HEALTH AND SAFETY POLICY AND PROCEDURES MANUAL

By:
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INSTRUCTIONS

This manual is a controlled document prepared specifically for Schmid Pipeline Construction, Inc. (hereinafter Schmid). It may not be reproduced, in whole or in part, without the express authorization of Schmid.

Policies and procedures will be updated, periodically, as Federal, State, corporate and client safety and environmental requirements change. A complete review of this procedure and policy manual will be conducted on a two year schedule. Suggestions for changes or additions are requested, at any time, from our employees and clients. A form is included as an attachment to this document and should be completed and forwarded to Schmid Pipeline Construction, Inc., 850 Mallard Drive, Mayville, WI 53050.

This manual will be maintained at the Mayville office and accessible to our employees, their representatives and our clients at all times.

Wherever feasible, references to specific OSHA Standards are included in this manual. For more specific information, contact the Schmid office at the previously indicated address or by calling (920) 387-9997.

SUGGESTON FOR CHANGE FORM

To: Schmid Pipeline Construction, Inc.
850 Mallard Drive
Mayville, WI 53050

Attn: Safety Director

Procedure Name_____

Procedure Number_____

Suggested Change:

_____
_____
_____
_____
_____
_____

Reason for Change:

_____
_____
_____
_____
_____
_____

Name_____ Date_____

Work Location _____

Contact Number _____

PREFACE

General - Schmid acknowledges that written procedures cannot address every safety requirement encountered during construction or demolition work. These safety procedures are considered minimal mandatory safety procedures. These procedures, in conjunction with the Client Safety Manual and contract language constitute the overall Schmid Health and Safety Program.

Terms- The term company refers to Schmid, the term subcontractor refers to any subcontractor or tier subcontractor under contract to the company or a subcontractor of the company for the purpose of performing work at a Schmid managed construction site. The term safety program refers to the company Health and Safety Program, Safety Manual and contract language regarding health, safety and environmental issues.

Application - The Safety Program will apply to all work sites managed by the company or where the company and all subcontractors are performing work. Where Federal, State, Municipal or contract established client safety standards exceed procedures outlined in this manual, those standards shall take precedent.

Adoption by Others - The Company acknowledges that others may adopt the Safety Program in whole or part. However, enforcement of the policy among employees, including the application, training, and documentation required is the responsibility of the adopting employer. Schmid accepts no liability for the content of this program where adopted by others.

Review and Update - This manual will be updated as changes to the company Safety Program and Federal standards occur. All page revisions or additions will be numbered and published by the company.

Accessibility - The company safety program will be located at the construction field office and will be accessible to all employees, client representatives and regulatory compliance inspectors. If a field office is not present the each service technician or group of technicians at the same a jobsite will carry a copy.

Participation - Effective safety programs are contingent upon enforcement by the company and/or subcontractor and open participation by all employees. All employees are encouraged to participate in the effective implementation of the company safety program without fear of reprisal.

INTRODUCTION

A craftsman is known by his tools and a contractor by his operations. Schmid policy states that top management considers no phase of operations or administration of greater importance than accident prevention. Accidents which result in personal injury and damage to property or equipment represent needless waste and loss. Therefore, it is the policy of Schmid to conduct all operations safely, thereby preventing injuries to people and damage to property. The following are procedures and requirements that have been adopted by Schmid in order to create a safe and productive worksite for all those involved.

Management and supervisory employees of the Company have adopted the elements of this Safety Program. This program will be followed throughout the planning and operations of the construction job. An accident Prevention Budget will be established to account for safety meetings, loss prevention and training.

The Safety department, project manager, project superintendent and/or foreman will be responsible for the enforcement of this disciplinary program.

Management will conduct daily surveys of safety procedures and will correct any possible hazards promptly and effectively.

All suggestions from employees or management for revising safety procedures will be given fair and reasonable consideration, followed by prompt decisions on actions to be taken. These recommendations, whether honored or not, will be recorded for management to review and consider throughout the project.

All accidents will be investigated through reports, and audited to assure management that standards are adequate in content and effective in application.

Members of Schmid management will attend certain safety meetings with foremen and superintendents throughout the project.

Foreman will conduct weekly toolbox talks with workmen to discuss safety concerns throughout the project.

Annual safety meetings of all superintendents and management staff will be conducted to discuss safety procedures, problems and requirements throughout the year to better themselves for the year to come.

Management will plan operations to assure that the necessary safety equipment of critical importance to prevention of loss is available on the job in the proper type and quantity at the time it is needed.

Each new hire will be taught Schmid safety procedures by their foreman.

This program effectiveness will be measured quarterly by comparing losses to prior quarters. The results will affect our overall success in construction.

SAFETY RECOGNITION POLICY

The following Safety Recognition Policy is being instituted to promote safe work habits and attitudes and to reward those individuals who have demonstrated a safe work ethic through the safe performance of their duties throughout the year.

Eligibility

1. Only full time employees are eligible to participate in this program with the following exceptions.
   (a) Salaried employees are not eligible for the program.
   (b) Hourly paid employees whose main duties are confined to the office are not eligible for the program.
2. Eligible employees must have been on the payroll from December 1 through the following November and not have had an illness or injury recordable on the OSHA 300 Log.

Effective Date

This Safety Recognition Program is effective immediately.

Awards

Awards will be a gift certificate at Sears, Home Depot, or at a restaurant of the employee's choice. Gift certificates will be awarded each December according to the following schedule:

Number of Consecutive Years Without a Recordable Illness or Injury	Amount of Gift Certificate
1	$50.00
2	$75.00
3	$100.00
4	$150.00
6-9	$175.00
10-15	$200.00
16 and UP	$300.00

"RED FLAG" VIOLATIONS POLICY

Several policies and procedures, contained within this manual, have been identified as Red Flag Violations. Simply stated, failure to comply with these items will result in immediate removal from the work site and discharge from employment with Schmid. They have been identified due to the extra ordinary hazard they represent to our employees, our clients and their employees, and the surrounding community.

This listing is not all-inclusive and does not preclude the right of Schmid to terminate employment for other violations of company policy and labor agreements.

Additionally, it does not preclude our clients from requesting the removal of our employees from the job site.

1. Willingly damaging Schmid or clients' safety equipment, i.e. self-contained breathing apparatus, fire-fighting equipment etc.

2. Failure to report damage of Schmid or clients' safety equipment.

3. Failure to comply with personal protective equipment requirements of Schmid or our clients.

4. Failure to report accidents, injuries, spills, and releases to Schmid and its client's designated representative.

5. Intentional discharging of contaminants to the ground, atmosphere, water, or sewer without prior approval of Schmid and our client's designated representative.

6. Unauthorized entry into a confined space.

7. Vacating a fire watch or confined space safety observer position during the performance of ongoing hot work and/or confined space entry.

8. Violation of Schmid Or client control of hazardous energy (Lockout) procedures.

9. Failure to comply with the drug and alcohol abuse policy as published in this manual.

10. Willingly violating the safety, environmental, and health policies and procedures of our clients.

11. Failure to cooperate with a Schmid or client incident investigation.

PERSONNEL SAFETY VIOLATIONS POLICY

The primary purpose of this policy is to establish guidelines for Schmid foremen and managers who deal with personnel safety infractions and violations. This policy attempts to establish consistent discipline for repeat offenders while allowing the flexibility necessary for fairness and effectiveness. The desired result of this policy is to prevent recurrence through re-education and/or discipline.

While every violation must be responded to, based on its specific circumstances and may require a stronger response at any phase, when appropriate, the following guidelines should be used:

1st Offense Verbal warning with an on-the-spot reminder of the potential hazard the employee exposed himself, others, or property to.

2nd Offense Same as above with a note to job site personnel file; notify Shop Steward of second offense; and enlist Shop Steward's assistance to educate/re-train.

3rd Offense Six-month suspension or permanent suspension. Consult with Schmid management staff and notify union. Permanent suspension can be reduced to six month suspension if their Union Business Agent informs Schmid of steps that have been taken, such as retraining and/or counseling that will prevent occurrence of future unsafe craft execution.

In the event that the owner at the site will not accept reinstatement under any condition after any suspension, Schmid's only obligation, if above conditions are met, will be to accept the craftsmen on future work when the employee is assigned by the Union Hall. This statement does not waive Schmid's rights of refusal under all other standard existing practices or agreements with the unions.

Physical inspections by company officials that indicate violations showing overall lack of commitment to company safety goals shall be under the same level of disciplinary actions.

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SECTION 1

SUBSTANCE ABUSE POLICY

MEMORANDUM OF UNDERSTANDING

Drug and Alcohol Abuse Policy/Program

1. UNDERSTANDING

Abuse of alcohol and drugs is recognized as a serious problem in today's workplace that affects Schmid as well as society and creates a need for guidelines regarding assistance. Accordingly, when it is determined that an employee is suffering from an alcohol or drug abuse problem, the individual is advised to utilize their existing Health and Welfare programs for treatment and rehabilitation. Additionally, efforts will be made to assist the employee using available health care and community resources. However, this does not preclude, under the policy, the Company's right to administer discipline up to and including discharge.

2. POLICY

Drug and alcohol abuse is a problem of serious concern in society today. In the workplace substance abuse is reflected in increased cost, lower productivity, and increased risk to the health and safety of employees and customers. Recognizing that we have an obligation to provide a working environment that is safe and productive and not in any way detrimental to the conduct of the business of Schmid the Company has established this policy for addressing alcohol and prohibited substances in the workplace.

It is the policy of the Company that all employees shall at all times is capable of performing safely and up to satisfactory standards while on Company premises or while acting as a representative of the Company. To this end, the Company expressly prohibits the possession, sale, use, or distribution of prohibited substances or related paraphernalia on company premises. Such an act is grounds for immediate dismissal. While at work or performing on behalf of the Company, employees shall not have a measurable level of prohibited substances or alcohol in their system. Additionally, the Company will provide training with regard to drug awareness to appropriate levels of supervision.

Prescription medicines for which the employee has a valid prescription, and over the counter medications may be present at the work location in one day supply or must be kept in the original container. Employees shall notify their Supervisor when taking medication that may affect job performance.

All subcontractor/supplier personnel and other third parties on company premises will be subject to this policy. Any such individual found in violation to this policy will be subject to removal from the premises. Violation of this policy by subcontractor/supplier employees may also cause cancellation of the contract between Schmid and such subcontractor/supplier, and may result in the subcontractor/supplier losing the right to do business with Schmid.

3. DEFINITIONS

Company Premises - Any properties owned, leased, or occupied by Schmid and/or its subsidiaries including the facilities of clients occupied for the intent of conducting business at the Schmid project location.

Prohibited Substance - Substances not authorized by law for sale, possession, or use. This includes, but is not limited to, prescription medicines for which the possessor has no valid prescription, marijuana, mood, or mind altering drugs, depressants, stimulants, designer, and synthetic drugs.

Measurable Level - Any amount of substance found in the system that exceeds cutoff levels established by the prescribing physician or by the Medical Review Officer.

4. ENFORCEMENT/TESTING

Due to the importance of this policy, the Company will utilize the methods outlined below to detect drug and/or alcohol abuse or use on company premises and to ensure that all employees are in compliance with this policy. When required, a laboratory mutually approved by the Employer and Union will conduct testing. A National Institute of Drug Abuse (NIDA) certified laboratory with chain of custody procedures in place to insure continuity of specimen handling shall perform all testing of specimens. A company-approved informed consent form will be signed by each person to be tested. Refusal to take the alcohol/drug test will subject the employee to company disciplinary procedures up to and including dismissal.

A. Reasonable Suspicion/Post Accident Drug and Alcohol Abuse Testing

Employees will be subject to urine tests to detect the presence of drugs and/or alcohol under the following conditions:

1. In the opinion of two of the employer's management, one of which must be the project manager/superintendent or designate, there is reasonable suspicion of drug/alcohol use or impairment. A copy of the Reasonable Suspicion Report is attached at the end of this section.
2. Reasonable Suspicion in the above two instances would include but not be limited to instances where drugs and/or alcohol have been detected on site or in Company vehicles; when there are observable signs of impairment to the employees ability to perform (i.e. difficulty in maintaining balance, slurred speech, significant changes in performance or behavior); or at any time an unusual or
3. Unexplained incident occurs where drug or alcohol use could have been a contributing factor.

5. EMPLOYEES

A. Employees involved in "work-related" accidents shall be subject to testing. A "work-related" accident is defined as an accident resulting in an injury requiring treatment by a physician or resulting in damage to property or equipment. In the event of a work-related accident, the Superintendent or Project Manager, and the craft Foreman shall decide which individuals are to be tested. A copy of the Work Related Incident Form is attached at the end of this section.

B. Pre-Employment/Pre-Access Drug and Alcohol Abuse Testing

Except for the exemptions provided for herein, no employee will be permitted to perform work on the owner's site unless such employee has passed a pre-employment or pre-access drug and alcohol test within a 120 day period immediately prior to commencing such work.

6. EXCEPTIONS

A. Individuals who have not successfully completed an equivalent pre-employment drug screening in accordance with the preceding will immediately upon employment submit to drug and alcohol testing. It is further understood that individuals who have not successfully completed the required drug and alcohol abuse testing prior to starting work on the project shall be hired on a probationary basis pending the results of testing. Should the results of testing be positive (i.e. the individual is not within the limits prescribed), then the individual would be terminated immediately.

This exception does not apply to employees hired to work in owner designated positions. They must be certified prior to starting work on the site.

B. Other Drug and Alcohol Abuse Testing/Designated Positions
Unannounced periodic or random urinalysis testing will be conducted when an employee meets any one of the following conditions:

1. The employee has had a substance abuse problem.
2. The employee is working in a designated position identified by Schmid management which requires such testing.
3. The employee is working in a position where such testing is required by law.

It should be noted that Schmid has advised that there are currently no Schmid employees that fall into categories 2 or 3 above. Although Schmid will specifically identify such “designated positions,” they may include but are not limited to positions that have:

1. A high exposure to catastrophic operational incident,
2. A direct role in the operating process where failure could result in serious harm to public or employee well-being and,
3. No direct or very limited supervision available to provide operational checks.

C. Searches for Drug and/or Alcohol

The Company and/or the owner may from time to time conduct unannounced searches for drugs and/or alcohol on owner or company-owned property. The owner, company supervisors, or an outside security guard force may conduct these searches. Specially trained animals may be used on the searches to aid in the detection or certain controlled substances.

7. ENFORCEMENT/PENALTIES

A. If an employee tests positive, he/she will be terminated and will be ineligible for rehire for 30 days. In the event an individual is dispatched after 30 days and tests positive a second time, the individual will be terminated and ineligible for rehire for a minimum of 12 months or until the individual provides written confirmation of current involvement and completion of a rehabilitation program and successfully passes the drug and alcohol test. Any individual hired or rehired under these circumstances shall be subject to unannounced random testing for an indefinite period of time.

B. All specimens testing will be conducted in accordance with the provisions outlined in this policy/program.

C. Refusal to submit to drug and alcohol abuse testing as described herein shall result in the individual being denied access to the project site. Employees who refuse testing shall be subject to disciplinary action, including termination.

D. Employees shall be required to sign the attached Employee Consent Form. Failure to do so will result in termination.

E. The Employer agrees that the grievance procedure contained in the applicable labor agreement shall apply for dispute resolution relative to this policy, providing that such grievance procedure's final step is impartial.

F. The Employer agrees to release and hold harmless from any and all claims which the Employer now has or may in the future have against the

G. Union concerning allegations of negligence in the referral of employees to work who the Union knows or should have known has in the past tested positive for drug or alcohol use. The Employer acknowledges that the Union does not screen persons it refers to work through the hiring hall for drug or alcohol use, and that it is strictly the responsibility of the Employer to test its employees for drug or alcohol use.

8. **OTHER**

A. The Employer agrees to review this Drug/Alcohol Abuse Policy/Program every 6 months of the first 2 years that it is in effect. Any changes to the policy/program will be written and made a part of this document.

Anti-Drug and Alcohol Misuse Prevention Plan

Employee Acknowledgement and Receipt

I have been furnished a copy of Company's Employee Anti-Drug and Alcohol Misuse Prevention Plan for compliance with Department of Transportation Pipeline Regulations 49 CFR Parts 40, 199 and/or Federal Highway Regulations 49 CFR Parts 40 and 382. I have received and understand all of the requirements of the pertinent plan(s).

I am aware that any violation of any of the provisions of this plan will result in my removal from any covered position as defined in this plan and may possibly result in termination of employment.

Date _____

Employee Signature _____

Employee Name (print) _____

This Substance Abuse Program, Including Attachment # 1 and the Employee Consent Form, Agreed To This_____ Day of _____ 20____.

