capacity at Set Up Configuration:		lbs/tons
Load Including Rigging is What Percent of Rated Crane Capacity:		%

Equipment and Lift Relationship		
Maximum Operating Radius		feet
Planned Operating Radius		feet
Allowable Load (from load chart)		lbs/tons
Ratio of Lift to Allowable Load		%
Clearance between Boom and Load		feet/inches
Clearance to Existing Facilities		feet
Clearance to Energized Power Lines		feet

Ground Stability						
Surface Type		Bare Ground		Asphalt		Concrete
Surface Bearing Capacity						tons per square foot
Mats will be used on all surfaces; additional cribbing may be required						
Size and Number of Supports						
Do Underground Installations Need Special Treatment		Yes		No		
Notes:						

Weather								
Lift **Will Not** Proceed if Wind Exceeds								mph
Precipitation Type			Rain		Snow		None	
Cloud Type Overcast			Clear					
Lift Conducted		During Daylight			with Artificial Light			

Lift Area Restriction				
Area Barricaded		Yes		No
Equipment swing Radius Barricaded		Yes		No
Warning Signs Required		Yes		No
Unnecessary Personnel Removed From Area		Yes		No
Energized Lines Isolated		Yes		No

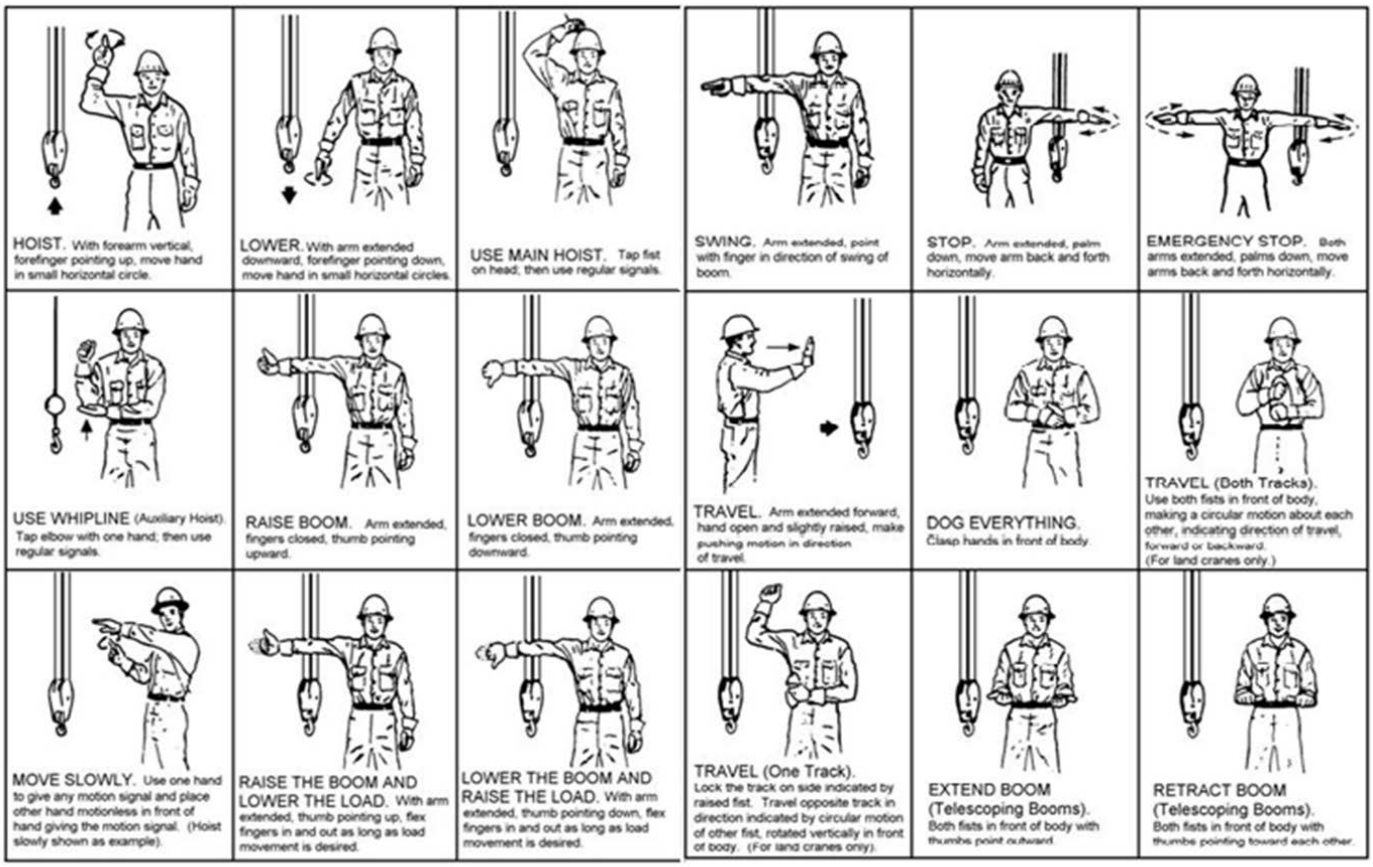
Communication						
Operator View is Unobstructed (pick to set)			Yes		No	
Communication Used		Hand Signals		Radio		Other
Explain Other:						

Pre-lift Safety Meeting	
Type of Critical Lift	Load Exceeds 75% of Load Chart Capacity for Lifting Equipment
	Two or More Cranes/Booms Required for Lift
	Specialized Hoisting Rigging Equipment Used
	Load Suspended or Moved Over Loaded Lines
	Other (specify)
Items Discussed:	

Signatures	
Crane Operator	
Crane Rigger	
Crane Oiler	
Signal Person	
Crane Inspected By	
Rigging Inspected By	
Client Representative	
Designated Lift Leader	

Lift area diagram:

Hand Signals for cranes.



API Approved Standardized Hand Signals.

STRATEGIC
CONSTRUCTION SOLUTIONS

HSE MANUAL

SECTION #HSC 024

Signal Person Policy

Revision 2_12OCT2016

I. SCOPE

1. Strategic Construction Solutions recognizes the benefits of a safe and healthy work environment. The purpose of this training program is to ensure a safe and incident free lifting operation.
2. Strategic Construction Solutions policy applies to company employees and contractors who provide signals to operators of cranes or other operators of lifting and hoisting equipment. This policy shall be used on owned premises, or when a customer or operator's program doesn't exist or is less stringent.
3. When work is performed on a non-owned or operated site, the operator's program shall take precedence, however, this document covers Strategic Construction Solutions employees and contractors and shall be used on owned premises, or when an operator's program doesn't exist or is less stringent.

II. TRAINING AND QUALIFICATIONS

1. Strategic Construction Solutions Project Managers/Contract Mangers shall determine if this program is required on projects under their control. Contractor employees shall be trained and meet all qualification requirements before being allowed to provide signals. The contractor company will train each signal person in the proper use of signals applicable to the use of the equipment. Whenever training is required under OSHA Subpart CC – 1926.1431, the company will provide the training at no cost to the employee.
2. Signal persons are considered qualified if he or she:
    a. Knows and understands the type of signals used. If hand signals are used, the signal person must know and understand the Standard Method for hand signals.
    b. Competent in the application of the type of signals used.
    c. Understands the operations and limitations of the equipment, including the crane dynamics involved in swinging, raising, lowering and stopping loads, and in boom deflection from hoisting loads.
    d. Passes an oral or written test and a practical test covering items A through C.
3. Employees will be deemed qualified by one of the following,
    a. **Third party** qualified evaluator — signal person has documentation from a third party qualified evaluator showing that he or she meets the qualification requirements.
    b. Strategic Construction Solutions qualified evaluator (**not a third party**) — Strategic Construction Solutions 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; likewise Strategic Construction Solutions cannot rely upon other company evaluations.
    c. Qualified evaluator (**third party**) means an entity that, due to its independence and expertise, has demonstrated that it is competent in accurately assessing whether individuals meet the qualification requirements in this subpart for a signal person.
    d. Contractor qualified evaluator (**not a third party**) means a person employed by the signal person's employer who has demonstrated that he/she is competent in accurately

assessing whether individuals meet the qualification requirements in this subpart for a signal person.

4. Evaluator assesses the individual and determines if the individual meets the qualification requirements and provides documentation of that determination. Strategic Construction Solutions will require the contract company to provide documentation of the signal person's qualifications is available at the worksite, either in paper form or electronically. The documentation must specify each type of signaling (e.g., hand signals, radio signals, etc.) for which the signal person is qualified.
5. If subsequent actions by the signal person indicate that the individual does not meet the qualification requirements the employer must not allow the individual to continue working as a signal person until re-training is provided and a re-assessment is made and confirms that the individual meets the qualification requirements.