For The Employer

_____	_____
Organization	Organization
By _____	By _____
Signature/Date	Signature/Date
_____	_____
Print Name/Title	Print Name/Title

For The Unions

_____	_____
Organization	Organization
By _____	By _____
Signature/Date	Signature/Date
_____	_____
Print Name/Title	Print Name/Title

****

_____	_____
Organization	Organization
By _____	By _____
Signature/Date	Signature/Date
_____	_____
Print Name/Title	Print Name/Title

****

DOT DRUG TESTING PROGRAM DETECTION LEVELS				
	SCREEN LEVELS		**CONFIRMATORY LEVELS**	
SUBSTANCE	**Schmid Pipeline Construction, Inc.**	**DOT**	**Schmid Pipeline Construction, Inc.**	**DOT**
Cocaine	300 ng/ml	300 ng/ml	150 ng/ml	150 ng/ml
Phencyclidine (PCP)	25 ng/ml	25 ng/ml	25 ng/ml	25 ng/ml
Marijuana	20 ng/ml	100 ng/ml	15 ng/ml	15 ng/ml
Opiates, Codeine, Morphine	300 ng/ml	300 ng/ml	300 ng/ml	300 ng/ml
Amphetamines Methamphetamines	1000 ng/ml	1000 ng/ml	500 ng/ml	500 ng/ml
Barbiturates	300 ng/ml	Not Required	300 ng/ml	Not Required
Methadone	300 ng/ml	Not Required	200 ng/ml	Not Required
Methaqualone	300 ng/ml	Not Required	200 ng/ml	Not Required
Propoxyphene	300 ng/ml	Not Required	300 ng/ml	Not Required
Alcohol	Detection	Not Required	.04 gm/dl	Not Required
Benzodiazepines	300 ng/ml	Not Required	300 ng/ml	Not Required

REASONABLE SUSPICION REPORT

INSTRUCTIONS: **This document should be prepared and signed by the witness within twenty-four (24) hours of the observed behavior.**

WORKER: Name:_____

Classification:_____

OBSERVATION: Date:____/____/____Time:_____☐ AM ☐ PM to _____☐ AM ☐ PM

LOCATION:_____

CAUSE FOR SUSPICION:_____

_____

APPEARANCE:

☐ Normal	☐ Flushed	☐ Needle Marks in Skin
☐ Disheveled	☐ Bloodshot Eyes	☐ Body Odor – Alcohol
☐ Dry Mouth	☐ Excessive Sweating	☐ Body Odor-Marijuana
☐ Runny Nose/Sores	☐ Tremors/Shakes	☐ Dilated (large) Constricted Pupils

SPEECH:

☐ Normal	☐ Loud	☐ Slurred	☐ Incoherent
☐ Slowed	☐ Soft	☐ Cursing	☐ Non-communicative
☐ Talkative	☐ Fast/Rushed	☐ Exaggerated Enunciation	

☐ Other:_____

ATTITUDE/ AWARENESS:

☐ Normal	☐ Depressed	☐ Agitated/Anxious
☐ Lethargic	☐ Crying	☐ Euphoric/Laughing
☐ Paranoid	☐ Unresponsive	☐ Disoriented/Confused
☐ Threatening/ Combative	☐ Belligerent/ Uncooperative	☐ Uninhibited/ Unsafe Behavior

☐ Other:_____

BALANCE:

☐ Normal	☐ Swaying	☐ Can't/Won't Stand Up
☐ Needs Support	☐ Uncoordinated/Staggering	

Objective, Chronological Description of Events, Observations and Actions Taken:

_____

_____

_____

_____

_____

WITNESSED BY:_____ _____ _____ ☐ AM ☐ PM
Signature Title Date & Time

If more than one witness:

_____ _____ _____ ☐ AM ☐ PM
Signature Title Date & Time

ASK THE EMPLOYEE:

"Is there any physical or medical explanation for the observed appearance or behavior?"
☐ Yes ☐ No

Describe:_____

_____

TEST DETERMINATION:

☐ Reasonable Suspicion Alcohol/Drug Test
☐ Employee Refused Test
☐ No Test Conducted (Explain):_____

_____

EMPLOYEE TRANSPORT:

1. To Collection Site By:_____
   Time Transported:_____ ☐ AM ☐ PM Collection Site:_____

2. To Medical Services By:_____
   Time Transported:_____ ☐ AM ☐ PM Facility:_____

3. To Home By:_____
   Time of Transfer:_____ ☐ AM ☐ PM
   Location of Transfer:_____

SECTION 2

GENERAL RULES

1. **RESPONSIBILITY** - The following responsibilities are in addition to those assigned by the Schmid Safety Manual.

A. Field Managers shall conduct documented safety inspections at each construction site at a minimum frequency of once per month. Reports of the inspection shall be provided to Schmid Safety Representative.

B. Project Managers shall conduct documented safety inspections for each project under their control monthly. The results of the inspection shall be retained in the job files and distributed to the President.

C. Project Superintendents/Foremen shall conduct documented weekly safety inspections of the job site. Results of the inspections shall be retained at the job site.

D. The Company shall designate a Site Safety Representative. The Site Safety Representative shall be capable of identifying potential sanitary, safety, and health exposures to employees and is empowered to take any action required to eliminate the unsafe condition or action.

E. Employees shall be trained in their responsibilities and the application of procedures outlined in this manual. Employees shall identify unsafe conditions or actions to their supervisor immediately. All employees shall work in a safe and environmentally sound manner. All accidents, incidents, occupational injuries, or illnesses shall be reported to the company immediately.

F. Subcontractors

1. Subcontractors will provide copies of all required insurance certificates, a current copy of their safety program, drug and alcohol program, hazard communication program, and an indexed set of Safety Data Sheets for hazardous materials used or stored at the work site. These documents will be provided before mobilization and performance of any work at the site.
2. Subcontractors shall designate, in writing, a Site Safety Representative responsible for administration of the safety program and field compliance. The designated person must possess the ability to identify and resolve occupational safety and health issues on the site.
3. Subcontractors shall designate, in writing, any employee assigned to duties of competent person as required by Federal and State Occupational Safety and Health Standards. A copy of the letter of designation shall be provided to the Project Manager and shall be retained as part of the job file. The subcontractor shall assure that the designated individual meets the qualification of competent person as outlined by Federal and State standards and is empowered with the ability to take prompt and immediate action to correct unsafe actions and conditions. The competent person shall be on site at all times during the performance of related work.
4. Subcontractors shall provide trained and qualified employees for the performance of contract work and shall be responsible for employee compliance with the site and subcontractor safety program. All personnel protective equipment and training in the use, care, selection, inspection, and maintenance of personnel protective equipment is the responsibility of the subcontractor.

5. Subcontractors shall provide qualified and trained employees authorized to use tools and equipment required to complete the contract work.

6. Subcontractors will provide documented initial site hazard training to their employees and conduct documented weekly toolbox safety meetings for all employees. Subcontractors will provide documentation of all training to Schmid.

7. Subcontractors will attend all safety meetings called by the company.

2. **INCIDENT REPORTING AND INVESTIGATION** - All company and subcontractor employees will cooperate with any internal, client or regulatory agency accident/incident investigation. OSHA requires reporting of work related incidents resulting in the death of an employee or the hospitalization of three or more employees. Owner clients require all incidents to be reported including, but not limited to, injuries, spills, property damage, fires, explosions, and vehicle damage.

A. All incidents and accidents resulting in injury or causing illness to employees and events (near-miss accidents) shall be reported in order to:

1. Establish a written record of factors that cause injuries and illnesses and occurrences (near misses) that might have resulted in injury or illness but did not, as well as property and vehicle damage.

2. Maintain a capability to promptly investigate incidents and events in order to initiate and support corrective and/or preventive action.

3. Provide statistical information for use in analyzing all phases of incidents and events.

4. Provide the means for complying with the reporting requirements for occupational injuries and illnesses.

The Incident Reporting System requirements apply to all incidences involving company employees, on-site vendors, contractor employees, and visitors, which result in (or might have resulted in) personal injury, illness, and/or property, and vehicle damage.

B. Incidents (Occupational Injuries and Illnesses) - Injuries and illnesses that require reporting include those injuries and illnesses occurring on the job which result in any of the following: lost work time, restrictions in performing job duties, requirement for first aid, or outside medical attention, permanent physical bodily damages, or death. Examples of reportable injuries and illnesses include, but are not limited to, heat exhaustion from working in hot environments, strained back muscles from moving equipment, acid burns on fingers, etc.

Other incidents requiring reporting include those incidents occurring on the job any of the following: injury or illness, damage to a vehicle, fire/explosion, property damage of more than $100, or chemical releases requiring evacuation of at least that immediate spill area.

Examples of non-reportable injuries and illnesses include small paper cuts, common colds, and small bruises not resulting in work restrictions or requiring first aid or medical attention.

C. Events (Near Misses) - Other incidents that, strictly by chance, do not result in actual or observable injury, illness, death, or property damage are required to be reported. The information obtained from such reporting can be extremely useful in identifying and mitigating problems before they result in actual personal or property damage. Examples of near miss

incidences required to be reported include the falling of a compressed gas cylinder, overexposures to chemical, biological, or physical agents (not resulting in an immediately observable manifestation of illness or injury), and slipping and falling on a wet surface without injury.

D. Incident Reporting Procedures - The following procedures are to be followed by all employees in order to effectively report occupational injuries and illnesses and other incidents or events.

E. Incidents (Injuries and Illnesses) - Serious injury or illness posing a life-threatening situation shall be reported immediately to the local emergency response medical services (call 911).

Required incidents must be verbally reported to OSHA within 8 hours of their discovery. Incidents must also be reported to the owner client within 24 hours of the incident or as soon as possible.

The injured employee shall report injuries and illnesses, to his or her supervisor in person or by phone as soon after any life-threatening situation has been addressed. If the injured employee is unable to report immediately, then the incident should be reported as soon as possible.

Upon notification of an occupational injury or illness, the supervisor should complete the Incident/Accident Report and forwarded it to the Site Safety Representative. A copy of the Work Related Incident Report is attached at the end of this section.

F. Events - Incidents not involving injury or illness, but resulting in property damage, must also be reported within 24 hours of the incident. In cases of a fire or explosion that cannot be controlled by 1 person, vehicular accident resulting in injury or more than $500 worth of damage, or a chemical release requiring a building evacuation, the involved party must immediately report the incident to the emergency response services in the area (911, police, fire, etc.).

All near miss incidences also must be reported on the Incident/Accident Report Form within 24 hours of occurrence. In place of indicating the result of the incident (i.e., actual personal or property damage), the reporting person shall indicate the avoided injury or damage.

Events, hazardous working conditions or situations, and incidents involving contractor personnel must be reported to the Site Safety Representative immediately.

G. Recordkeeping - The Site Safety Representative will maintain the required OSHA 300 Log and the OSHA 300A Summary of Work Related Injuries and Illnesses for each calendar year. The OSHA 300A Summary of Work Related Injuries and Illnesses must be signed by a company official.

Within 8 hours after the occurrence of an employment accident which is fatal to one or more employee or which results in hospitalization of three or more employees, Schmid shall report the accident either orally or in writing to the nearest Occupational Safety and Health Administration

area office. The report shall relate the circumstances of the accident, the number of fatalities, and the extent of any injuries.

The OSHA 300A Summary of Work Related Injuries and Illnesses will be posted annually from February 1st thru April 30th for the previous calendar year.

The OSHA 300 Log, the annual summary and the OSHA 301 Incident Report forms must be retained for 5 years following the end of the calendar year that these records cover.

3. **ACCIDENT INVESTIGATION** - Accident prevention is the key to eliminating possibility of injury to employees and property loss. Learning from past accidents is one of the key elements in accident prevention. This chapter addresses the procedures to be followed for all accidents resulting in employee injury or property damage. All employees must be trained in their roles and responsibilities. All employees who could be first responders shall be current in first aid and CPR.

A. Management will conduct accident prevention and investigation training for supervisors and ensure that all accidents and injuries are investigated, ensure immediate and long-term corrective actions are taken to prevent re-occurrence. The Site Safety Representative will maintain Accident Reports permanently on file and ensure proper entries are made on the OSHA 300 Log and First Report of Injury. Management will provide all necessary medical care for injured workers

B. The Safety Committee will review all Incident Report/Investigations and management responsible for the department involved ensuring pertinent information is transmitted to all concerned and remedial action taken

C. Employees will immediately report all accidents and injuries and near misses to their supervisor and assist as requested in all accident investigations

D. Supervisor Involvement - Supervisors will conduct the investigation. Direct supervisors are familiar with employee's work environment and assigned tasks. The Supervisor is the person who must take the accident situation under control and immediately eliminate or control hazards to others. The Supervisor will document the investigation on the Incident/Accident Investigation Report. The Supervisor will take the following immediate steps:

1. Provide First Aid for any injured persons.
2. Eliminate or control hazards.
3. Document accident scene information to determine the cause.
4. Interview witnesses immediately.

Note - After immediate rescue, actions to prevent further loss should occur. For example, maintenance personnel should be summoned to assess integrity of buildings and equipment, engineering personnel to evaluate the need for bracing of structures, and special equipment/response requirements such as safe rendering of hazardous materials or explosives employed. Initial identification of evidence immediately following the incident might include a listing of people, equipment, and materials involved and a recording of environmental factors such as weather, illumination, temperature, noise, ventilation, etc.

E. Investigative Procedures - The actual procedures used in a particular investigation depend on the nature and results of the accident. The Supervisor will gather evidence from many sources during an investigation. Get information from witnesses and reports as well as by observation. Interview witnesses as soon as possible after an accident. Inspect the accident site before any changes occur. Take photographs and make sketches of the accident scene. Record all pertinent data on maps. Get copies of all reports. Documents containing normal operating procedures, flow diagrams, maintenance charts, or reports of difficulties or abnormalities are particularly useful. Keep complete and accurate notes. Record pre-accident conditions, the accident sequence, and post-accident conditions. In addition, document the location of victims, witnesses, machinery, energy sources, and hazardous materials. Investigative equipment will be kept readily available and shall include some or all of the following items; writing equipment such as paper and pens, measuring equipment, cameras, small tools, audio recorder, PPE, marking devices, etc. A copy of the Witness Statement is attached at the end of this section.

F. Problem Solving Techniques - Accidents represent problems that must be solved through investigations. Several formal procedures solve problems of any degree of complexity. This section discusses two of the most common procedures: Change Analysis and Job Safety Analysis

G. Change Analysis - As its name implies, this technique emphasizes change. To solve a problem, an investigator must look for deviations from the norm. Consider all problems to result from some unanticipated change. Make an analysis of the change to determine its causes. The following steps will be utilized:

1. Define the problem (What happened?).
2. Establish the norm (What should have happened?).
3. Identify, locate, and describe the change (What, where, when, to what extent).
4. Specify what was and what was not affected.
5. Identify the distinctive features of the change.
6. List the possible causes.
7. Select the most likely causes.

H. A Job Safety Analysis (JSA) breaks a job into basic steps, and identifies the hazards associated with each step. The JSA also prescribes controls for each hazard. A JSA is a chart listing these steps, hazards, and controls. Review the JSA during the investigation if a JSA has been conducted for the job involved in an accident. Perform a JSA if one is not available. Perform a JSA as a part of the investigation to determine the events and conditions that led to the accident. A copy of the Job Safety Analysis is attached at the end of this section.

I. Investigation Report - An accident investigation is not complete until a report is prepared and submitted to proper authorities. An accident report should be clear and concise. The purpose of the investigation is to prevent future accidents. The completed Incident/Accident Investigation Report will be forwarded to the Site Safety Representative.

All accident reports will be maintained on file permanently. Schmid will maintain a log and summary of all recordable occupational injuries and illnesses by calendar year. Each recordable injury and illness will be entered on the log and summary as early as practicable but no later than 6 working days after receiving information that a recordable injury or illness has occurred.

They shall receive timely review by upper management to ensure proper corrective actions have been taken.

J. Accident Prevention - Accidents are usually complex. An accident may have 10 or more events that can be causes. A detailed analysis of an accident will normally reveal three cause levels: basic, indirect, and direct. At the lowest level, an accident results only when a person or object receives an amount of energy or hazardous material that cannot be absorbed safely. This energy or hazardous material is the **direct cause** of the accident. The direct cause is usually the result of one or more unsafe acts, or unsafe conditions, or both. Unsafe acts and conditions are the **indirect causes** or symptoms. In turn, indirect causes are usually traceable to poor management policies and decisions, or to personal or environmental factors. These are the **basic causes**.

In spite of their complexity, most accidents are preventable by eliminating one or more causes. Accident investigations determine not only what happened, but also how and why. The information gained from these investigations can prevent recurrence of similar or perhaps more disastrous accidents. Accident investigators are interested in each event as well as in the sequence of events that led to an accident. The accident type is also important to the investigator. The recurrence of accidents of a particular type or those with common causes shows areas needing special accident prevention emphasis.

In an attempt to reduce accidents periodic and regular inspections of jobsite, equipment and material will be conducted. These inspections or audits will identify and unsafe equipment and conditions. All employees will be instructed to avoid unsafe conditions. Should they be presented with unsafe conditions on the works, the employee will inform management. Only qualified employees shall be permitted to operate equipment. Any machinery, tool, equipment or material that is unsafe or presents an unsafe condition will immediately be removed from the worksite. If the equipment cannot be removed from the worksite it will be tagged and its controls will be locked out until the equipment can be repaired by a qualified individual.

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

4. **EMERGENCIES** - Each project will post emergency reporting numbers near telephones and in areas frequented by employees. All subcontractors will post emergency numbers for fire, police, rescue, and medical treatment facilities selected in the same manner. A copy of the subcontractor emergency listing will be provided to the company project superintendent.

A. Emergencies are defined as follows:
- ☐ Occupational Injury and/or Illness
- ☐ Fires
- ☐ Environmental Incidents (spills, leaks, releases)
- ☐ Vehicle Accidents
- ☐ Equipment Accidents
- ☐ Near Miss Incidents

1. Injuries, spills, chemical releases, leaks, and fires rapidly become life-threatening situations. Emergencies must be reported quickly and accurately to obtain the

proper assistance. Failure to report emergencies immediately may result in excess property damage, employee exposure to illness and injury, releases to the atmosphere and surrounding communities.

2. Employees must be aware of our company and client procedures prior to field assignment. The Project Superintendent shall insure that our employees are knowledgeable of client and company procedures. Emergencies shall be reported to the Regional Safety Director immediately.

3. The following are general guidelines for reporting (Be clear and concise, don't panic):

a) State your name
b) Location of the emergency
c) Nature of the emergency and materials involved
d) Type of injury
e) If possible, remain in the area and provide direction to location to the Emergency Response Teams
f) Do not interfere with Emergency Response Teams

Special Note - Injuries, spills, chemical releases, leaks and fires can rapidly evolve to a life-threatening situation. Your primary responsibility is to report the emergency quickly and secure the appropriate assistance. Do not wait to contact your supervisor. Failure to report emergencies immediately may result in well-intentioned individuals being overwhelmed by what was initially thought to be a small problem.

5. **EMERGENCY RESPONSE** - It is imperative that our employees understand that their role in emergency response is limited, primarily, to reporting and securing assistance. In most cases, our client's procedures require you to follow their emergency notification plan, provide direction to the site (if possible) and evacuate to a safe location as specified in their Site Emergency Evacuation Plan. Once at the form up area, remain in place and follow instructions. A head count will be conducted and, if you are missing, Emergency Responders may be placed at unnecessary risk trying to locate you. A copy of the Emergency Action Plan Algorithm is attached at the end of this section.

A. OSHA References - 29 CFR 1910.38, 29 CFR 1910.119, 29 CFR 1910.120, 29 CFR 1926.65

B. Fire Control

1. In the event of fire, follow the site emergency notification plan posted in this section of the manual.
2. Those individuals assigned to fire watch duties are primarily responsible for spark containment and incipient stage quenching of materials that may have ignited due to hot spark contact. Remember you are not trained or equipped for firefighting duties; immediate notification of emergency personnel is required.
3. The area must be evacuated by following the Site Emergency Evacuation Plan. If your assistance is needed by trained Emergency Responders, it will be requested. Your presence, whether well intentioned or out of curiosity, constitutes an additional hazard and concern to Emergency Responders.

4. Only Halon, Carbon Dioxide or Purple K dry powder extinguishers must be used on or near electrical equipment fires. Special care must be exercised to insure that water does not come in contact with an open electrical bus or circuit.