III. REQUIREMENTS

1. A signal person will be required when any of the follow conditions exist:
    a. The point of operation, meaning the load travel or the area near or at load placement, is not in full view of the operator
    b. The operator's view is obstructed in the direction the equipment is traveling
    c. Either the operator or the person handling the load determines that a signal person is needed because of site-specific safety concerns
2. **Hoisting Personnel**
    a. Signal persons will apply the following work practices when participating in hoisting operations of personnel.
        i. Remain in direct communication with employees being hoisted
        ii. Attend Pre-lift meeting with the equipment operator, employees being hoisted, and person responsible for the task to be performed
        iii. Be stationed at the shaft opening when employees are being hoisted into and out of drill shafts that are up to and including 8 (eight)feet in diameter
    b. All applicable regulatory requirements of OSHA Subpart CC - 1926.1431 Hoisting Personnel and the Mine Safety and Health Administration (MSHA) regulations shall be applied when workers are to be hoisted by equipment and in and out of mine shafts.
3. **Types of Signals**
    a. Signals to operators must be by hand, voice, audible, or new signals established prior to the operation
4. **Hand Signals**
    a. When using hand signals, the Standard Method must be used (see Attachment 1). *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. When using non-standard hand signals, the signal person, operator, and lift director (where there is one) must contact each other prior to the operation and agree on the non-standard hand signals that will be used.

b. Hand signal charts must be either posted on the equipment or conspicuously posted in the vicinity of the hoisting operations

5. **Voice Signals additional requirements**

a. Prior to beginning operations, the operator, signal person and lift director (if there is one), must contact each other and agree on the voice signals that will be used. Once the voice signals are agreed upon, these workers need not meet again to discuss voice signals unless another worker is added or substituted, there is confusion about the voice signals, or a voice signal is to be changed. Each voice signal must contain the following three elements, given in the following order: function (such as hoist, boom, etc.), direction; distance and/or speed; function, stop command. The operator, signal person, and lift director (if there is one), must be able to effectively communicate in the language used.

6. **Radio, telephone or other electronic transmission of signals**

a. Devices used to transmit signals must be tested on site before beginning operations to ensure that the signal transmission is effective, clear, and reliable. The operator's reception of signals must be by a hands-free system.

b. Signal transmission must be through a dedicated channel, except:

i. Multiple cranes/derricks and one or more signal persons may share a dedicated channel for the purpose of coordinating operations

ii. 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

7. **New Signals**

a. New signals other than hand, voice, or audible signals may be used where the employer demonstrates that:

i. The new signals provide at least equally effective communication as voice, audible, or Standard Method hand signals

ii. The new signals comply with a national consensus standard that provides at least equally effective communication as voice, audible, or Standard Method hand signals.

b. 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 and given from the operator's direction perspective. 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, the operator must safely stop operations. Operations must not resume until the operator and signal person agree that the problem has been resolved.

c. Only one person may give signals to a crane/derrick at a time unless a safety problem exists then the operator can be given the stop or emergency stop signal by anyone or the signal person.

d. Where a signal person is in communication with more than one crane/derrick, a system must be used for identifying the crane/derrick each signal is for, as follows:

i. for each signal, prior to giving the function/direction, the signal person must identify the crane/derrick the signal is for, or

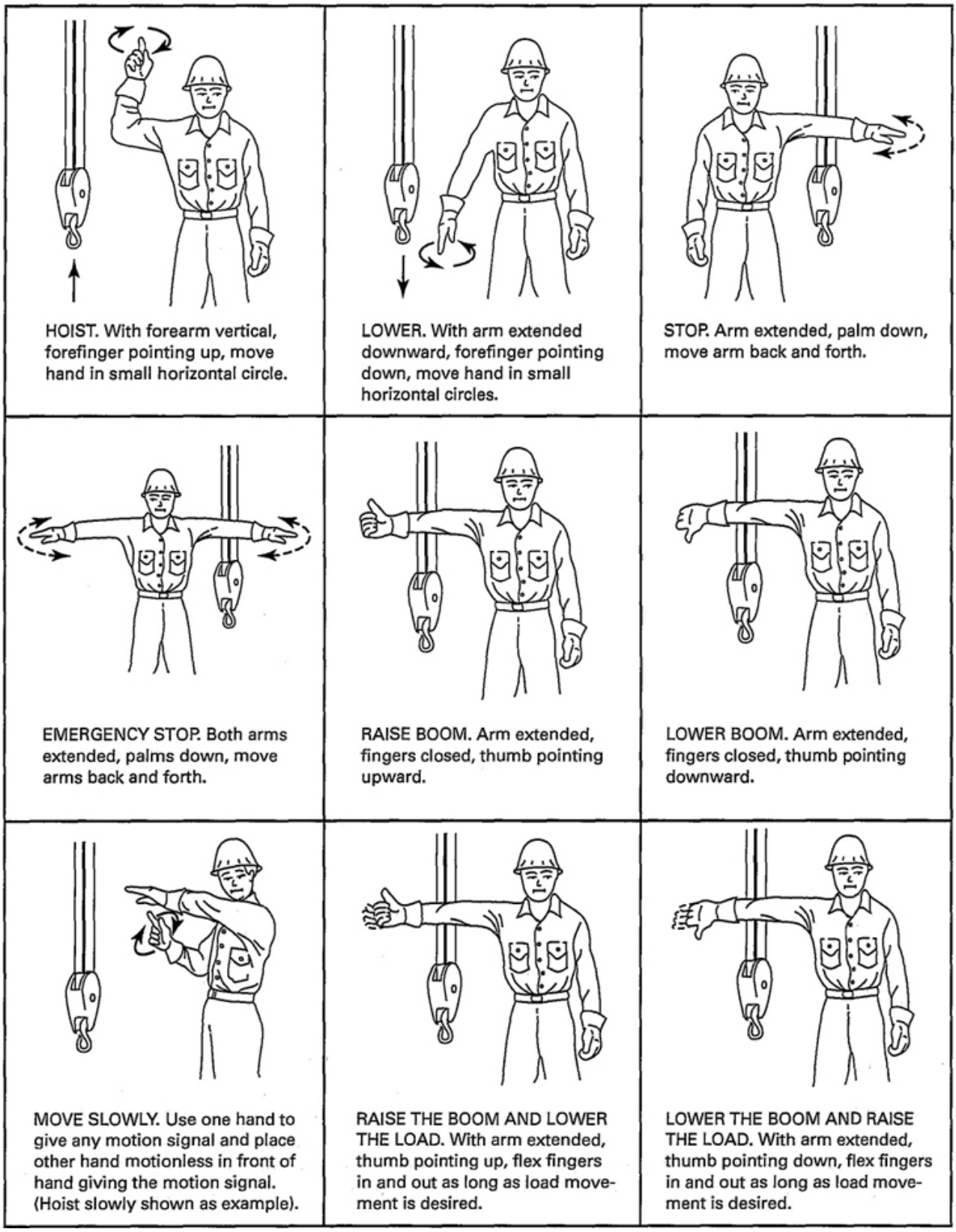
ii. Must use an equally effective method of identifying which crane/derrick the signal is for.

IV. References

CFR 1926.1431

REVISION DATE	REVIEW DATE	REVISION NUMBER	REVISION COMMENTS	AUTHOR
11OCT2016	11OCT2017	1	Created the document	Bill Oswald
12OCT16	12OCT17	2	Revisions/Edits	K Rodriguez

Attachment 1- ASME Standard Hand Signals



HOIST. With forearm vertical, forefinger pointing up, move hand in small horizontal circle.

LOWER. With arm extended downward, forefinger pointing down, move hand in small horizontal circles.

STOP. Arm extended, palm down, move arm back and forth.

EMERGENCY STOP. Both arms extended, palms down, move arms back and forth.

RAISE BOOM. Arm extended, fingers closed, thumb pointing upward.