5. The use of water in chemical or oil production and storage areas must be carefully evaluated. Many chemicals and hot oils react violently when in contact with water. Water can rapidly spread oil and gasoline fires. If needed, firewater should be applied in a fog pattern, not a direct steady stream.

6. If hazardous materials are involved in an incident, or may potentially become involved. The Safety Data Sheets shall be provided to the Emergency Responders.

C. Fire Fighting Equipment and Control Devices

1. All electrical equipment and motorized vehicles operated within the confines of a client's property must be equipped with fire extinguishers.

2. Firefighting equipment must be readily accessible and not blocked by tools, vehicles, debris, or equipment.

3. Use of emergency firefighting equipment for any purpose other than an emergency situation is prohibited.

4. Client's Safety Procedures must be consulted for instructions on use of fire hydrants, lines, and standpipes.

5. Horseplay, involving firewater and hoses, will not be tolerated.

6. Any person or persons that may need to use a fire extinguisher shall be trained in the general use of fire extinguishers and the hazards of incipient firefighting. Where the employer has provided portable fire extinguishers for employees use in the workplace, Schmid shall provide training to familiarize employees with the general principles of fire extinguisher use and the hazards involved in incipient stage firefighting. Employees shall receiving training upon initial assignment and at least annually thereafter.

7. Any fire extinguisher that is empty, partially used or commissioned must be returned to the Foreman immediately for recharge and replacement.

8. The client's designated representative must be notified if emergency equipment is partially or fully discharged, or requires relocation, and removal to facilitate equipment installation.

9. Fire alarms, fire detectors, smoke detectors, and other emergency signaling devices may not be disconnected or relocated without the express approval of the client's designated representative.

10. Fire alarms and smoke detectors, installed in Schmid trailers or work locations must be inspected and tested monthly. Records of these inspections will be kept at the job site and a copy submitted to the main office.

11. Schmid assigned portable fire extinguishers must be visually inspected monthly for charge and condition of cylinder and hose. Corroded and partially discharged equipment must be returned immediately. Schmid assigned portable fire extinguishers must also have an annual maintenance check performed. These inspections will be documented and kept on file at the site office, a copy will be sent to the main office.

12. Fire extinguishers used for fire watch duties must be inspected at least daily, at the beginning and end of each daily job. Defective, damaged, or discharged equipment must be returned to the Foreman and replaced immediately.

6. **FIRST AID** - The purpose of this chapter is to provide general information regarding First Aid. It is not our intent to train, qualify or certify Schmid employees as First Aid Personnel or

Emergency Responders. All Schmid employees are reminded that their primary duty in the event of an injury or illness is to get help from qualified Emergency Responders!

Schmid employees having a valid certificate in First Aid/CPR/AED Training, the National Safety Council or equivalent shall be available at work sites to render emergency first aid. Provisions shall be made prior to commencement of a project for prompt medical attention in case of serious injury. A competent person will be assigned to post the emergency phone numbers for physicians, hospitals and ambulances and directions to medical facilities around the site so that they are accessible to all employees.

Proper equipment for prompt transportation of injured persons to a physician or hospital or a communication system for contacting necessary ambulance service shall be provided.

At least one First Aid Kit per 25 employees will be on each jobsite. The kit will be in an environmentally controlled location and clearly marked as to its whereabouts at the site. The first aid kit shall be readily accessible at all times.

All First Aid Kits will be checked prior to shipment to jobsite.

All First Aid Kits will be visually inspected on at least a weekly basis by a competent person assigned this duty prior to start of job.

First aid kits shall consist of appropriate items which will be adequate for the environment in which they are used.

First Aid kits shall be stored in a weatherproof container with individual sealed packages of each type of item per ANSI Standard Z308.1-1998 or OSHA 29 CFR 1910.151 Appendix A.

In addition one employee on site will be currently certified in Standard First Aid/CPR/AED.

Where the eyes or body of any person may be exposed to injurious corrosive materials, suitable facilities for flushing of eyes or body shall be provided within the work area.

Schmid will provide appropriate PPE in accordance with OSHA 29 CFR 1910.1030(d)(3) Occupational Exposure to Blood Borne Pathogens to employees that may be exposed to blood or other potentially infectious materials. For more information on Blood Borne Pathogens please refer to OSHA 29 CFR 1910.1030.

A. OSHA References - 29 CFR 1926.21, 29 CFR 1910.1030

B. Artificial Resuscitation
   1. Check for consciousness.
   2. Check for breathing.
      a) Look, listen, feel for about 5 seconds.
      b) Position victim on back.
      c) Open airway using head tilt and chin lift.
      d) Recheck breathing.
      e) Look, listen and feel for about 5 seconds.

f) If not breathing,
g) Keep head tilted back.
h) Pinch nose shut.
i) Seal your lips tightly around person's mouth.
j) Give 2 slow breaths.
k) Watch to see that breaths go in.

3. Check for severe bleeding, head to toe.
4. Find hand position.
   a) Place heel of hand between nipples and interlock fingers of other hand.
   b) Keep fingers off chest.
   c) Give 30 compressions and 2 breaths.
   d) Compress down and ups smoothly, keeping hand contact with chest at all times.
   e) Watch chest to see that your breaths go in.
5. Repeat compression/breathing cycles

C. Burns - The rapid stabilization and transport of burn victims is extremely important.
1. Care for burns, three basic steps:
   a) Stop the burning.
   b) Cool the burn.
   c) Cover the burn.
2. Do's:
   a) Do cool a burn by flushing with water.
   b) Do cover the burn with a dry clean covering, such as a sterile dressing.
   c) Do keep the victim comfortable and from being chilled or over heated.
3. Don'ts:
   a) Don't apply ice directly to any burn, unless it is very minor.
   b) Don't touch a burn with anything except a clean covering.
   c) Don't remove pieces of cloth that stick to the burned area.
   d) Don't try to clean a severe burn.
   e) Don't break blisters.
   f) Don't use any kind of ointment (or butter) on a severe burn.

D. Chemical Burns - Splash, to Skin or Eyes.
1. Flush the burn with large amounts of cool running water until the ambulance arrives.
2. Have victim take off any clothes with the chemical on them, if possible.
3. If only one eye has been exposed to the chemical, flush the affected eye from the nose outward to prevent washing the chemical into the unaffected eye.
4. Where the eyes or body of any person may be exposed to injurious corrosive materials, suitable facilities shall be provided within the work area and shall be inspected on a weekly basis.

E. Electrical Burns
1. Sources of electricity include power lines, lighting, defective electrical household equipment, and unprotected electrical outlets.
2. The burns are often deep and have two wounds, one where the current entered the body and one where it left.

3. Never go near a victim you think has been injured by electricity until you're sure the power has been turned off.

4. With an electrical burn, the burn itself will not be the major problem; check breathing and pulse if victim is unconscious. Check for other injuries such as possible fractures, or spinal injury. **Do not move them.**

5. Cover an electrical burn with a dry, sterile dressing but do not cool the burn. Keep the victim from getting chilled.

7. **HOUSEKEEPING** - Many injuries and incidents, at work or in the home, have been caused by poor housekeeping. Housekeeping is the responsibility of all Schmid employees.

A. OSHA References - 29 CFR 1926.25

B. Job sites and work locations must be kept clean of all debris.

C. Hoses and electrical lines must be laid out to minimize tripping hazards in walkways or other traffic areas. Lines shall not interfere with pedestrian or vehicular traffic.

D. All job sites must be cleaned at the end of each day, at any time accumulated debris, or equipment constitutes a safety or health problem, or at the completion of the job assignment, whichever comes first.

E. Oil or chemical spills must be cleaned and reported immediately. If spills cannot be promptly cleaned, they must be barricaded or warning taped off to prevent access. Clients must be notified.

F. Oily rags and debris must be disposed of in proper metal covered containers.

G. Water and/or ice shall be cleared from the work area. Ice accumulation overhead, on scaffolding, ladders, steel under erection, and walking surfaces is extremely hazardous and shall be cleared before beginning work in the affected areas.

H. Electrical cords and hoses must be coiled and stored out of the traffic area at the completion of the job or workday whichever comes first.

I. Exposed nails must be bent over or pulled and all lumber stacked neatly.

J. Oils, solvents, chemicals, etc., will not be dumped on the ground or in sewer.

K. The client's procedures for disposing of recyclables, trash, oils, solvents, chemicals, or contaminated trash and equipment must be followed.

8. **BARRICADES AND WARNING DEVICES** - Barricades provide a substantial barrier that obstructs the normal passage of equipment and personnel. It cannot be disturbed or moved by natural elements. Warning tape and barrels and drums, etc., do not constitute a barricade, they are considered warning devices. Subcontractors supplying non-English speaking employees are responsible to post multi-lingual signage. Failure to heed or circumventing a barricade and warning devices will result in disciplinary action.

A. OSHA References - 29 CFR 1926.202, 29 CFR 1926.203

B. Unattended excavations or floor openings must be barricaded or covered with planks, steel plates or other suitable material to prevent accidental entry.

C. Night warning lights must be placed at all excavation sites.

D. Handrails, guardrails, hatch covers, or floor opening covers, temporarily removed to facilitate work, must be replaced promptly at the end of the work period or as soon as the need for the opening has ended.

E. If guardrails, handrails, or floor opening covers have been removed, fall protection is required while working in the area.

F. Ladder access to platforms must be guarded with chains or bars and securely fastened when working on platforms. Floor openings must also be closed and secured.

G. Equipment and vehicles left on access roads or alleyways overnight must be identified to the client's designated representative and marked with flashing lights overnight.

H. Barricades and or warning devices must be used whenever work is performed above a road, walkway, or machinery.

I. Yellow warning tape must be used to restrict access to areas immediately beneath overhead work.

J. Barricades or warning devices must be used to protect workers from contact with the swing or rotation of construction equipment, i.e. cranes.

K. Oil spills and overhead ice and iced walking areas must be marked with warning tape to restrict access.

L. Radiography work must be isolated with the client specified warning device and approved warning signs.

9. **SMOKING** - Many of our client's locations restrict smoking to designated areas or ban smoking entirely. Compliance with our client's policy on smoking is mandatory. Failure to comply shall result in termination.

A. Smoking in vehicles, operating within the confines of our client's property is also prohibited.

B. Open top butane type lighters and strike anywhere type matches are prohibited in most refineries and chemical production and storage areas. Check client's policy for further restrictions.

C. Smokeless tobacco, snuff, etc. may not be allowed while working in facilities packaging or producing products under FDA regulation.

D. Where smoking is permitted, sand filled buckets shall be provided for disposal.

10. **VEHICLE INSPECTION AND OPERATION** - All Schmid vehicles are expected to be operated in a safe manner and in full compliance with traffic regulations and laws. A valid driver's license is required to operate motor vehicles in the community or work site.

A. OSHA References - 29 CFR 1926.601

B. The following items are also required:

1. All vehicles will be inspected daily, prior to use. Discrepancies will be noted and vehicles will not be operated until repairs are made. A copy of the Driver Inspection Report is attached at the end of this section.
2. Vehicles will be operated within the posted speed limits on or off site.
3. Drivers will yield to pedestrians.
4. Vehicle access to the operating areas of our clients is generally restricted. Special permits may be required for vehicle entry. Consult the client's Safety Policy and Procedures Manual for further information.
5. Vehicles may not be parked or spotted in a manner that would restrict access by Emergency Response Personnel or without prior approval of the client's designated representative.
6. Vehicles will not be parked or spotted in a manner that would restrict access to emergency equipment, i.e. fire hydrants, extinguishers, safety showers, and eyewash.
7. Vehicles will not be left running and unattended.
8. Seat belts and harnesses will be worn in all company vehicles
9. Personnel will not be transported in cranes, forklifts or other construction equipment not specifically designed for the transportation of personnel.
10. Accidents involving company vehicles must be reported immediately.

11. **WORKING ON OR NEAR RAILROAD EQUIPMENT** - When working near railroad tracks, railroad cars, or on railroad equipment, the following special precautions are required.

A. Tools, scaffolding, equipment, vehicles, etc. must not be placed closer than 8 feet, 6 inches from the center line of the track or 22 feet 8 inches vertically from the tie of the track. (Exception: If the track is certified out of service by the client's designated representatives, an exception may be made providing the restrictions outlined in Paragraph E of this section are complied with).

B. Tools and equipment must not be laid across tracks, under, over, or between rail cars.

C. Climbing over, under, or between rail cars is strictly prohibited. Rail cars move without warning.

D. Railroad tracks and cars must never be used as anchors for tying down equipment or grounding of welding equipment.

E. If work must be performed on tracks, permission must be obtained from the client's designated representative and Schmid Site Supervisor. Red flags must be placed on the tracks 200 feet in front and behind the work area and de-rails installed at the flag locations.

F. Stationary rail cars must be chocked and the brakes set.

G. Work shall not be performed between connected rail cars.

12. **WORKING NEAR TRAFFIC AREAS** - When working near streets, roadways, or other traffic areas, coordination with local law enforcement agencies or facility security is required.

A. Signs will be placed advising motorists of contraction.

B. All employees working near vehicular traffic shall be clearly identified with traffic vests.

C. Flagmen and traffic warning devices shall be provided as required.

13. **GENERAL ELECTRIC RULES** - The following are provided as general rules regarding electrical work and electrically powered equipment. They are not all inclusive and more specific rules can be found in the referenced OSHA standards, the National Electrical Code, and our clients' Safety, Health and Environmental Procedures Manuals.

A. OSHA References - 29 CFR 1910 Subpart S, 29 CFR 1910.147, 29 CFR 1926 Subpart K, The National Electrical Code

B. General Safety Conduct

1. Only authorized and qualified personnel are permitted to energize and de-energize electrical circuits and the standards governing this activity must be strictly followed.
2. All wires must be regarded as live and dangerous.
3. All electrical substations, motor control centers, rooms, and vaults as well as work areas around exposed energized electrical parts must be kept clean and free from debris and water accumulation.
4. Electrical substations, vaults, rooms, and motor control centers shall not be used for storage of tools and/or equipment.
5. Only approved non-conductive ladders may be used in or near electrical transmission devices, exposed energized circuits, substations, motor control centers, rooms, and vault.
6. Only non-conductive plastic headwear is approved for use during electrical work. Conductive jewelry must not be worn.
7. Extreme care must be exercised to prevent objects from coming in contact with electrical transmission equipment.

C. Guarding of Live Parts

1. Live parts operating at 50 volts or more shall be guarded against accidental contact by approved cabinets or other forms of approved enclosures.
2. Access to motor control centers, vaults, rooms, substations etc., housing live parts operating at 50 volts or more is restricted to qualified persons only.

3. Motor control centers, substations, vaults, and rooms housing live parts operating at 50 volts or more must be kept locked or attended to prevent entry by other than qualified persons.
4. Sufficient headroom and front working space shall be provided if there are live parts exposed on the front of switchboards or motor control centers. (Consult OSHA 29 CFR 1926.403 Tables K-1, K-2 and K-3 for voltage and clearance data).
5. Warning signs of high voltage must be posted where other than qualified persons might come in contact with exposed live parts in excess of 600 volts.

D. Grounding (Consult Section 19 and 20 of this manual)
1. Stationary or portable electrical equipment must be properly grounded.
2. Grounding connector pins must not be removed from equipment plugs.
3. Lamps used for illumination must be protected from breakage and metal shell sockets must be grounded.
4. All tools, portable lighting, and electrical equipment used by Schmid employees on construction sites will be protected by GFCIs.
5. Temporary electrical power at all company locations will be equipped with a GFCI. GFCIs must receive a documented inspection monthly by a competent person. Power connections on sites not equipped with GFCI circuit breakers or outlets must be connected to a temporary GFCI outlet cords. There are no exceptions.

E. Electrical Extension Cords and Temporary Wiring
1. Electrical extension cords must be inspected prior to each use. Worn or frayed cords will be removed and discarded immediately.
2. Extreme care must be taken to insure that extension cords or other temporary wiring is not draped or laid across hot surfaces in pipe racks (i.e. steam tracing).
3. Extension cords must not be fastened with staples, hung from nails, suspended by wires, installed above drop ceilings or below carpeting.
4. Extension cords must not be run across roadways or other traffic areas without suitable protection from damage.
5. Extension cords and temporary wiring must be removed as soon as possible.
6. Extension cords and temporary wiring will not be laid out so that it creates a tripping hazard in high traffic areas.
7. Extension cords and power source cords for tools will not be used to lift, hoist or carry equipment.
8. Extension cords must be of the three-wire type and designed for hard or extra hard usage (i.e. types S, ST and SO).
9. Temporary lights must not be suspended by their cords unless they are so designed.
10. Temporary Lighting shall be installed in accordance with The National Electrical Code. Two conductor wiring, BX, or Romex cable are not acceptable.
11. Separate branch circuits shall be used for lighting and power. Power cannot be taken from temporary lighting circuits or fixtures.

F. Special Requirements for Electrical Equipment
1. Only approved, intrinsically safe electrical equipment may be used in areas when the potential for explosive or flammable mixtures may exist. Many of Schmid clients allow the use of electrical equipment in restricted areas by use of gas testing and permitting for hot

work procedures. Refer to the client's Safety, Health, and Environmental Policies for more information.

2. Tape recorders, players, disc players, portable radios, hand held TV's, pocket calculators, and flash devices for cameras etc. are prohibited in the work place without prior approval of the client's designated representative and Schmid Site Supervisor or Foreman.

3. All electrical conduits must be supported and sealed per client specifications.

4. All explosion proof boxes must be fully sealed and bolted per client and manufacturer's specifications.

5. All electrical circuit housings must be tightly sealed per client and manufacturer's specifications.

6. Opening or exposing electrical circuits may be considered as "Hot Work" by our clients and require gas testing and permits. Consult the client's Safety, Health, and Environmental Policy prior to opening or exposing any electrical circuit.

G. Lockout and Tagout (Refer to Section 6, Control of Hazardous Energy Policy, for detailed information.)

1. Equipment circuits that are de-energized must be locked out in accordance with the client and Schmid Control of Hazardous Energy Policy.

2. Circuits that cannot be locked out must be tagged with an approved tag.

3. Specific approval is required by Schmid Site Supervisor and the Control of Hazardous Energy Policy must be consulted.

H. Vehicles and mechanical equipment which may come in contact with energized lines must maintain a 10 foot minimum clearance plus 4 inches for each 10 kV over 50 kV. In transit, equipment must maintain 4 feet of clearance plus 4 inches for every 10 kV over 50 kV.