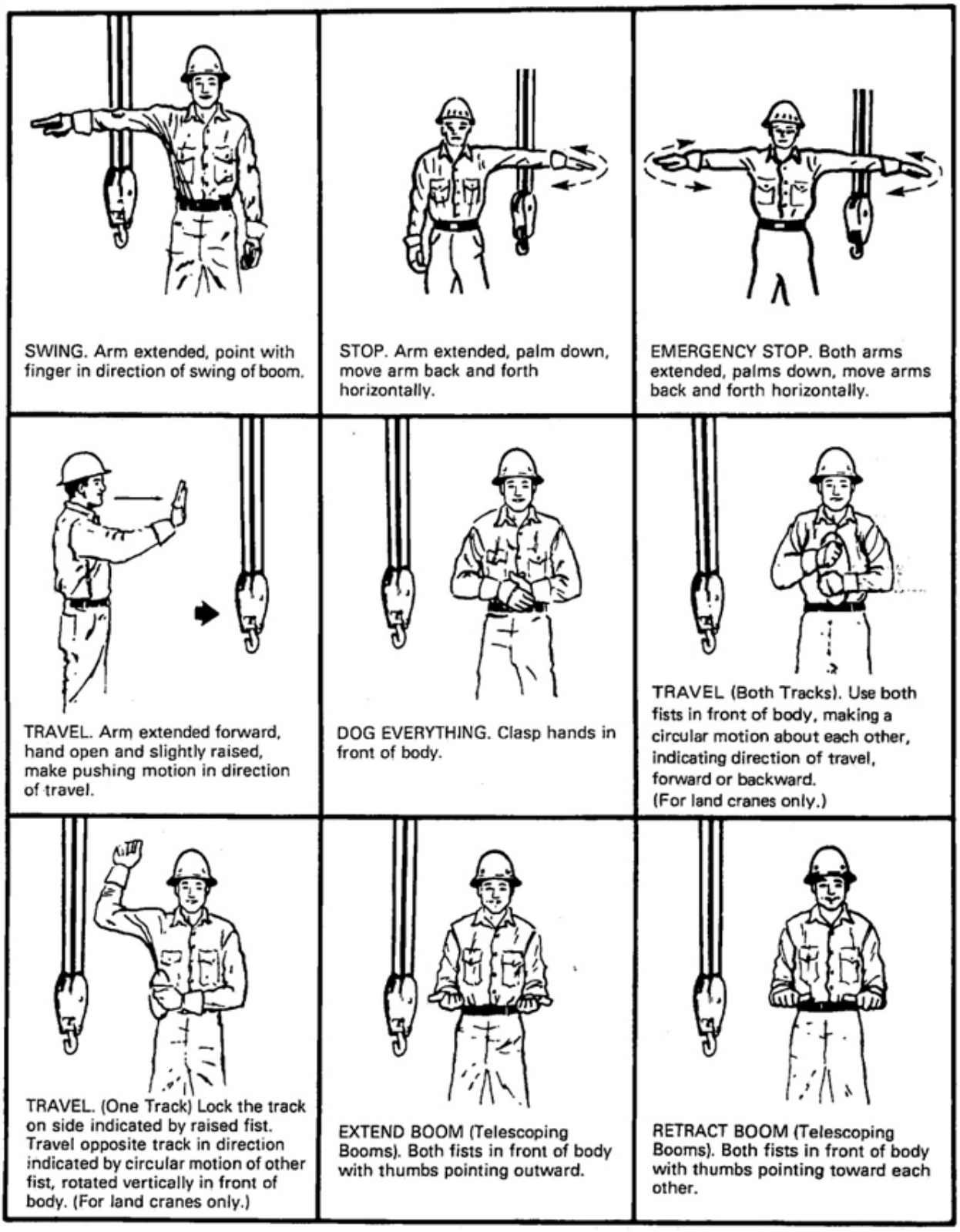
LOWER BOOM. Arm extended, fingers closed, thumb pointing downward.

MOVE SLOWLY. Use one hand to give any motion signal and place other hand motionless in front of hand giving the motion signal. (Hoist slowly shown as example).

RAISE THE BOOM AND LOWER THE LOAD. With arm extended, thumb pointing up, flex fingers in and out as long as load movement is desired.

LOWER THE BOOM AND RAISE THE LOAD. With arm extended, thumb pointing down, flex fingers in and out as long as load movement is desired.

Attachment 1- ASME Standard Hand Signals



SWING. Arm extended, point with finger in direction of swing of boom.

STOP. Arm extended, palm down, move arm back and forth horizontally.

EMERGENCY STOP. Both arms extended, palms down, move arms back and forth horizontally.

TRAVEL. Arm extended forward, hand open and slightly raised, make pushing motion in direction of travel.

DOG EVERYTHING. Clasp hands in front of body.

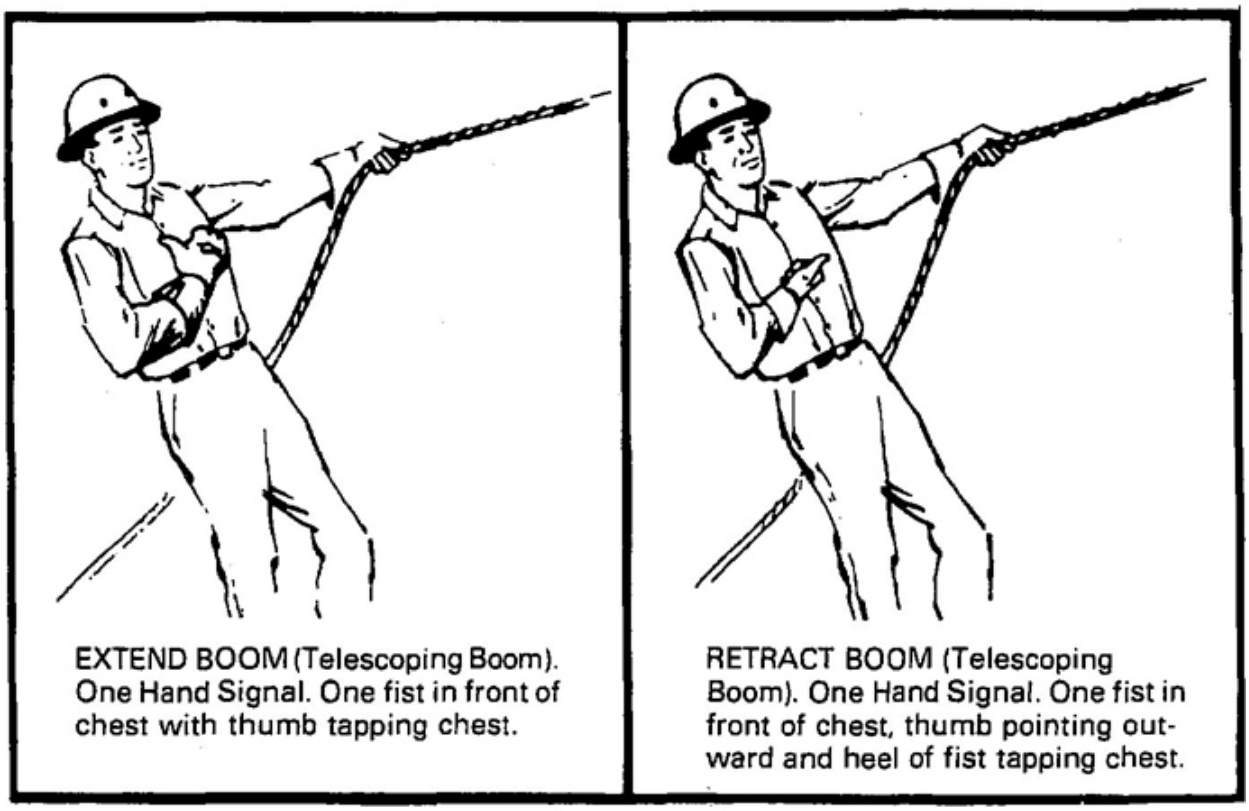
TRAVEL (Both Tracks). Use both fists in front of body, making a circular motion about each other, indicating direction of travel, forward or backward. (For land cranes only.)

TRAVEL. (One Track) Lock the track on side indicated by raised fist. Travel opposite track in direction indicated by circular motion of other fist, rotated vertically in front of body. (For land cranes only.)

EXTEND BOOM (Telescoping Booms). Both fists in front of body with thumbs pointing outward.

RETRACT BOOM (Telescoping Booms). Both fists in front of body with thumbs pointing toward each other.

Attachment 1- ASME Standard Hand Signals



EXTEND BOOM (Telescoping Boom). One Hand Signal. One fist in front of chest with thumb tapping chest.

RETRACT BOOM (Telescoping Boom). One Hand Signal. One fist in front of chest, thumb pointing outward and heel of fist tapping chest.

STRATEGIC
CONSTRUCTION SOLUTIONS

HSE MANUAL

SECTION #HS C025

Hot Work and Permit Guidelines Policy

Revision 2_14NOV2016

I. SCOPE

1. Strategic Construction Solutions recognizes the need to provide guidelines to ensure that appropriate measures have been taken to prevent fire and /or explosion during hot work activities being performed at areas not normally designed for hot work activities.
2. This standard applies to employees and other individuals (including temporary employees and contractor personnel) who work and/or are present in the workplace. Contract employees that have a hot work policy may use that policy as long as it meets or exceeds the protections provided in this guideline.