I. Approach Distances

1. When unqualified persons are working in an elevated position or at grade, in the vicinity of energized overhead lines, they may not bring any conductive tool or equipment closer than:

   a) Voltages to ground of 50 kV or below - 10 feet.

   b) Over 50 kV - 10 feet plus 4 inches for every 10 kV over 50 kV.

2. When qualified persons are working in the vicinity of overhead lines, whether elevated or at grade, they may not approach a conductive item without an approved insulating handle closer than:

Electrical Voltage	**Distance**
400V and less	Avoid Contact
Over 300 V, less than 750 V	1 foot
Over 750 V, less than 2 kV	1 foot 6 inches
Over 2 kV, less than 15 kV	2 feet
Over 15 kV, less than 37 kV	3 feet
Over 37 kV, less than 87.5 kV	3 feet 6 inches
Over 87.5 kV, less than 121 kV	4 feet
Over 121 kV, less than 140 kV	4 feet 6 inches

J. Illumination in electrical equipment rooms must be no less than 10 foot candles, while any work is in progress. For Demolition and General construction work illumination must be no less than 5 foot candles.

14. **MATERIAL SUBSTITUTION** - Design specifications for materials used in construction and repair of equipment are subjected to industry standards, engineering standards, hazard analysis, and compatibility with the process material.

Substitutions for materials required in client's specifications, i.e. gasket material, pressure rating of valves and flanges, material composition, stud or bolt size and rating etc., are specifically prohibited without the express written approval of the client's designated representative and a Schmid Site Supervisor.

A. OSHA References - 29 CFR 1910.119

15. **RADIOGRAPHIC WORK AND RADIOACTIVE MATERIAL** - Radioactive materials are used in several of our client's facilities. In petrochemical facilities, they are primarily used in vessel level devices, and radiography work. Ionizing radiation emitted by radioactive materials and x-ray equipment is capable of causing damage to the body if not properly used and controlled. The following general rules have been established.

A. OSHA References - 29 CFR 1926.53

B. All client's applicable rules and regulations regarding the use of radioactive materials and devices must be strictly adhered to.

C. Only those properly licensed and registered with the State and Federal Regulatory Agency.

D. Government will be permitted to use radiographic or x-ray equipment.

E. Radioactive source containers must be properly identified with a sign, type of source, source strength, date of measurement, etc. All x-ray equipment must be provided with the proper warning signs, shielding, and interlocks and must be operated within the design parameters to minimize leakage and potential overexposure to ionizing radiation.

F. Radioactive sources must never be left exposed or unattended.

G. Areas of radiography work must be barricaded or warning taped, with appropriate warning signs, and cleared of personnel prior to exposing the source.

H. Regardless of reason, all Schmid employees are prohibited from entering areas barricaded or restricted for ongoing radiography work.

I. Individuals who have been potentially exposed to ionizing radiation must immediately report the incident to their Foreman and/or Site Supervisor.

J. Subcontractors of Schmid must be competent, licensed, registered, and familiar with Schmid Safety Procedures and client mandated Safety Procedures before being allowed to perform radiographic work.

K. Accidents or incidents involving radioactive material and or equipment must be immediately reported to the client's Radiation Protection Officer and Schmid Safety Director.

16. **COMPRESSED AIR USE** - Compressed air supplied for instrumentation or utilities shall not be used as a supply for breathing air. Chemicals, liquids, inert gases, or other contaminants have been known to enter into these systems. In some cases, a plant compressed air system may be backed up by nitrogen or other inert gases in the event of compressed air system failure.

A. Compressed air, oxygen, or gas will not be used to clean clothes, work surfaces, or skin.

B. Compressed air supplied for plant utilities must not be used as a source for air-operated tools used in confined spaces.

C. Compressed air used for pneumatic tools, exhaust fans, air movers, etc., and must be provided by a compressor with a proper filtration system.

D. Extreme care must be utilized when locating a compressor and filtration system for use in confined spaces to insure that exhaust fumes from vehicles or vapors and mists from chemicals will not enter the system.

E. Compressed air used in spray operations must be reduced to 30 PSI.

17. **MATERIAL HANDLING AND STORAGE**

A. General Requirements

1. Maximum safe load limits in pounds per square feet must be posted in all storage areas within buildings and structures except floors or slabs.
2. Aisle and passageways must be kept clear for free and safe movement of material handling equipment and employees.
3. Materials must not be placed within 6 feet of hoist way or floor opening or within 10 feet of exterior wall, which do not extend above the top of the material stored.
4. Non-compatible materials must be separated in storage.
5. Bagged materials must be stacked by stepping back the layers and cross laying the bags at least 10 bags high.
6. Materials must not be stored on scaffolds or runways in excess of supplies needed for immediate operations.
7. Brick stacks must be a maximum of 7 feet high. When loose brick stacks reach a height of 4 foot level.
8. When masonry blocks are stacked higher than 6 feet, the stack shall be tapered back one half block per tier above the 6 foot level.

9. Structural steel, poles, pipe, and other cylindrical materials, unless racked, will be stacked and blocked.

10. Lumber piles must not exceed 20 feet in height or 16 feet when lumber is to be handled manually.

WORK RELATED INCIDENT REPORT FORM

For accident investigation of **ANY** Employee Injury,
Utility Hit, Equipment Damage or Property Damage

All incidents must be reported to Kim Smith IMMEDIATELY
(once the accident site is secured and safe) by calling (920) 948-6333.

ADDRESS OF INCIDENT	CITY	STATE	DATE AND TIME INCIDENT OCCURRED

EMPLOYEE INVOLVED	PHONE NUMBER(S)	JOB NUMBER	PERSON REPORTING

ADDITIONAL EMPLOYEE(S) INVOLVED AND PHONE NUMBER(S)

TAKE PICTURES !	WHO DID YOU NOTIFY IN THE COMPANY?		TAKE PICTURES !

JOB SITE SUPERVISOR	DIVISION	WORKING OR WEATHER CONDITIONS

NAMES OF WITNESS(ES) AND PHONE NUMBERS	CAMERA / PHOTOS ATTACHED?

INJURY	UTILITY DAMAGE	EQUIPMENT DAMAGE
IF UNABLE TO RETURN TO WORK CONTACT KIM SMITH AT 920-387-9997 OR 920-948-6333	NAME OF OUR CUSTOMER	EQUIPMENT NUMBER
SPECIFICALLY , WHAT WAS INJURED / SYMPTOMS TODAY	INSPECTOR'S NAME	WHAT WAS DAMAGED
	DAMAGED PARTY / NAME OF UTILITY	
	WAS THE UTILITY DOCUMENTED ON ANY PRINTS	VANDALISM? WHICH POLICE WERE NOTIFIED?
DATE YOU WERE FIRST MEDICALLY TREATED	WAS UTILITY PREVIOUSLY LOCATED? (Y / N) HOW? PAINT / FLAGS / STAKES	HAZARDOUS MATERIAL RELEASED? TYPE AND APPROXIMATE AMOUNT
NAME AND ADDRESS OF PHYSICIAN CLINIC OR HOSPITAL	LOCATE TICKET NUMBER / WERE LOCATES ACCURATE?	**PROPERTY DAMAGE**
	LOCATED BY / WHEN?	PROPERTY OWNER'S NAME:
	NAME(S) OF REPAIRMAN	PROPERTY OWNER'S ADDRESS:
ARE THEY ABLE TO RETURN TO WORK? YES / NO	WHO RESPONDED FIRST TO THE INCIDENT?	
IF NO, HOW LONG WILL YOU BE OFF FROM WORK?	WHAT DID THEY DO?	
CAN YOU RETURN TO WORK WITH NO RESTRICTIONS / SOME RESTRICTIONS		PROPERTY OWNERS PHONE NUMBER

PLEASE GIVE DETAILS ON THE OTHER SIDE

Employee Signature: _____ Date and Time: _____

Supervisor Signature: _____ Date and Time: _____

PLEASE COMPLETE BOTH SIDES

Fax both sides of this form to (920) 387-9984 and send original to the Mayville office.

Schmid Pipeline Construction, Inc.
850 Mallard Drive
Mayville, WI 53050

Phone: (920) 387-9997
Fax: (920) 387-9984

Describe in detail what happened:

Draw a picture of the accident (if applicable) Indicate North by putting an arrow in the circle

Fax both sides of this form to (920) 387-9984 and send original to the Mayville office.

Schmid Pipeline Construction, Inc.

Witness Statement

☐ Involved Employee ☐ Witness

Name: _____ Employee #_____

Address: _____ City: _____

State: _____ Zip Code: _____ Phone Number: _____

Supervisor: _____ Time in Craft: _____

(Please print and be as detailed as possible)

_____

_____

_____

_____

_____

_____

_____

_____

_____ Date: ____/____/____

Signature

Schmid Pipeline Construction, Inc. Job Safety Analysis

Job Name:_____ **Client:** _____

Date:_____ Supervisor (Foreman):_____ JSA Completed By:_____ Job Location:_____

Job Task:_____ Emergency Contact Number:_____ Nearest Public Roadway:_____

Permits Needed for Job: ☐ Excavation ☐ Hot Works ☐ Lock Out / Tag Out ☐ Confined Space Entry ☐ Client Safe Work Permit ☐ Other:_____

Safety Equipment/Specialized PPE for Task: ☐ Road Signage ☐ Overhead power line markers ☐ Safety Fencing ☐ Locks/Tags ☐ 4-Gas Meter ☐ Personal CO Monitors ☐ Light Plants ☐ Respirators ☐ Supplied Air/Masks ☐ Rescue Ropes ☐ Goggles ☐ Face Shields ☐ Other:_____

Task	Potential Hazards	Mitigation Measures	Rate Hazard
Driving to and from job sites Driving on ROW	Motor vehicle crash/Other drivers/Wildlife/ Adverse weather/Limited space	Be observant to other drivers / Drive defensively / Adjust speed to road conditions / Turn lights on / Wear seatbelts / Lock doors / Adjust mirrors and seats / Pre-trip inspection	1
Environmental impact on all tasks	Spills / construction runoff, waterways / air quality disturbance	Inspect equipment/Spill kits available/Install and inspect silt fence or silt socks/No fueling within 100' of wetland/ Turn equipment off when not in use	

Employee Acknowledgement: I hereby acknowledge: that I have attended this safety meeting; I have read and understand this permit; I am fully aware of my obligations at all times to fully comply with this JSA and to report all unsafe acts, unsafe conditions and near misses; and I have had an opportunity to ask questions regarding this JSA

Signatures:_____

_____

_____

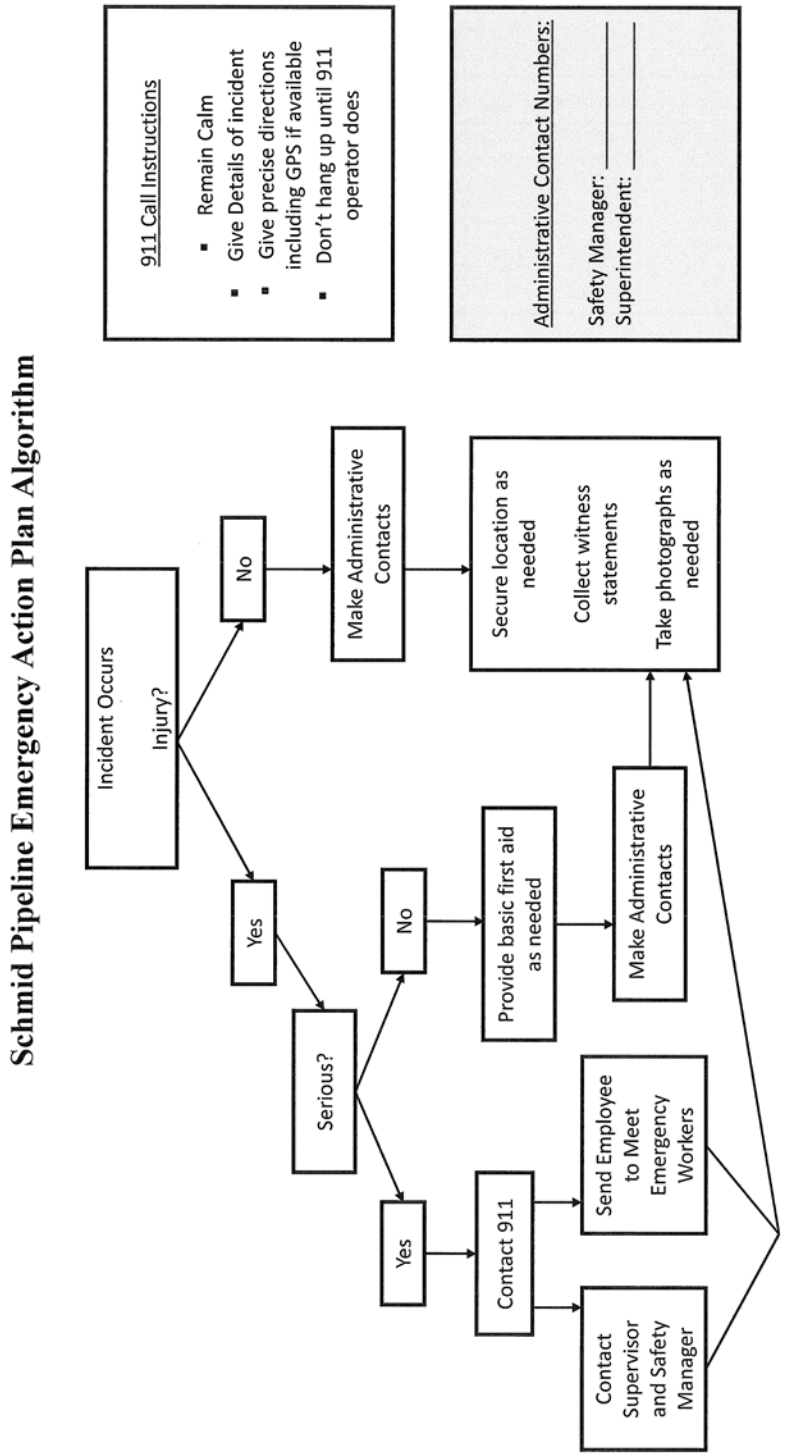
Did any unplanned events occur during the process of work today ☐ No ☐ Yes Explain:_____

JSA Completed by (Signature):_____

Complete a new JSA when: 1) Change of job location that changes the nearest road crossing 2) An Incident Occurs 3) Job Tasks Changes

Job Hazard Ratings: **0** = No hazards **1** = Minimal Hazards **2** = Moderate Hazards **3** = Highly Hazardous

Schmid Pipeline Emergency Action Plan Algorithm



DRIVER'S VEHICLE INSPECTION REPORT

AS REQUIRED BY THE D.O.T. FEDERAL MOTOR CARRIER SAFETY REGULATIONS

CARRIER: _____

LOCATION: _____

DATE: _____ TIME: _____ A.M. _____ P.M.

TRACTOR/ TRUCK NO.: _____ **ODOMETER READING** BEGIN: _____ END: _____

CHECK ANY DEFECTIVE ITEM AND GIVE DETAILS UNDER "REMARKS"

Prt = Pre-Trip **Pot = Post-Trip** **RR = Requires Repair**

Prt	Pot	RR		Prt	Pot	RR		Prt	Pot	RR	
☐	☐	☐	Air Compressor	☐	☐	☐	Front Axle	☐	☐	☐	Safety Equipment
☐	☐	☐	Air Lines	☐	☐	☐	Fuel Tanks				Fire Extinguisher
☐	☐	☐	Battery	☐	☐	☐	Generator				Flags - Flares - Fusees
☐	☐	☐	Belts and Hoses	☐	☐	☐	Horn				Reflective Triangles
☐	☐	☐	Body	☐	☐	☐	Lights				Spare Bulbs and Fuses
☐	☐	☐	Brake Accessories				Head - Stop				Spare Seal Beam
☐	☐	☐	Brakes, Parking				Tail - Dash	☐	☐	☐	Starter
☐	☐	☐	Brakes, Service				Turn Indicators	☐	☐	☐	Steering
☐	☐	☐	Clutch	☐	☐	☐	Mirrors	☐	☐	☐	Suspension System
☐	☐	☐	Coupling Devices	☐	☐	☐	Muffler	☐	☐	☐	Tire Chains
☐	☐	☐	Defroster/Heater	☐	☐	☐	Oil Level	☐	☐	☐	Tires
☐	☐	☐	Drive Line	☐	☐	☐	Radiator Level	☐	☐	☐	Transmission
☐	☐	☐	Engine	☐	☐	☐	Rear End	☐	☐	☐	Trip Recorder
☐	☐	☐	Exhaust	☐	☐	☐	Reflectors	☐	☐	☐	Wheels and Rims
☐	☐	☐	Fifth Wheel					☐	☐	☐	Windows
☐	☐	☐	Fluid Levels					☐	☐	☐	Windshield Wipers
☐	☐	☐	Frame and Assembly					☐	☐	☐	Other

TRAILER(S) NO.(S): 1 _____ **2** _____

Prt	Pot	RR		Prt	Pot	RR		Prt	Pot	RR	
☐	☐	☐	Brake Connections	☐	☐	☐	Landing Gear	☐	☐	☐	Straps
☐	☐	☐	Brakes	☐	☐	☐	Lights - All	☐	☐	☐	Tarpaulin
☐	☐	☐	Coupling Devices	☐	☐	☐	Reflectors/Reflective	☐	☐	☐	Tires
☐	☐	☐	Coupling (King) Pin				Tape	☐	☐	☐	Wheels and Rims
☐	☐	☐	Doors	☐	☐	☐	Roof	☐	☐	☐	Other
☐	☐	☐	Hitch	☐	☐	☐	Suspension System				

Remarks: _____

_____

_____

☐ CONDITION OF THE ABOVE VEHICLE IS SATISFACTORY

DRIVER'S SIGNATURE: _____

☐ ABOVE DEFECTS CORRECTED

☐ ABOVE DEFECTS NEED NOT BE CORRECTED FOR SAFE OPERATION OF VEHICLE

MECHANIC'S SIGNATURE: _____ DATE: _____

DRIVER'S SIGNATURE: _____ DATE: _____

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SECTION 3

PERSONNEL SAFETY RULES

1. CONDUCT

A. All employees are ultimately responsible for their own safety and share the responsibility for the safety of their co-workers, our client's employees, and their property and equipment.

B. Subcontractors are responsible for the safe conduct of their employees and visitors at company managed locations.

C. All employees must comply with Schmid Health and Safety Program, all Federal and State requirements and craft specific safety practices.

D. All employees must comply with the established Safety, Health and Environmental Policies and Procedures of our clients.

E. All employees must comply with posted safety instructions such as posted signs, barricades, barriers, and permit instructions etc.