II. DEFINITIONS

1. **Hot work** – Work that has the potential of creating or becoming a source of ignition. This includes grinding, welding, thermal or oxygen cutting or heating, and other related heat or spark producing operations.
2. **Permit** – A document used to authorize hot work activity after necessary precautions have been taken to minimize the risk of adverse consequences associated with the work.
3. **Authorized Personnel** – Qualified persons who have been given the authority to approve and authorize hot work permits. The authorized personnel may delegate the responsibility for conducting the pre-hot work inspection to another qualified person but cannot delegate his/her accountability for the overall Safety of the work being performed.
4. **Qualified Personnel** – Individuals with the knowledge, training, and experience to recognize, evaluate, and ensure adequate control of the hazards associated with hot work.

III. PROCEDURE

1. **Required Areas**
    a. A hot work permit is required for hot work operations on or near operational processes or within 35 feet of flammable/combustible materials. Greater distances of up to 50 feet may be required where flammable gases or vapors may be present. Exceptions to the Hot Work Program may be allowed in areas designated as “fire safe”. A fire safe designated area is an area specifically designed for hot work, such as welding shops, which are free of exposed combustibles.
    b. Operational areas that have known, but not obvious, combustibles should be posted with signage requiring application of the Hot Work Permit.
    c. High hazard areas such as fuel storage areas or explosive magazines have statutory requirements that must be followed when conducting hot work operations.
    d. Areas that may require a Hot Work Permit include, but are not limited to:
        i. Within 100 ft. of powder magazine or explosive or blasting storage area
        ii. Dust collectors, ductwork, and other areas where rubber linings or combustible dust exists
        iii. Public commercial buildings, warehouses, assay labs
        iv. Above or adjacent to cable trays or electrical cables

v. Inside vessels or confined spaces

vi. Hot work on vehicle fuel system or fuel tank regardless of location

vii. Heavy equipment including haul trucks, shovels, drills, graders, dozers regardless of location where sparks or hot metal could contact combustible materials

viii. Within 35 ft. of:

a. Fuel storage areas or distribution lines

b. Battery storage or charging areas

c. Cooling towers

d. Oxygen storage areas

e. Sewer and septic systems

f. Conveyor belting

g. Tire storage areas

h. Mobile fuel and lubrication trucks

i. Storage/materials handling areas where combustible or flammable materials are present

2. **Training**

a. Individuals involved with hot work are trained in fire prevention and extinguisher use during initial training and refreshed annually. Additionally, individuals will be appropriately task trained for the work being conducted.

3. **Precautionary Measures**

a. Flammable and combustible materials within 35 ft. of hot work must be removed, covered with a fire-resistant/insulating material or otherwise protected. This includes combustible flooring and combustible debris on the floor.

b. Openings or cracks in the walls, floors, or ducts that are potential travel passages for sparks, heat and flames must be covered or otherwise protected.

c. A fire extinguisher of the appropriate size and type must be provided at the site in addition to the normal placement of fire extinguishers.

d. In cases where the combustibles cannot be removed to provide at least 35 ft. of separation or other requirement cannot be completed, a control method must be described in the Alternative Means of Control section of the permit. Alternative control measures must provide equal or greater precautions to prevent fires.

e. When working near smoke detectors, alarm sensors or sprinkler systems, do not deactivate the entire alarm or sprinkler system. Isolate the detectors, sensors or sprinkler heads in the affected area to prevent false alarms or sprinkler system activation. At the completion of the work, ensure the device(s) is (are) returned to normal service conditions

f. A Fire Watch with knowledge of incipient stage firefighting techniques must be appointed during performing hot work and for the duration 30 minutes after termination. Fire Watch is required when combustibles remain within 35 feet of the hot work and have not been controlled to eliminate the possibility of ignition. Each person assigned as Fire Watch must sign and date the permit.