F. Only those employees qualified and authorized will operate equipment, machinery, power tools, etc.

G. Employees are prohibited from operating equipment, machinery, power tools, vehicles, etc., that are the property of our clients or subcontractors, unless they are qualified and approval obtained from Schmid Site Supervisor and designated client representative.

H. Horseplay, fighting, willful damage of equipment, and failure to report accidents, incidents, occupational illnesses, or injury are cause for request for removal from the site.

I. Firearms or other items that may be considered a weapon shall not be permitted at company work locations.

2. INSPECTION AND USE OF SAFETY DEVICES AND PROTECTIVE EQUIPMENT

A. All employees must use safety devices and protective equipment provided and required by Federal, State, Schmid and our clients.

B. A Competent person shall be assigned to inspect safety devices and protective equipment prior to use and at the completion of use.

C. Any and all defects or damage to safety devices and protective equipment must be reported to Schmid Foreman.

D. Defective and/or damaged safety devices and protective equipment will not be used Items will be clearly identified, indicating the defect or damage and removed from the job site immediately.

E. Damaging, altering, bypassing, or otherwise rendering safety devices and protective equipment ineffective is prohibited.

F. Specific requirements and procedures for the selection and use of safety devices and protective equipment are provided in Section 3 of this manual.

3. EXPOSURE TO TOXIC OR OTHER HAZARDOUS SUBSTANCES

A. Workers performing job assignments associated with Hazardous Substances shall be trained in the proper use, storage, and potential exposure to the substance in accordance with The Hazard Communication Standard or applicable Right to Know. Additionally, contact with Hazardous Substances and Potentially Hazardous Substances are part of every aspect of employment in the construction industry and the home environment.

B. These contaminants may enter the body by any or all of the following methods:

1. Inhalation - The simple act of breathing in airborne vapors, dusts, mists fibers or other particulate matter.
2. Ingestion - Swallowing of contaminants.
3. Injection - (self-explanatory)
4. Absorption - Many contaminants that come in contact with the skin may be absorbed through the skin and passed to the blood stream or nervous system.

C. In general, the best method of avoiding contamination to the body is to avoid contact. However, it is not always entirely possible to avoid contact. The following general rules will lessen the potential risk.

1. All employees must be aware of the hazards of the materials they are handling, working with or near. This information is available through the use of the clients Safety Data Sheets or Schmid Hazard Communication Program.
2. All employees of Schmid or their subcontractors must be trained in the Hazard Communication Standard prior to beginning field assignments.
3. All employees of Schmid or their subcontractors must be knowledgeable of the location and availability of client or Schmid Hazard Communication Program and Safety Data Sheets.
4. Personal Protective Equipment must be properly selected, inspected and used where and when required (See Section 4 of this manual).
5. Food and beverage will not be consumed or stored in areas where contaminants are present.
6. Wash hands prior to eating, drinking or smoking.
7. Never consume food or beverage while wearing contaminated work gloves.
8. Do not allow chemicals, oils or solvents to remain in contact with the skin. Thorough washing with soap and water should be sufficient to clean contaminated skin.
9. Extreme caution must be used when working with corrosive materials, i.e. acids or caustics. These materials can severely damage skin, eyes and mucous membranes. Immediate flushing with large amounts of water and immediate medical attention are required.
10. Never wear clothing or work gloves contaminated with oils, chemicals or solvents.
11. Report all incidents of exposure or contact immediately to your supervisor or client's designated representative.
12. Never wash skin, clothing or gloves with solvents or gasoline.
13. Never place skin in contact with compressed air stream from spray nozzles or hoses operating above 30 PSI.

4. CLOTHING REQUIREMENTS

A. Excessively loose clothing, dangling sleeves, ties, bandannas, scarves, rings, earrings, chains, necklaces, etc., will not be worn while working with moving equipment or tools.

B. Long hair must be kept back from contact with moving or rotating equipment.

C. Long sleeve shirts must be worn while working near hot or cold equipment and surfaces (Consult clients' policies for additional requirements).

D. Short pants, tank tops, muscle type shirts, etc., are unacceptable as work clothing.

E. Clothing contaminated with oils, chemicals, solvents or other hazardous materials must not be worn.

F. Steel toed or Fiberglass toed work shoes (complying with ANSI Standard Z41 or ASTM 2413 Standards) are strongly recommended.

G. Sneakers, canvas shoes, boat shoes, moccasins, high heels, open toed shoes, sandals, etc. are not acceptable foot wear for field assignment. Substantial shoes must be worn.

H. Proper protective clothing must be worn when handling or working on or near equipment known or suspected to have contained hazardous materials.

I. High visibility ANSI Class II vest (yellow) must be worn for all outdoor work.

SECTION 4

PPE

1. INTRODUCTION

Schmid and their clients make every effort to eliminate an employee's exposure to hazards in the work place. Our employees are expected to review the job site to identify and, where possible, eliminate hazards prior to commencing work. Additionally, discussion of identified and potential hazards is an important part of any job planning and execution.

It is not always possible to eliminate all hazards or potential hazards. The best rule of thumb is to expect the unexpected. Properly selected, used, and maintained personal protective equipment has been proven to protect our employees from hazards in the work place. Personal protective equipment use, however, is not an excuse for taking unacceptable risks.

Personal protective equipment must be inspected prior to use and prior to return. It must be kept in a state of good repair and cleanliness. Damaged equipment must be identified and immediately removed from the work site. Equipment temporarily issued by Schmid or their client's must be returned at the end of each workday.

Employees may adjust personal protective equipment for fit. Alteration, change, modification, or use for purposes other than designed and intended is strictly prohibited.

Foreman and Site Supervisors are advised to check with client policy manuals for additional personal protective equipment requirements.

Hazard assessment forms will be filled out prior to commencement of work to determine the job hazards are present or are likely to be present, which necessitate the use of PPE, personal protective equipment to be worn and signed by all employees on that project. The exposure determination shall be made without regards to the use of personal protective equipment. Certifier must sign and date the form.

When it is established that Personal Protective Equipment is needed a training program shall be put in place that will include the following:

1. When PPE is necessary
2. What PPE is necessary
3. Limitations
4. Proper care
5. Maintenance
6. Useful life and disposal

Retraining is required when:

1. Change in workplace occurs
2. Type of PPE changes
3. Employee shows lack or improper use, or understanding

Certification for training must include employee name, dates of training, and the certification subject. All Personal Protective Equipment Shall be provided to employees at no cost to the employee. Employees are not permitted to use personally owned PPE unless approved by the Site Supervisor or designated safety representative.

2. **HEAD PROTECTION**

A. OSHA References - ANSI Standard Z89.2-1971, ANSI Standard Z89.1-1969, 29 CFR 1926.951(a)(2), 29 CFR 1910.135

1. Head protection for Schmid employees will comply with ANSI Standard Z89.2-1971 and will provide protection from falling objects, electric shocks, or burns. (Compliance and testing data should be indicated or stamped into the helmet).
2. Head protection is required to be worn while performing all mechanical, construction, and maintenance work.
3. Head protection is required when visiting work sites as described above.
4. Head protection is not required in buildings, passenger vehicles, trucks, or enclosed heavy equipment cabs, or other areas that have been designated by Schmid or the client designated representative as not requiring head protection.
5. Aluminum head protection and bump hats will not be worn.
6. Head protection will be used and cared for in the following manner:
   a) Helmets must be worn straight and squarely on the head with the bill and peak facing forward.
   b) The cradle must be adjusted so that there is a 1 inch minimum clearance between head and the shell.
   c) Helmet shells and suspension systems may be adjusted but not altered or modified (i.e. drilling ventilation holes in helmet or taping suspension together).
   d) Helmets must be inspected daily and replaced at the first sign of damage or excess wear.
   e) Suspensions and helmets may be cleaned with mild soap and water only. The use of solvents may damage the helmet and suspension material, thereby weakening the capability of the equipment.
   f) The use of warning or hazard labels and stickers on head protection is prohibited.

3. **HEARING PROTECTION POLICY AND PPE** - The business of Schmid is to supply qualified crafts people and service to our clients. We have few permanent work locations in which engineering and noise monitoring data may be obtained and maintained. Our employees are reminded that hearing protection is required in all client locations or Schmid locations that are marked by signs indicating the need for hearing protection. Further, client designated representatives may require the use of hearing protection via the work permitting system. Where noise exposure readings are not available, employees must be aware of a simple rule. **If you must raise your voice to be heard above background noise or equipment noise, ear protection is required.**

A. OSHA References - 29 CFR 1926.52, 29 CFR 1926.101, 29 CFR 1910.95

B. Objectives

1. To ensure that no employee will be exposed to noise levels at or above 85dBA without approved hearing protection equipment.
2. To provide a Hearing conservation program for all employees regularly exposed to hazardous noise in their assigned duties.
3. To identify hazardous noise areas and sources through appropriate monitoring surveys and evaluate protection for specific environments.

4. To clearly identify hazardous noise areas with designated noise signs.
5. To maintain a noise-monitoring program that will detect hazardous noise levels of specific job duties and various work areas.
6. To conduct audiometric examinations annually for employees exposed to hazardous noise exposure as required by OSHA 29 CFR 1910.95.

C. Responsibilities
1. Designated Site Safety Person
   a) Identify hazardous noise areas.
   b) Monitor each fixed facility job classification to determine noise exposure levels.
   c) Assure that personnel are trained in the proper usage of the hearing protection equipment and the importance of hearing conservation.
   d) Coordinate retraining of employees identified with significant threshold shifts.
   e) Conduct periodic field checks to determine if employees are complying with the hearing conservation program.
   f) Make certain the program complies with Federal, State and Local regulations.
   g) Notify each employee of his or her audiometric test results.
   h) The employer shall evaluate hearing protection for the specific noise environments in which the protector will be used.
2. Supervisors
   a) Insure that all elements of the Hearing Conservation Program are followed.
   b) Enforce the wearing of personal hearing protection in hazardous noise areas.
   c) Alert the Safety Representative of process/equipment changes which would affect the noise level in the area.
   d) Maintain a supply of hearing protectors in the work area.
   e) Enforce use of hearing protection devices in areas where applicable.
3. Employees
   a) Comply with the guidelines of the hearing conservation policy.
   b) Use the provided hearing protection equipment in accordance with the training and instruction received.
   c) Notify the supervisor immediately when conditions or practices change and result in increased noise levels.
   d) Affected employees will be notified of both monitoring and audiometric testing results, which pertain to the employee.

D. Exposure Limits Hearing protection must be worn when the sound levels exceed the following:

Duration (hours per day)	dBA
8	90
6	92
4	95
3	97
2	100
1.5	102
1	105
0.5	110
0.25	115

Note - Exposure to impulsive or impact noise must not exceed 140 dB peak sound pressure level.

E. Monitoring for Noise Exposure

1. Personnel - Each job classification or fixed facilities will be monitored periodically for 8 hour noise exposure levels (at least every 2 years).
2. Area - Each project/facility will be monitored for hazardous noise areas. The area will be re-monitored during and after major process/equipment changes. Areas, which have high noise levels greater than or equal to 85dBA must be posted with appropriate warning signs.

F. Selection of Protective Equipment Hearing protection equipment should be selected in accordance with OSHA 29 CFR 1926.101. High quality, disposable earplugs are recommended.

G. Use of Hearing Protection Hearing protective devices will be provided at no cost to the employee.

1. Disposable foam hearing devices are recommended.
   a) Roll plugs between clean fingertips.
   b) Pull back gently on the back of the ear.
   c) Gently insert, do not force, ear plug into ear.
   d) The foam earplug will expand.
2. Form fitting earplugs may be used providing a competent individual has provided them.
3. Approved earmuffs may be worn; however eyewear earpieces that break the seal may reduce their effectiveness.
4. Cotton, lamb's wool, or other non-approved material will not be used.
5. Do not handle ear protection with dirty hands or gloves.

H. Mandatory Hearing Protection Wear - Employees involved in the following work activities will wear hearing protection:

1. Working with compressors, jackhammers, pile driving equipment, chain saws, gas, or diesel driven welding machines, powder actuated tools, impact tools.
2. Working on or near steam leaks.
3. Working with hand operated impact tools, (i.e. sledge hammers) inside of confined space.

4. In any area posted as requiring hearing protection, either by sign or work permit instructions.

The supervisor and/or designated site safety person shall enforce the wearing of hearing protection in hazardous noise environments.

I. Medical Surveillance - Fixed facilities (excluding construction projects) shall perform audiometric examinations annually on employees exposed to hazardous noise. The audiometric examination will be used to gather baseline data and to detect hearing losses. A Baseline audiogram shall be conducted for each exposed employee within six months of first exposure. Initial baseline testing will be done after at least 14 hours without exposure to workplace noise.

All personnel, excepting construction, who are regularly exposed to occupational noise in the course of performing their assigned job duties, at or above an 8 hour TWA or 85dBA sound level will be included in the Hearing Conservation Program and will receive audiometric testing

When Significant Threshold Shift (STS) is determined, the employee will be notified in writing within 21 days of the STS determination. Hearing protection shall be reevaluated and or refitted and if necessary additional medical evaluations shall be conducted. The safety representative shall also be informed of the employees STS so the employee may be included in the Hearing Conservation Program.

J. Effects of Exposure to noise levels above those posted in this policy can cause temporary hearing loss. Extended exposure can and will cause permanent hearing loss. Other effects of exposure can be fatigue and irritability as well as partial loss of hearing in some tones. If you notice any of these effects, report it to your supervisor immediately.

K. Training - The objective of the Hearing Conservation Program is the education of employees in the procedures to minimize noise exposure. All Employees will be trained once a year in the Hearing Conservation Program. The following subjects will be covered in the training.

1. Fundamentals of noise
2. Hearing loss cause and prevention
3. Needs and benefits of the Hearing Conservation Program
4. Hearing protection devices, proper use and care
5. Explanation of audiometric testing
6. Location of hazardous noise areas

L. Documentation - In addition to documentation being maintained on noise surveys, hearing examinations, and training, documentation shall be maintained on the types of hearing protection provided and its application. This documentation will be maintained at the main office.

4. EYE AND FACE PROTECTION POLICY

A. OSHA References - 29 CFR 1926.102, 29 CFR 1910.133, ANSI Standard Z87.1-1968

B. Policy - ANSI Standard Z87 approved safety glasses, with side shields, shall be worn at all times on every construction and maintenance site. Visitors to these sites shall comply with this policy. Goggles/face shields shall be worn while working with a pneumatic or electrical tool, which may produce dust, chips, or air born objects. Tools such as a jackhammer, chipping gun, grinder, beveling machine, etc., require the use of face shields.

1. Eyewear worn at Schmid sites must comply with ANSI Standard Z87 requirements for impact and shatter resistance for both lens and frames.
2. Contact lenses will not be worn on Schmid sites.
3. All prescription glasses shall have approved safety lens and frames or must be worn under goggles at all times.
4. Eyewear will be examined for scratches, pitting and frame damage. Scratches, pitting, and frame damage weaken the impact and shatter resistance of the eyewear. Worn or damaged equipment will be replaced immediately.
5. Non-conductive eyewear will be worn while working on live, exposed electrical parts.

C. Selection Guide for Eye Wear and Face Wear

1. Acetylene burning, cutting, or welding
    a) Welding goggles, eyecup type with tinted lenses
    b) Welding goggles, cover spec type with tinted lenses
    c) Welding goggles, cover spec type with tinted plate lens
2. Chemical Handling
    a) Full face shield (preferred for severe exposure hazard)
    b) Goggles, flexible fitting, with hooded ventilation
    c) First Break hood with safety glasses or goggles
3. Electric Arc Welding
    a) Welding helmet with tinted lenses
4. Employees are reminded that compliance with client requirements is mandated, provided the clients policy meets or exceeds the Schmid Policy.

D. Selection Guide for Filter Lens Shades for Protection against Radiant Energy:

ACTIVITY	SHADE
Shielded metal-arc welding 1/16, 3/32, 1/8, 5/32 inch diameter electrodes	10
Gas shielded arc welding (nonferrous) 1/16, 3/32, 1/8, 5/32 inch diameter electrodes	11
Gas shielded arc welding (ferrous) 1/16, 3/32, 1/8, 5/32 inch diameter electrodes	12
Shielded metal-arc welding 3/16, 7/32, 1/4 inch diameter electrodes	12
Shielded metal-arc welding 5/16, 3/8 inch diameter electrodes	14
Atomic hydrogen welding	10-14
Carbon Arc Welding	14
Soldering	2
Torch brazing	3 or 4
Light cutting up to 1 inch	3 or 4
Medium cutting 1 inch to 6 inches	4 or 5
Heavy cutting over 6 inches	5 or 6
Gas Welding (light), up to 1/8 inch	4 or 5
Gas Welding (medium) 1/8 inch to 1/2 inch	5 or 6
Gas Welding (heavy) over 1/2 inch	**6 or 8**

E. Eye Wash Facilities - Where the eyes or the body of any person may be exposed to injurious corrosive materials, suitable facilities for quick drenching or flushing of the eyes and body will be provided within the work area for immediate emergency use. These facilities may be portable, but must be located within 50 feet of the hazard and capable of providing 15 minutes of continuous flow. Client provided facility locations should be noted by Schmid employees and checked for operation prior to commencement of work. Please pay specific attention to the water flow temperature, as many may overheat. If temporary or portable facilities are required, notify your immediate supervisor.

5. GENERAL RESPIRATORY PROTECTION PROGRAM

A. OSHA References - 29 CFR 1910.134, 29 CFR 1926.103

B. General - This section provides the Schmid Policy and procedures for the use, selection, care and issuance of respiratory protective equipment. Schmid foreman must consult client established procedures. Where the client's procedures meet or exceed this policy, the client procedure will be used. This program applies to all employees who are required to wear respirators provided by Schmid during normal work operations, and during some non-routine or emergency operations such as a spill of a hazardous substance.

1. When effective engineering controls are not feasible, Engineering controls are being instituted, but not yet complete or the potential exists for employee exposure to breathing

air contaminated with harmful dusts, mists, gases, smokes, sprays or vapors, respiratory protection shall be used.

2. Respiratory protective devices will not be issued to individuals not properly trained in their use, care and selection. Individuals must be fit tested within the last twelve months prior to issuance. Schmid does not provide in- house fit testing and training in respiratory protection. Documentation of training and testing by an approved and qualified individual is required prior to assigning any Schmid employee to tasks requiring respiratory protective equipment.
3. Employees who voluntarily wear filtering face piece respirators (dust masks) are not subject to the medical evaluation, cleaning, storage, and maintenance provisions of this program.
4. Respiratory hazard determinations will be conducted for each individual job site.
5. Respiratory protection will be based on the requirements of the job site if it is deemed there is a need to have them on-site.
6. Medical, respirators, and training shall be provided by Schmid to each employee at no cost to the employee.

C. Selection of Respiratory Protection - The Program Administrator will select respirators to be used on Schmid sites, based on the hazards to which workers are exposed and in accordance with all OSHA standards. The Program Administrator will conduct site specific hazard evaluations for each operation, process, or work area where airborne contaminants may be present in routine operations or during an emergency. The hazard evaluation will include:

1. Identification and development of site specific lists of hazardous substances used in the workplace by the Supervisor.
2. Site specific review of work processes to determine where potential exposures to these hazardous substances may occur. This review shall be conducted by surveying the workplace, reviewing process records, and talking with employees and supervisors.
3. Exposure monitoring to quantify potential hazardous exposures.
4. Relevant historical data on employee exposures provided by the client.
5. Brands and models of NIOSH approved respirators for the hazards.

D. Updating the Hazard Assessment - The Program Administrator must revise and update the hazard assessment as needed (i.e., anytime work process changes may potentially affect exposure). If an employee feels that respiratory protection is needed during a particular activity, he/she is to contact his or her supervisor or the Program Administrator. The Program Administrator will evaluate the potential hazard, arranging for outside assistance as necessary. The Program Administrator will then communicate the results of that assessment back to the employees. If it is determined that respiratory protection is necessary, all other elements of this program will be in effect for those tasks and this program will be updated accordingly.

E. NIOSH Certification - All respirators must be certified by the National Institute for Occupational Safety and Health (NIOSH) and shall be used in accordance with the terms of that certification. Also, all filters, cartridges, and canisters must be labeled with the appropriate NIOSH approval label. The label must not be removed or defaced while it is in use.

F. Responsibilities

1. The Program Administrator is responsible for administering the respiratory protection program. The Program Administrator must be knowledgeable of the complexity of the program, conduct evaluations, and be properly trained, address appropriate surveillance, and ensure employees leave the area to wash, change cartridges, or if they detect break-through or resistance.

2. The employer is required to establish and retain written information regarding medical evaluations, fit testing, and the respirator program. Records of medical evaluations required by this section must be retained and made available in accordance with OSHA 29 CFR 1910.1020.The Program Administrator will maintain the records and the companies Main Office. Other duties of the program administrator include:

a) Identifying work areas, processes or tasks that require workers to wear respirators, and evaluating hazards.

b) Selection of respiratory protection options.

c) Monitoring respirator use to ensure that respirators are used in accordance with their certifications.

d) Arranging for and/or conducting training.

e) Ensuring proper storage and maintenance of respiratory protection equipment.

f) Conducting qualitative fit testing.

g) Administering the medical surveillance program.

h) Maintaining records required by the program.

i) Evaluating the program.

j) Updating written program, as needed.

3. Supervisors are responsible for ensuring that the respiratory protection program is implemented on their particular jobsite. In addition to being knowledgeable about the program requirements for their own protection, supervisors must also ensure that the program is understood and followed by the employees under their charge. In addition, the program should be monitored for program effectiveness these duties of the supervisor include:

a) Ensuring that employees under their supervision (including new hires) have received appropriate training, fit testing, and annual medical evaluation ensuring the availability of appropriate respirators and accessories.

b) Being aware of tasks requiring the use of respiratory protection.

c) Enforcing the proper use of respiratory protection when necessary.

d) Ensuring that respirators are properly cleaned, maintained, and stored according to the respiratory protection plan.

e) Ensuring that respirators fit well and do not cause discomfort.

f) Continually monitoring work areas and operations to identify respiratory hazards.

g) Coordinating with the Program Administrator on how to address respiratory hazards or other concerns regarding the program.

4. Each employee has the responsibility to wear his or her respirator when and where required and in the manner in which they were trained. Employees must also:

a) Care for and maintain their respirators as instructed, and store them in a clean sanitary location.

b) Inform their supervisor if the respirator no longer fits well, and request a new one that fits properly.

c) Inform their supervisor or the Program Administrator of any respiratory hazards that they feel are not adequately addressed in the workplace and of any other concerns that they have regarding the program.

d) Provide feedback to the Program Administrator when asked about fit, selection, use, maintenance so program effectiveness can be verified.

G. Types of Respiratory Protective Equipment

1. Air Purifying Respirators - These air purifying respirators are used to filter contaminants from the air.

Air purifying respirators must not be used in Oxygen deficient atmospheres or in areas where the concentration of airborne contaminants exceed the level for which the cartridge is approved.

a) Filtering Face piece Respirator - This respirator is designed to provide protection from non-hazardous nuisance dusts and non-hazardous vapors.

b) Gas Mask (canister) Respirators - These respirators may be in use at some client locations.

c) Cartridge Respirators - These respirators are available in full or half face design. Replaceable cartridges are used to provide filtration of materials. A check valve allows for exhalation of air and closes to prevent intake of unfiltered air. They provide protection against low concentrations of airborne contaminants. It is extremely important that the proper cartridge be selected.

d) Filtering face piece respirators, Gas Mask (canister) Respirators and Cartridge Respirators are effective when properly selected, fitted and used. Cartridges, canisters and dust respirators must be replaced when breathing becomes difficult and/or the wearer detects breakthrough of the filtering device by smelling and/or tasting the contaminant. Caution: Many hazardous materials do not possess good warning characteristics. Several will hamper or deaden your sense of smell at higher concentrations. Periodic replacement of cartridge, canister or dust respirator is required.

2. Self-Contained Breathing Apparatus (SCBA) - Warning devices and configuration of SCBA may differ from manufacturer to manufacturer. In addition to proper use of SCBA, training and, familiarization with the specific equipment configuration and warning devices of the model are required before use. It is not possible to provide specific manufacturer information on all SCBA that Schmid employees may encounter. The following information is provided in generic terms.

3. Escape Capsules - These devices are generally equipped with a clear plastic over the head hood. They are approved for escape purposes only and may not be used for the performance of work requiring respiratory protection.

4. Air Packs are the standard self-contained breathing apparatus to be used where oxygen or a hazard exists or may exist. Pure self-contained breathing air from a high-pressure cylinder(s) is supplied to the facemask, continuously, to provide air required for breathing. The mask provides good visibility and can be fitted with an anti-fogging nose cup. The plastic lens is subjected to the same testing as chipping goggles for needle puncture and impact. These devices may provide 1/2 hour or 1 hour (estimated) breathing air. It is important to that several factors, i.e. exertion, heat, physical condition of the user, etc. will determine the amount of time the supply of breathing air will last.

5. Supplied Air Respirators (SAR) - When it is necessary to perform duties of a non-emergency nature in contaminated areas the use of an airline must be considered.

a) Supplied air respirators (SAR) provide breathing air to the wearer through a hose from an independent 300 CF breathing air cylinders, air compressor or specially filtered air compressor.

b) An escape or egress bottle must be used in areas where an oxygen deficient atmosphere or contaminants that are immediately dangerous to life and health exists (IDLH). SAR must never be connected to plant utility air or instrument air systems.

c) Outside standby persons, maintaining communication, proper training and equipment, notification procedures, and necessary action. Mandatory equipment must include SCBA or SAR with auxiliary air supply and appropriate retrieval equipment or equivalent rescue means.

6. Respirator Fitting Requirements - Schmid will ensure that all employees using tight fitting face piece respirators pass an appropriate qualitative or quantitative fit test prior initial usage, if a different respirator is used, and annually. SARs are required to be fit tested as well. All fit tests will be conducted in accordance with OSHA 29 CFR 1910.134 Appendix A.

a) Qualitative fit tests (i.e. Irritant smoke, banana oil) may only be used to fit test negative pressure respirators which much achieve a fit factor of 100 or less.

b) Quantitative fit tests (i.e. Porta count) are required for negative pressure respirators which must achieve a fit factor greater than 100.

The following table should be used to determine the acceptable fit test for the respirator selected.

ACCEPTABLE FIT-TESTING METHODS		
Respirator	**Qualitative**	**Quantitative**
Half Face, Negative Pressure, APR (<100 fit factor)	Yes	Yes
Full Face Negative Pressure, APR (<100 fit factor) used in atmospheres up to 10 times the PEL	Yes	Yes
Full Face, Negative Pressure, APR (>100 fit factor)	No	Yes
PAPR	Yes	Yes
SAR or SCBA used in Negative pressure mode (>100 fit factor)	No	Yes
SAR or SCBA Positive Pressure Mode	Yes	Yes
SCBA- Structural Fire Fighting Positive Pressure	Yes	Yes
SCBA/SAR- IDLH, Positive pressure	Yes	Yes
Mouth bit respirators	Fit-Testing Not Required	
Loose fitting respirators		

H. Face Seal Protection - Employees whose job function includes tasks, which require the use of respiratory protection, must be able to achieve a leak tight seal and must have nothing inside the face piece, which interferes with the valve function. The following items are known to interfere with a tight seal:

1. Facial abnormalities or absence of dentures.

2. Eyeglasses with temple pieces extending under the sealing surface of the mask.
3. Hairstyles, sideburns, beards and long mustaches that extend into the sealing surface of the mask. (Note: check client's facial hair policy).
4. Sweatbands, helmet liners or other headgear or appliances that come between the sealing surface and the face.

Job tasks requiring the use of respiratory protective equipment will not be assigned to employees that cannot obtain and maintain a seal.

I. Training - All Schmid personnel who are required to use a respirator must receive training, at least annually, in the proper selection, use, care and fitting of the respirator. Schmid will secure the services of a qualified consulting firm for the purpose of providing this training and refresher training on an as needed basis. Employees must be trained on knowledge of respirators, fit, use, limitations, emergency situations, wearing, fit checks, maintenance and storage, medical signs and symptoms of effective use, and general requirements of the OSHA standard.

J. Inspection Prior To Use - All respirators must be inspected prior to use. Specific attention must be paid to cleanliness, condition of mask sealing surface, condition of face plate and face plate seal, cartridges etc. Damaged equipment will not be used and must be identified and returned immediately.

K. Field Fit Test - Qualified Schmid employees required to work in respiratory protection will perform a negative and positive pressure fit test prior to entering the hazardous environment.
1. Positive Pressure Test - Cup or otherwise close the exhalation valve and exhale gently into the face piece. The fit is considered to be satisfactory, if slight positive pressure can be held without leakage at the seal.
2. Negative Pressure Test - Close off the inlet openings of the cartridge with the palms of your hands. Inhale gently, collapsing the face piece slightly against the face. Do not breathe for approximately 10 seconds. If the face piece remains in the collapsed position, the fit is satisfactory.

L. Care and Maintenance - Respirators shall be regularly cleaned and disinfected. Respirators used by more than one individual will be thoroughly cleaned and disinfected at the end of each individual use and prior to issuance to the next individual. An individual specifically qualified to perform maintenance on respiratory equipment will perform maintenance. Cleaning and disinfecting of respirators will be done in accordance with OSHA 29 CFR 1910.134 Appendix B-2.

M. Respirator Storage - Respirators must be stored in a convenient, clean and sanitary location.

N. Medical Evaluation - Employees who are either required to wear respirators, or who choose to wear an APR voluntarily, must pass a medical exam before being permitted to wear a respirator on the job. Employees are not permitted to wear respirators until a physician has determined that they are medically able to do so. Any employee refusing the medical evaluation

will not be allowed to work in an area requiring respirator use. Medical Evaluations will be conducted by a Physician or licensed Health care provider in accordance with OSHA 29 CFR 1910.134(e).

1. The employee will be sent directly to a Physician or Licensed Health care Practitioner for medical evaluation.
2. The medical evaluations must be confidential, during normal working hours, convenient, understandable, employee given chance to discuss results with PLHCP.
3. Follow-up medical exams will be granted to employees as required by the standard, and/or as deemed necessary by the designated medical clinic physician.
4. All employees will be granted the opportunity to speak with the physician about their medical evaluation, if they so request.
5. Any employee required for medical reasons to wear a positive pressure air purifying respirator will be provided with a powered air purifying respirator.
6. After an employee has received clearance and begun to wear his or her respirator, additional medical evaluations will be provided under the following circumstances:
   a) Employee reports signs and/or symptoms related to their ability to use a respirator, such as shortness of breath, dizziness, chest pains, or wheezing.
   b) Information from this program, including observations made during fit testing and program evaluation, indicates a need for reevaluation.
   c) A change occurs in workplace conditions that may result in an increased physiological burden on the employee.

All examinations and questionnaires are to remain confidential between the employee and the physician. The medical condition of employees assigned to work requiring respiratory protection is of concern. Those employees having medical conditions, i.e. upper respiratory infections, severe asthma, known heart conditions, or ruptured ear drums must not be assigned respiratory protection required work.

Program Administrator is required to establish and retain written information regarding medical evaluations, fit testing, and the respirator program. Records of medical evaluations will be retained at Schmid home office by the Program Administrator. Copies can be obtained from the Program Administrator as needed.

O. Air Quality - Breathing air must meet, at a minimum, the requirements of the specification for Grade D breathing air as described in Compressed Gas Association Commodity Specification G-7.1-1966. (Consult OSHA 29 CFR 1910.134(d) for other air source requirements).

P. Breathing air may be supplied to respirators from cylinders or air compressors.

1. Cylinders shall be tested and maintained as prescribed in the Shipping Container Specification Regulations of the Department of Transportation (49CFR part 178).
2. Compressors for supplying air shall be equipped with safety and standby devices. A breathing air type compressor shall be used. Compressors shall be constructed and situated as to avoid entry of contaminated air into the system and suitable in-line air purifying sorbent beds and filters installed to further assure breathing air quality. A receiver of sufficient capacity to enable the respirator user to escape from a contaminated atmosphere in event of Compressor failure, and alarms to indicate compressor failure and overheating shall be installed in the system. If an oil-lubricated compressor is used, it shall have a high temperature alarm or

carbon monoxide alarm or both. If only a high temperature alarm is used, the air from the compressor shall be frequently tested for carbon monoxide to insure that it meets the specifications outlined in this section.

Q. Airline couplings shall be incompatible with outlets for other gas systems to prevent inadvertent servicing of airline respirators with irrespirable gases or oxygen.

R. Containers - Breathing gas containers shall be marked in accordance with American National Standard Method of Marking Portable Compressed Gas Containers to Identify the Material Contained (ANSI Standard Z48.1-1954).

S. Safety - In areas where the wearer, with failure of the respirator, could be overcome by a toxic or oxygen deficient atmosphere, at least one additional man shall be present. Communications by voice, visual or signal line must be maintained between both or all individuals present. Planning shall be such that one individual will be unaffected by any likely incident and have the proper rescue equipment to be able to assist the other(s) in the event of an emergency.

When self-contained breathing apparatus or hose masks with blowers are used in atmospheres immediately dangerous to life or health, standby employees must be present with suitable rescue equipment.

Persons using airline respirators in atmospheres immediately hazardous to life and health shall be equipped with safety harness 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. A standby person (s) with suitable self-contained breathing apparatus shall be at the nearest fresh air base for emergency protection. This individual will be responsible to monitor compressor alarms and/or air cylinder pressure and must be in visual, verbal contact with the safety observer.

6. PROTECTIVE EQUIPMENT FOR ABRASIVE BLASTING

A. OSHA References - 29 CFR 1910.94

B. In abrasive blasting operations, the following apply:

1. Surface to be blasted must be tested for lead content.
2. Continuous flow airline respirator constructed so that it will cover the wearers head, neck and shoulders to protect him from rebounding abrasives will be worn.
3. Only respiratory protective equipment approved by the Bureau of Mines, US Department of the Interior (30CFR Part 11) shall be used for protection of personnel against dusts produced during abrasive blasting operations.
4. All abrasive blasting operators shall wear abrasive blasting respirators.
5. When using silica sand in manual-blasting operations where the nozzle and blast are not physically separated from the operator in an exhaust ventilated enclosure, the operator shall wear abrasive-blasting respirators.

7. HAND PROTECTION

A. OSHA References - 29 CFR 1926.28

B. General - Hand protection against heat, flame, cold, corrosive materials, moisture, abrasion, electricity, sharp surfaces, rough surfaces, etc. is available for use. The selection of the proper work glove for the hazard should follow the following guidelines:

1. Heat and cold protective gloves must be used during any job function where contact is probable with hot objects or extremely cold objects i.e. dry ice, liquid nitrogen, liquid oxygen, etc.
2. Welding operations require the use of welder's leather gloves, protective leather sleeves or jacket and chaps.
3. Handling or contact with chemicals, solvents and oils require the use of neoprene and plastic coated gloves. These gloves must be washed or wiped before removal and changed frequently.
4. General work gloves of leather or leather palmed are required for most job tasks assigned to Schmid.
5. Chisel or hand held impact tools should be equipped with hand guards to prevent accidental striking of hands and fingers.
6. Electrically Tested Gloves - Rubber protective equipment for electrical workers must meet the specifications and requirements established in ANSI Standard J6.6-1971. Dates of testing must be stamped on the glove. A visual inspection of these gloves must be performed prior to and after use. An air test is required for rubber gloves prior to use. Leather over gloves will be inspected prior to use. Electrically tested gloves that are out of date of inspection or fail visual and/or air testing shall be immediately removed from service.

8. BODY HARNESS AND LANYARDS

A. OSHA References - 29 CFR 1926.104, 29 CFR 1926.959, 29 CFR 1926.502

B. General - The purpose of this section is to define the requirements for safety belts, harnesses, lanyards and lifelines. More detailed information on fall protection is included in the Schmid Fall Protection Policy.

In Accordance with OSHA 29 CFR 1926.502 Body belts are not acceptable as part of a personal fall arrest system.

1. Lifelines, full body harness and lanyards shall be used only for the safeguarding of employees. Lifelines, full body harness and lanyards subjected to in service loading immediately removed from service as an employee protective device and will not be placed back in service as an employee protective device.
2. Lifelines will be secured above the point of operation to an anchorage or structural member capable of supporting a minimum dead weight of 5400 pounds. Lifelines will not be anchored or secured to hot piping, electrical conduit or points with sharp edges that may damage the lifeline by cutting or abrasion.
3. A minimum of 3/4 inch or equivalent manila rope with a minimum breaking strength of 5400 pounds will be used. Shock absorbing lanyards are recommended.