NOTE: The work location must be assessed to determine where the fire risk may exist. A fire risk may result on the opposite side of a wall (or floor, etc.) due to heat transfer. Ensure that possible consequences are considered and that they are monitored by the Fire Watch as necessary to prevent a fire.

g. As the work progresses, periodic checks should be conducted to observe for fire, dust accumulation, adequate ventilation, atmospheric testing, or other hazardous conditions that could endanger the safety of the workers. If adverse conditions are observed, correct the hazards prior to continuing hot work. These checks should be made hourly, at a minimum.

h. Where there is a reasonable possibility of that flammable gases/vapors or excessive oxygen exist, atmosphere testing must be conducted by trained personnel as part of the permit process. Additionally, periodic checks should be conducted throughout the hot work process.

   i. Lower Explosive Limit (LEL) or Lower Flammable Limit (LFL) must be below 10%

   ii. Oxygen (O2) measurement must be between 19.5% and 23%

i. Containers holding flammable or combustible liquids or gasses must be purged, cleaned, and filled with inert liquid or gasses and tested to ensure that the LEL /LFL is below 10%

j. Do not conduct hot work operations until precautionary measures have been taken control the risk of unintended ignition.

4. **Permit Issuance**

a. Hot Work Permit process is initiated prior to beginning hot work by those who will be performing the work. Other precautionary policies must be considered in conjunction with hot work; such as LOTO, Confined Space Entry, etc. When the precautionary measures have been taken and the affected employees have signed the permit, the Authorized Person will sign the permit authorizing the work to proceed as described on the permit.

b. Persons involved with the hot work or assisting with the hot work must sign the permit. Changes to the work environment or conditions affecting the hot work must be noted on the permit. The hot work permit must be kept at the job site until 30 minutes after the job is complete.

c. A Hot Work Permit is valid for one work shift and one task. The permit becomes invalid when the hot work is delayed for 90 minutes or more. Permits must be kept for at least one (1) year.

NOTE: *The fire watch must ensure that a fire potential does not exist at the end of the mandatory 30 minute watch period. If material is perceptibly hot, is still glowing or otherwise providing indication of residual heat, the surface must be cooled by appropriate means, or the watch extended until such time as the risk has abated.*

IV. References

CFR 1910.252

REVISION DATE	REVIEW DATE	REVISION NUMBER	REVISION COMMENTS	AUTHOR
09/22/2016	09/22/2017	1	Created the document	Bill Oswald
14NOV16	14NOV169	2	Edits	K Rodriguez

Hot Work Permit

Date		Valid from	AM /PM	To	AM /PM
Location					

Description of work to be performed:	
List who is performing work:	

Fire watch assigned?	☐	Yes	☐	No	List the fire watches
Required, if uncovered combustibles remain within 35 feet.					

WORK AREA EVALUATION

HOT WORK ON CONTAINERS & FUEL TANKS

Containers holding flammable or combustible liquids or gases have been purged, cleaned, and filled with inert liquid or gases and tested for %LEL/LFL.

%LEL/LFL	Initial when reading is taken and tested to verify an LEL/LFL less than 10%

HOT WORK IN ALL AREAS

1. Person completing "Hot Work Permit" understands hazards in the hot work zone.	☐	Yes	☐	No
2. Flame or spark-producing equipment to be used has been inspected and found to be in good repair.	☐	Yes	☐	No
3. Sprinklers and fire water, where provided, are in working condition and will remain in service while this work is being done.	☐	Yes	☐	No
4. Portable fire extinguishers are available, are appropriate for the fire hazard, and personnel have been trained to use them.	☐	Yes	☐	No
5. All combustibles have been relocated 35 feet from the hot work, and the remainder protected with flame-proof curtains or covers.	☐	Yes	☐	No
6. All voids and openings leading to other areas (rooms, floors) have been covered.	☐	Yes	☐	No
7. All appropriate SOPs and good work practices are being followed.	☐	Yes	☐	No
8. Do you have the proper personal protective equipment including welding shields, respirators, hearing protection for the job?	☐	Yes	☐	No
9. A method for contacting emergency responders is in place.	☐	Yes	☐	No

IF ANY ANSWER IS *NO*, LIST ALTERNATIVE MEANS OF CONTROL:	

AIR TESTING REQUIRED FOR WORK NEAR FLAMMABLE LIQUIDS AND GASES	Oxygen Level	%	LEL	%	Time	
	Oxygen Level	%	LEL	%	Time	
	Oxygen Level	%	LEL	%	Time	

JOB COMPLETION SIGN OFF

Work completed Date & Time:		I verify the area has been monitored for the absence of fire for 30 minutes after the last cut.	
Final Inspection By:		Time:	
Comments:			