4. Full body harness lanyards shall be a minimum of ½ inch nylon, or equivalent, with a maximum length to allow a fall of no greater than 6 feet. The rope shall have a minimum breaking strength of no less than 5400 pounds. Shock absorbing lanyards are strongly recommended for safety belt use.
5. Full body harness and lanyard hardware must be drop forged or pressed steel, cadmium plated in accordance with type 1, class b plating as specified in Fed spec QQ-P-416. The surface of the hardware must be smooth and free of burrs or sharp edges.
6. All full body harness and lanyard hardware must be capable of withstanding a tensile loading of 4000 pounds, without cracking, breaking or deforming.

C. Lineman's body belts, safety straps and lanyards must comply with the requirements outlined in OSHA 29 CFR 1926.959(a)(b). Consult standard for specifics.

9. SAFETY NETS

A. OSHA References - 29 CFR 1926.105

B. General - Safety nets must be provided when workplaces are more than 25 feet above the ground or water surface or other surfaces where the use of ladders, scaffold, catch platforms, temporary floors, safety lines or safety belts is impractical. If a safety net required, work will not commence until the net is installed.
1. Nets must extend 8 feet beyond the edge of the work surface where the employees are exposed and installed as close as practical under the work surface, but not more than 25 feet.
2. The net must be hung in a manner that would prevent the employee from coming in contact with surfaces or structures below the net. The clearances will be determined by impact load testing data.
3. The mesh size of nets must not exceed 6 inches by 6 inches. All new nets must meet an accepted performance standard of 17,500 pounds minimum impact resistance as established and certified by the manufacturer and must bear a label establishing proof of the test.
4. The edge ropes of nets must provide a minimum breaking strength of 5000 pounds.
5. Forged steel safety hooks or shackles must be used to fasten the net to its supports.
6. Connections between the net panels must develop the full strength of the net.

10. PROTECTIVE EQUIPMENT REQUIREMENTS NEAR OR OVER WATER

A. OSHA References - 29 CFR 1926.106

B. General - All Schmid employees working over or near water, where the danger of drowning exists must be provided with U.S. Coast Guard approved life jackets or buoyant work vests. Foremen are reminded to check client procedures for specific locations requiring near water or over water protective equipment.

1. Each life jacket, work vest or life preserver must be inspected for defects, damage (i.e. rips and damaged straps), or any other defect/damage that would alter its strength. All damaged or defective equipment must be removed from the work site immediately.
2. Ring buoys with a minimum of 90 feet of line attached must be provided and readily available for emergency rescue operations.
3. The distance between ring buoys must not be greater than 200 feet.
4. Ropes and ring buoys must be inspected for damage and defect prior to use. Defective equipment must be removed and replaced immediately.
5. At least one lifesaving skiff must be immediately available at locations where employees are working over or adjacent to water.

SECTION 5

HAND AND POWER TOOLS

1. POWER TOOLS

A. OSHA References - 29 CFR 1926 Subpart I (300-307)

B. Employees using hand and power tools and exposed to the hazard of falling, flying, abrasive, and splashing objects, or exposed to harmful dust, fumes, mists vapors, or gases shall be provided with particular PPE necessary to protect them from the hazard by Schmid at no cost to the employee.

C. Hand tools are non-powered tools and include anything from axes to wrenches. The greatest hazard posed by hand tools result from misuse and improper use.

1. All tools will be used for their designed purpose (i.e. a screwdriver may not be used for a chisel).
2. The handles and point where the head attaches to the handle must be inspected prior to use. Loose heads will be repaired prior to use and tools with damaged, splintered or cracked handles will not be used until repaired.
3. Wrenches must not be used as hammers. Pipe wrench teeth must not be worn smooth or broken. Wrenches with sprung jaws will not be used.
4. Pipes and bars will not be used on wrench handles for increased leverage.
5. Impact tools, such as chisels, wedges, or drift pins may not be used if the head is mushroomed or the blade has been "blued" by overheating during sharpening operations.
6. Chisels and punches should be equipped with hand/wrist impact guards.
7. Caution - Spark Resistant tools are recommended when working around combustible or flammables.

D. Power tools are divided in categories based on the power source used, i.e. electric, pneumatic, liquid fuel, hydraulic and powder actuated. Employees must be trained and qualified in the use of power tools and the special hazards they present. Whether furnished by the employer or the employee, the tools shall be maintained in a safe condition. The following general precautions must be followed:

1. Never carry a tool by the cord or the hose.
2. Never yank the cord or hose to disconnect from the power source.
3. Keep all cords and hoses away from sharp edges, hot objects, solvents and oils.
4. Disconnect tools when not in use, before servicing and when changing accessories such as blades, bits and cutters. The plug or connection must be disconnected from the power source and clearly visible to the individual servicing the equipment or the lockout procedure must be followed.
5. All observers should be kept at a safe distance from the work area.
6. Work should be secured with clamps or a vise, freeing both hands to operate the tool.
7. Avoid accidental starting. A power tool should not be carried with the finger by the starting switch.
8. Tools should be maintained, inspected, kept sharp, lubricated properly and clean for safe performance.
9. Keep good footing and balance when working with power tools.
10. All tools that are damaged or defective must be tagged and removed from service immediately.

E. Guards and Safety Switches

1. Belts, gears, shafts, pulleys, sprockets, spindles, drums, fly wheels, chains, or other rotating, reciprocating or moving parts of equipment must be guarded if such parts are exposed to contact by employees.
2. Guards must be provided to protect operators and employees from the:
    a) Point of Operations
    b) In running nip points
    c) Rotating parts
    d) Flying chips and sparks
3. Safety Guards, i.e. power saws, portable grinders, must never be operated with disabled blade guards or covers.
4. The following hand held power tools must be equipped with a momentary contact on-off control switch:
    a) Drills, tapers, fastener drivers, horizontal, vertical and angle grinders with wheels larger than 2 inches in diameter, disc sanders, belt sanders, reciprocating saws, saber saws and other similar tools.
    b) The above listed tools may be equipped with a lock on control provided that turnoff may be accomplished with a single motion of the same finger or fingers that turn it on.
5. The following hand held powered tools may be equipped with only a positive on-off control switch
    a) Platen sanders, grinders with wheels of two inches or less in diameter, routers planers, laminate trimmers, nibblers, shears, scroll saws and jigsaws with blade shanks 1/4 inch wide or less.
    b) Other hand held tools, such as circular saws, chain saws, and percussion tools without positive accessory holding means must be equipped with a constant pressure switch that will shut off the power when released.

F. Electric Tools

1. All hand held electric tools used in wet or potentially wet locations will be connected to GFCI.
2. All hand held electric tools used in confined space entry work will be connected to GFCI.
3. All hand held electric tools shall be equipped with a three wire cord with ground and the ground connected, or double insulated, or powered by a low voltage isolation transformer.
4. The grounding pins must not be removed.
5. Electric tools must be operated within their design limitations.
6. Gloves, safety footwear and eyewear are recommended for use while using electric tools.
7. Work areas should be kept well lit.

G. Powered Abrasive Wheel Tools

1. Abrasive wheels selected for tools must be rated for the spindle wheel speed.
2. Before mounting an abrasive wheel it should be inspected closely and a sounding or ring test must be completed. Note: A ring test is accomplished by tapping the wheel gently with a light non-metallic implement. If the wheel sounds cracked or dead, the must be discarded. If the wheel is sound, it will give a clear metallic tone or ring.

3. When mounting wheels, the installer must be sure that it fits freely on the spindle. The spindle nut must be tightened enough to hold the wheel in place, but not so tight as to distort the flange.
4. Employees must never stand in front of the wheel when starting.
5. The wheel should not be used until it has come to full operating speed.
6. Safety guards must be in place and functioning properly.
7. Face shields over safety glasses with side shields should be worn.
8. Turn off the power when completed.
9. Never clamp a hand held grinder in a vise or to a workbench.
10. In many client locations, use of electric tools, including battery operated tools constitutes hot work and a hot work permit will be required.

H. Pneumatic Tools

1. Pneumatic tools that shoot nails, rivets, or staples, and operate at more than 100 PSI, must be equipped with a special device to keep fasteners from being ejected, unless the muzzle is pressed against the work surface.
2. Eyewear is required for all operations, and face protection is recommended for work with pneumatic tools.
3. Hearing protection is required.
4. Hoses connected to pneumatic tools must be equipped with positive locking devices or wired together at the connection hose/tool connection point and the tool hose to feed hose connection point.
5. Airless spray guns operating at 1,000 PSI or more must be equipped with manual safety devices which will prevent pulling the trigger until the safety is manually released.
6. Air hoses more than 1/2 inch in diameter must have a safety excess flow check valve installed at the source that will cause the air supply to shut off automatically in the event of hose failure.
7. A safety clip or retainer must be installed to prevent attachments, such as chisels on a chipping hammer, from being accidentally shot out from the barrel.
8. Cups installed on impact guns must be installed with a pin and the rubber retaining ring in place. A piece of tape should also be installed around the rubber-retaining ring.
9. Compressed air guns must never be placed against body parts and turned on.
10. Compressed tools must not be pointed at other individuals.

I. Powder Actuated Tools

1. Powder actuated tools must be operated by trained, qualified and licensed employees only.
2. They must never be used in an explosive or flammable atmosphere.
3. The tool must be inspected prior to use, to insure that it is clean, all moving parts operate freely, and the barrel is free from obstructions.
4. It must never be pointed at anyone.
5. The tool must not be loaded unless it is to be used immediately.
6. When the tool is not in use, it must be locked away.
7. Hands must be kept clear of the barrel end.
8. The tool must be designed that it will not operate until the barrel and the surface of the material to be fastened are pressed together with a force of five pounds greater than the total weight of the tool.

9. In the event of misfire, the user must wait 30 seconds before attempting to fire again. If the tool misfires again, wait another 30 seconds and remove the load. The bad cartridge should be placed in water.
10. Eye and hearing protection must be worn at all times during use.
11. The area should be marked with barrier tape and signs posted.
12. Tools must be designed to accept varying load charges. Extreme care must be used to select the proper charge.
13. The muzzle end of the tool must have a protective shield or guard centered perpendicularly on the barrel to confine any flying fragments or particles.
14. Any defect noticed in a tool will require immediate removal from service and tagging to indicate defect.
15. Fasteners must not be fired into material, which would allow the fastener to pass through to the other side.
16. The fastener must not be driven into materials like brick or concrete any closer than 3 inches to an edge or corner.
17. The fastener must not come any closer than 1/2 inch from any corner or edge when fired into steel.
18. Fasteners must not be driven into spalled areas.
19. An alignment guide must be used when shooting a fastener into an existing hole.
20. Fasteners must not be driven into very hard or brittle materials, which might chip, spatter or make the fastener ricochet.

J. Hydraulic Power Tools - The fluid used in hydraulic power tools must be an approved fire resistant fluid and must retain its operating characteristics at the most extreme temperatures to which it will be exposed. The manufacturers recommended safe operating pressure for hoses, valves, filters and fittings must not be exceeded.

K. Liquid Fuel Tools - The most serious hazard of fuel powered tools is the vapors from fuel that can burn or explode and give off dangerous exhaust.
1. Care must be used in the transport, storage and use of fuel.
2. The engine must be shut off and allowed to cool down before refueling.
3. A fuel powered tool must not be used in a confined space, unless appropriate ventilation and SCBA are in use.
4. Fire extinguishers must be located with the tool.

L. Jacks
1. Lever, ratchet, screw and hydraulic jacks must be equipped with a device that prevents them from jacking up to high.
2. Load rating and manufacturers recommendations must be permanently marked on the jack in a prominent place.
3. Manufacturer’s recommendations must not be exceeded.
4. A jack must never be used to support a lifted load. The lifted load must be blocked up.
5. Use wooden blocking under the base, if necessary, to keep the jack level and secure.
6. If the lift surface is metal, a 1 inch thick hardwood block or equivalent between it and the metal jack head must be installed to prevent slippage.

7. A jack must be set up so that:
   a) The base rests on a firm, level surface.
   b) The jack is correctly centered.
   c) The jack head bears against a level surface.
   d) The lift force is applied squarely.
8. Jacks exposed to freezing temperatures must be filled with an adequate anti-freeze liquid.
9. If a jack is subjected to abnormal load or shock, it must be thoroughly inspected to make sure that it has not been damaged.
10. Leaking jacks, damaged jacks, bent jacks, must be taken out of service and tagged as defective, immediately.

SECTION 6

ELECTRICAL SAFETY/CONTROL OF HAZARDOUS ENERGY

1. CONTROL OF HAZARDOUS ENERGY POLICY AND PROCEDURES

A. OSHA References - 29 CFR 1910.147, 29 CFR 1910.332 , 29 CFR 1910.333, 29 CFR 1926.417

B. Policy - It is the policy of Schmid to comply with electrical safety/control of hazardous energy standards established by OSHA 29 CFR 1910.147, OSHA 29 CFR 1910.332, and client established policies and procedures for Control of Hazardous Energy. This program shall be inspected annually by the Safety Director. A certified review of the inspection including date, equipment, employees and the inspector shall documented and maintained on file. The client policy and procedure will supersede this policy and procedure if it meets or exceeds the OSHA and Schmid requirements.

1. Scope - This procedure is intended to cover necessary safety precautions and procedures for servicing and maintenance of machines and equipment in which the unexpected energizing or start-up, or release of stored energy could cause injury to employees. This policy and procedure applies to all Schmid employees, Schmid subcontractors and their employees.
2. Purpose - This procedure covers the minimum requirements for Lockout and/or Tagout of energy isolating devices to protect employees from hazardous energy including electrical, mechanical, hydraulic, pneumatic, or other stored energy. It will be used as a procedure for isolation of all potentially hazardous energy before employees perform any servicing and maintenance activities where unexpected start up or release of stored energy could cause injury.
3. Training will be provided to appropriate Schmid employees and subcontractors in accordance with OSHA 29 CFR 1910.147. The training must include recognition of hazardous energy source, type and magnitude of energy available, methods and means necessary for energy isolation and control. Each authorized employee shall receive adequate training. The training should address that all affected employees are instructed in the purpose and use of the energy control procedure. There should be training provisions included for any other employee whose work operations are or may be in an area where energy control procedures may be utilized. The employee training should also address when Tagout systems are used including the limitations of a tag (tags are warning devices and do not provide physical restraint). The training should also include that a tag is not to be removed without authorization. The tag is never to be ignored or defeated in any way. Retraining is required when there is a change in job assignments, in machines, a change in the energy control procedures, or a new hazard is introduced. All training and/or retraining must be documented, signed and certified. The employees will also be trained in the application of this policy or client policy by Schmid or its' clients.
    a) Employees who face a risk of electric shock but who are not qualified persons shall be trained and familiar with electrically related safety practices.
    b) Employees shall be trained in safety related work practices that pertain to their respective job assignments.
    c) Clearance distances - The lines shall be de-energized and grounded or other protective measures shall be provided before work is started.
4. Exceptions - This policy does not cover
    a) Installations under the exclusive control of electric utilities for the purpose of power generation, transmission, and distribution including related equipment for communication or metering.

b) Exposure to electrical hazards from work on or near electrical utilization installations that are covered by OSHA 29 CFR 1910 Subpart S.

c) Failure to comply with this policy and procedure or the client established policy and procedure are grounds for immediate removal and subsequent discharge in accordance with the Schmid Red Flag Violations Policy.

5. An inspection for compliance with the Schmid policy and procedures for control of hazardous energy will be conducted and documented annually, by a company designated competent person.

6. The Schmid Safety Representative may approve deviations to this policy and procedures only.

7. Protective Materials and Devices

a) Locks, tags, chains, wedges, key blocks, adapter pins, self-locking fasteners, or other hardware will be provided by the employer for isolating, securing or blocking of machines or equipment from energy sources. These devices must be singularly identified and used specifically for the purpose of isolating, securing, or blocking from energy sources. They must be durable and capable of withstanding the environment to which they are exposed.

b) Lockout devices must be substantial enough to prevent removal without the use of excessive force or unusual techniques, i.e. bolt cutters, hack saw, etc.

c) Locks will be issued to individual employees. Extra keys will not be available. Keys for individual employee locks will not be given to other employees or supervisors. If a lock does not contain the identity of the installer, a tag must be installed with the lock to provide the identity of the installer.

d) Tagout devices must be constructed and printed so that exposure to damp atmospheres, weather conditions, and corrosive atmospheres will not damage the tag.

e) Tagout devices must clearly identify the name of the installer and the hazardous condition protected against, i.e. Do Not Open, Do Not Operate, Do Not Energize, Do Not Start, Do Not Close, etc.

f) Tagout devices must be attached with material that will withstand the weather and atmosphere associated with the location of the tag.

8. Shift Change Or Relief From Job Assignment - Employees departing the job site at the end of the working day or having a change in assignment during the working day will remove the locking and tagging device in the following manner:

a) If relieved by another Schmid employee, the departing employee will accompany the newly assigned employee to the Lockout/Tagout device(s) and remove their individual lock. The newly assigned employee will verify the effectiveness of the isolation and install their Lockout/Tagout device.

b) If no relief is provided, the employee will contact the Schmid Foreman. The Foreman will accompany the employee to the Lockout/Tagout device and install their personal Lockout/Tagout device to the isolation equipment after verifying that effective isolation is maintained. The Schmid Foreman shall remove their Lockout/Tagout device upon reassignment or resumption of work by another employee.

9. General - This procedure establishes the minimum requirements for the Lockout of energy isolating devices whenever maintenance or servicing is done on machines or equipment. It must be used to ensure that the machine or equipment is stopped, isolated from all potentially hazardous energy sources and locked out before employees perform any servicing or maintenance where the unexpected energizing or start-up of the machine or equipment or release of stored energy could cause injury.

10. Compliance - All employees are required to comply with the restrictions and limitations imposed upon them during the use of lockout. The authorized employees are required to perform the lockout in accordance with this procedure. All employees, upon observing a machine or piece of equipment that is locked out to perform servicing or maintenance shall not attempt to start, or energize or use that machine or equipment. Under no circumstance shall employees de-energize, lockout, or return to service, machines or pieces of equipment without the express consent of the client designated representative and Schmid Foreman.

11. Enforcement - Failure to comply with this procedure will cause immediate removal from the work site and subsequent termination.

12. Job Planning - Safe 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. Schmid Supervisor is expected to include the anticipated need for lockout devices during the pre-job planning walk through. An alternate procedure must be used for machines or equipment that cannot accept a positive locking device. Employees may not enter spaces containing exposed energized parts unless illumination is provided that enables the employees to work safely. Protective shields, protective barriers or insulating materials as necessary shall be provided. If employees are subject to handle long dimensional conductor objects (ducts or pipes), steps for safe work practices shall be listed in the job hazard analysis. If portable ladders are to be utilized the may only be constructed of fiberglass.

Conductive items of jewelry or clothing shall not be worn unless they are rendered non-conductive by covering, wrapping or other insulating means.

13. Vehicular and Mechanical Equipment near Overhead Power Lines - Overhead power lines will be de-energized and grounded before any work is performed by any vehicle or mechanical equipment near the energized overhead power lines. If the overhead lines cannot be de-energized, then the vehicle or mechanical equipment will be operated so that a clearance of 10 feet is maintained. If the voltage of the overhead line exceeds 50 kV, the distance will be increased 4 inches for every 10 kV increase in power. If lines are protected with properly rated insulating devices, the distance may be decreased. If the equipment is an aerial lift insulated for the voltage involved and if the work is performed by a Qualified Person, the clearance may be reduced to a distance given in Table I. If protective measures such as guarding or isolation are provided, these measures must protect the employee from contacting such lines directly with any part of the body or indirectly through conductive materials, tools, or equipment. Protective shields, protective barriers or insulating materials as necessary shall be provided.

14. Lockout/Tagout - Machines and equipment may be exposed to unexpected release or start up from more than one source. Conductors and parts of electrical equipment that have been de-energized but not been locked or tagged out shall be treated as live parts. A careful check must be accomplished. A job Specific Lockout/Tagout procedure will be completed as part of a Job Task Safety Analysis.

15. Communication - The Foreman will advise Schmid employees that a lockout procedure will be required. The specific procedure (locking, tagging, etc.) will be communicated as well as the potential release hazard and magnitude. Unqualified personnel shall maintain a 10 feet approach distance and all unauthorized personnel shall be restricted from the work area. Barricades and signage shall be in place for this purpose. Vehicle and other mechanical

equipment shall be restricted from the area until authorized by the Qualified Person. For qualified approach distances see table S5.

16. Equipment Preparation

a) Shutdown of Equipment - Client owned equipment, Schmid equipment, or subcontractor supplied equipment in use by the client will not be shut down by Schmid employees without the express permission of the client designated representative and the Schmid Foreman. If shutdown is performed by anyone other than the effected worker zero energy must be physically verified prior to the start of work.

b) Shutdown Sequence:

(1) Shutdown the equipment or process by normal shutdown procedures.

(2) Locate the necessary energy isolating device(s) for the equipment/process and operate them to isolate energy sources and affix Lockout/Tagout devices.

17. Preparation

a) Relieve all stored or residual energy and take appropriate measures to ensure energy does not re-accumulate and affix a Lockout/Tagout device as necessary.

b) Ensure that other employees are not exposed and verify that energy isolation and release of stored energy have been accomplished.

(1) Check bleeders for pressure or flow or material.

(2) Operate push or start buttons. After pushing start buttons, push stop button.

c) If the machine or equipment is effectively locked out, maintenance or servicing may begin.

d) Before an authorized or affected employee turns off a machine or equipment, the authorized employee shall have knowledge of the type and magnitude of the energy to be controlled, and the methods or means to control the energy.

18. Return to Service

a) Schmid employees will not return client equipment, Schmid or subcontractor equipment in use by the client to service without the express approval of the client designated representative and the Schmid Foreman.

(1) Replace all guards' safety devices; remove all personnel, tools, and equipment. Remove all personally installed Lockout/Tagout devices.

(2) Notify the client designated representative and Schmid Foreman that servicing or maintenance has been completed.

19. Lockout/Tagout Device Removal by Employer - Removal of Lockout/Tagout devices by someone other than the installer will be accomplished under the following conditions:

a) The Foreman must establish, by contacting the employee, that all servicing and maintenance has been completed.

b) The Foreman must confirm that all bleeders, blocks, and switches are closed or in the off position.

c) The Foreman must insure that all guards and safety devices are removed and all personnel, tools, and equipment are removed from the area.

d) The Foreman may remove the Lockout/Tagout device.

e) The Foreman must notify the client-designated representative that servicing and maintenance has been completed.

f) The Foreman must investigate and document the removal and the cause for removal.

20. Group Lockout Procedures - If more than one person is involved in the lockout of equipment, the following procedure will apply:

a) If an energy Lockout device is not capable of accepting multiple locks or tags, a multiple Lockout, or Tagout device will be used.

b) If a Lockout device is to be used, a single lock may be used to Lockout the machine or equipment. The key must be placed in a lockout box or cabinet that allows the use of multiple locks to secure it. Each employee will lock the box or cabinet with their individual lock and remove it as their work is ended.

c) When Lockout/Tagout devices must be temporarily be remove to test equipment the following must be completed, documented, and verified by the foreman:

(1) Clear away all tools
(2) Remove employees
(3) Remove LOTO device
(4) Energize and test
(5) De-energize and reapply LOTO devices

21. The authorized employee should ascertain the exposure status of individual group members. Each employee shall attach a personal Lockout or Tagout device to the group's device while he/she is working and then removes it when finished. The authorized employee will shall designate someone on the next shift to be in charge of the lockout and shall be entrusted with a key documentation of the people in charge shall be kept.

2. REQUIREMENTS FOR ELECTRICAL LOCKOUT/TAGOUT

A. OSHA References - 29 CFR 1910.147, 29 CFR 1910.333, 29 CFR 1926.417

B. Electrical Lockout/Tagout - Live parts to which an employee may be exposed must be de-energized before the employee works on or near them, unless an additional hazard may be created, or it is not feasible due to equipment design or operational limits. Live parts that operate at less than 50 volts to ground need not be de-energized if there will be no increased exposure to electrical burns or explosion due to electric arcs. While any employee is exposed to contact with parts of fixed electric equipment, or circuits, which have been de-energized, the circuits energizing the parts shall be locked out or tagged out or both in the following order:

1. Safe procedures for energizing circuits and equipment shall be followed.
2. The circuits and equipment to be worked on shall be disconnected from all electric energy sources.
3. Control circuit devices such as push buttons, selector switches and inter-locks will not be used as the sole means for de energizing equipment.
4. Interlocks will not be used as a substitute for lockout and tagging.
5. Stored electric energy must be released. Capacitors must be discharged and high capacitance elements must be short-circuited and grounded, if the stored electric energy might endanger personnel.
6. Stored non-electrical energy devices that could re-energize electric circuit parts shall be blocked or relieved to prevent accidental energizing of the circuit by the device.

C. Procedure - A lock containing employee working on the equipment’s name and contact information and tag must be placed on each disconnecting means used to de-energize circuits and equipment on which work is to be performed.

1. The lock must be installed to prevent persons from operating the disconnecting means unless they resort to undue force or the use of tools.
    a) Each tag must contain a statement prohibiting the authorized operation of the disconnecting means and the removal of the tag.
    b) If a lock cannot be applied or the tagging procedure will provide a level of safety equivalent to the use of a lock, a tag may be used without a lock.
    c) A tag used without a lock must be supplemented by at least one additional safety measure that provides a level of safety equal to the use of a lock.
2. Removal of an isolating circuit element
3. Blocking of a controlling switch
4. Opening of an extra disconnecting device
5. A lock may be placed without a tag if:
    a) Only one circuit or piece of equipment is de-energized and,
    b) The lockout period does not extend beyond one work shift and,
    c) Employees exposed to the hazard associated with re-energizing the circuit or equipment are familiar with this procedure,
    d) It must be verified by a qualified person that the circuit has been de-energized in the following manner:
        (1) A qualified person must operate the equipment operating controls or otherwise verify that the equipment cannot be restarted.
        (2) A qualified person must use test equipment to test the circuit elements and electrical parts of the equipment and verify that the circuit elements and equipment parts are de-energized.
        (3) Tests must 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 de energized and presumed to be safe.
        (4) If the circuit to be tested is over 600 volts, nominal, the test equipment must be checked for proper operation prior to and immediately after testing.
6. Prior to re-energizing equipment, the following requirements must be met, even if the circuit or equipment is to be temporarily energized.
    a) A qualified person must conduct tests and visual inspections to verify that all tools, electrical jumpers, shorts, grounds and other devices have been removed.
    b) Employees exposed to the potential hazards from reenergizing the circuit or equipment must be warned to stay clear of the circuits and equipment.
    c) The employee who installed it must remove each lock and tag. If the employee who installed the tag or lock is absent, the lock may be removed by a qualified person designated by the foreman provided.
        (1) The Foreman ensures that the employee who installed the lock or tag is not available at the site.
        (2) The Foreman ensures that the employee who installed the lock or tag is made aware that the lock or tag has been removed before that individual resumes work at the work place.
    d) A visual determination must be made that all employees, tools, electrical jumpers, shorts, grounds, and other devices have been removed.
    e) The only electrical circuits and electrically powered equipment which do not have to be locked and tagged are:
        (1) Lighting circuits for the purpose of re-lamping, unless the removal of a broken lamp base is required.

(2) Circuits of less than 50 Volts.
(3) Circuits that must remain energized to accomplish the task, i.e. electrical troubleshooting.
(4) Electrically driven hand tools, office equipment, and portable electrical equipment supplied power by cord and plug do not require Lockout if the plug is disconnected and in full view of the employee servicing the equipment.

Only qualified persons may work on electric circuit parts or equipment that have not been de-energized. Such persons shall be made familiar with the use of special precautionary techniques, PPE, insulating and shielding materials and insulated tools and minimum approach distances (see table):

TABLE S-5 - APPROACH DISTANCES FOR QUALIFIED EMPLOYEES - ALTERNATING CURRENT

Voltage Range (phase to phase)	Minimum Approach Distance
300 V or less	Avoid Contact
Over 300 V, not over 750 V	1 ft. 0 in. (30.5 cm)
Over 750 V, not over 2 kV	1 ft. 6 in. (46 cm)
Over 2k V, not over 15 kV	2 ft. 0 in. (61 cm)
Over 15 kV, not over 37 kV	3 ft. 0 in. (91 cm)
Over 37 kV, not over 87.5 kV	3 ft. 6 in. (107 cm)
Over 87.5 kV, not over 121 kV	4 ft. 0 in. (122 cm)
Over 121 kV, not over 140 kV	4 ft. 6 in. (137 cm)

SECTION 7

CONFINED SPACE ENTRY

1. **CONFINED SPACE ENTRY POLICY** - The Schmid Policy and procedures for confined space entry are mandated for use an all Schmid work sites. If a client-approved policy exists, that meets or exceeds the Schmid Policy; the client's policy shall be followed. A copy of this policy shall be maintained at the work site.

A. OSHA References - 29 CFR 1910.146, 29 CFR 1926.21, 29 CFR 1926.352, 29 CFR 1926.353, 29 CFR 1926.651, 29 CFR 1926.956

B. Definition - A Confined Space is a space that is large enough and so configured that an employee can bodily enter and perform assigned work and has limited or restricted means for entry or exit (i.e., tanks, vessels, silos, storage bins, hoppers, vaults, and pit that are spaces that may have limited means of entry) and is not designed for continuous employee occupancy.

C. Definition of Entry into a Confined Space - Entry means the action by which a person passes through an opening into a 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.

D. Definition of Permit Required Confined Space - A permit required confined space means a confined space that has one or more of the following characteristics:

1. It contains or has a potential to contain a hazardous atmosphere.
2. It contains a material that has the potential for engulfing an entrant.
3. It has the internal configuration that could trap an entrant or asphyxiate an entrant by inwardly converging walls or by a floor, which slopes downward and tapers to a small cross section.
4. It contains any other recognized serious safety and health problems.

E. Definition of Permit Required Confined Space Program - A permit required confined space program is the employer's overall program for controlling and protecting employees from permit-required confined space hazards and regulating employee entry into permit required confined spaces.

F. Definition of Non-Permit Confined Spaces - A non-permit required confined space is a confined space that does not contain, or with respect to atmospheric hazards, have the potential to contain any hazard capable of causing death or serious physical harm.

G. Designation - It is the policy of Schmid that specific employees will be designated as Entry Supervisor, Attendant, and Confined Space Entrant Furthermore, employees who have not been trained, qualified and designated will not perform duties associated with the previous listed titles.

H. Training will be provided in the hazards of confined space entry, the confined space entry policy, and the procedures for permit-required and non-permit required confined space. Entry Supervisors, responsible for hazardous atmospheric testing will be trained and qualified in the use of gas detection equipment and the interpretation of the data. Certificates for all entrants, attendants, and supervisors involved in confined space operations shall be at each project site where confined space entries are taking place or readily available.

Each affected employee must be trained prior to initial assignment, prior to a change in assigned duties, if a new hazard has been created or special deviations have occurred.

Schmid must certify that the required training has been accomplished. The certification shall include employee name, trainer signature/initials, and dates of training. Certification must be made available to employees and their authorized representative.

Before entering a confined space, identify some form of communication to summon rescue. This could be listed on the permit or under supervisors or attendants duties or could even list different types of communication equipment.

I. Violations of the Confined Space Entry Policy and the Permit Required and Non-Permit Required Confined Space Entry procedures will not be tolerated.

2. PERMIT REQUIRED CONFINED SPACE ENTRY PROCEDURE

A. OSHA References - 29 CFR 1910.146, 29 CFR 1926.21 (b)(6)(i-ii)

B. General - If the client or Schmid has determined a confined space to be a permit-required confined space, the following procedure will apply. If the client procedures meet or exceed this procedure, the client procedure will be used. All permits will be retained for a 1 year period and evaluated by the corporate safety representative to review and improve on future confined space entry policies and procedures. Review process to include and not limited to the following:

1. Any and all unauthorized entry of a confined space.
2. A hazard not covered by the permit.
3. Occurrence of an injury or near miss.
4. Employee complaints.

C. Qualifications

1. Entry Supervisor - Schmid employees assigned to entry supervisor duties must be trained and qualified in Schmid and Client confined space procedures. Unless specifically designated by Schmid no Employee will assume the duties of Entry Supervisor. Certification of training in hazardous atmosphere testing equipment must be obtained.
2. The Attendant Safety Observer must be trained, qualified and designated by to perform the duties of an entry attendant. Note: One attendant is typically required for each specific Confined space; attendants are not authorized to attend multiple confined space entries unless specific provisions are made prior to entry. See a copy of the Confined Space Entry Permit at the end of this section.
3. Authorized Entrants into confined space must be trained, qualified and authorized by Schmid.

D. Duties of Entry Supervisor

1. The Entry Supervisor must know the hazards faced during entry, including information on the mode, signs, and symptoms and consequences of exposure. An SDS or Similar written material must be kept at the work site for any material to which the authorized entrant may be exposed.

2. The Entry Supervisor must verify that the appropriate entries have been made on the confined space entry permit and that all specified tests have been conducted.
3. Verifies, by checking, that all procedures and equipment specified by the permit are in place, before signing the permit and allowing entry.
4. Terminates the entry and cancels the permit if the confined space hazard or conditions outside the confined space pose a hazard to the entrants.
5. Verifies that rescue services are available and that the communication with rescue services is readily available.
6. Removes unauthorized individuals who enter or who attempt to enter the confined space.
7. Reviews the confined space operation at intervals dictated by the hazard and the operation to insure compliance with this policy.
8. Determines when responsibility for a permit space entry operation is transferred.
9. Reviews the Permit Required Confined Space work, prior to commencement with the attendant, entrants and the client designated representative.
10. Designates qualified individuals to act as entrants and attendants.
11. Monitor the space and inform the entrants of the potential hazards and results; they must participate in the permit review and signing. Ventilation must be used and testing must be conducted before entry and during work.

E. Duties of Attendant

1. The attendant must know the hazards that may be faced during entry, including information on the mode, signs, symptoms, and consequences of exposure.
2. An attendant must be on duty outside the confined space for the duration of entry operations.
3. The attendant must be aware of possible behavioral effects of hazard exposure in authorized entrants.
4. The attendant must maintain an accurate count of authorized entrants in the permit space and ensure that the entrants are properly identified and authorized on the permit.
5. The attendant must insure, by head count, that all authorized entrants have departed the confined space prior to closing out the permit or departing the confined space.
6. The attendant will contact emergency responders utilizing 911 if the attendant feels the entrants may need assistance to escape from hazards or may have displayed the effects of the hazards of the confined space.
7. The attendant will prevent unauthorized entry to the confined space.
8. The attendant will not attempt to rescue by entry into the confined space. Only rescue attempts by non-entry are allowed.
9. The attendant will not vacate the area, for any reason, or perform any duty, which would prevent or inhibit the ability to communicate with the entrants.
10. The attendant will evacuate the confined space if:
    a) The attendants detects a condition outside (i.e. an alarm, leak, etc.) which may endanger the entrants or any alarm condition on continuous monitoring equipment.
    b) The attendant detects a behavioral or symptomatic change in the entrant(s).
    c) The attendant must leave the site or cannot comply with all the duties listed in this section.
    d) The attendant cannot effectively communicate with the entrants.

e) The attendant is advised to vacate the confined space by a client representative or Schmid Supervisor.

f) The attendant determines that the entrant (s) is (are) not complying with personal protective equipment practices or safe work practices.

F. Duties of the Authorized Entrant

1. The authorized entrant must know the hazards that may be faced during entry, including information on the mode, signs and symptoms and consequences of the exposure.
2. Properly use protective equipment and monitoring devices as specified.
3. Establish and maintain open communications with the attendant.
4. Alert the attendant if the entrant detects a prohibited or hazardous condition.
5. Alert the attendant and other entrants if the entrant notices any warning sign or change in behavior or symptom of exposure in any other entrant. The entrant will notify the entry supervisor of the condition changes. The supervisor will then cancel the existing permit and re-evaluate the space.
6. The entrant will immediately take action to evacuate the confined space if the entrant:

a) Is directed to do so by the attendant, entry supervisor or designated client representative.

b) Detects a failure to comply with personal protective equipment requirements.

c) Is unable to maintain effective communication with the attendant.

d) Detects any alarm on continuous monitoring equipment.

G. Duties of the Host Employer or Client - The host employer will provide qualified rescue service personal as prescribed by OSHA 29 CFR 1910.146(k).This must be pre-discussed with Schmid designated representative and procedures to contact rescue organizations must clearly be established. The host employer will be responsible for the issuance of confined space entry permits and providing Safety Data Sheets for hazardous materials previously stored or present in the confined space.

Important Note: If the Permit Required Confined Space is evacuated for any reason, Schmid employees will not re-enter the Confined Space without determination of the cause and elimination of the hazard to the satisfaction of the authorized entry supervisor, attendant, entrants and client representative. Return to full compliance with this procedure or client established procedure is required before entry can resume. All employees or their representatives are entitled to request additional monitoring at any time they deem necessary or appropriate.

H. Personal Protective Equipment - The following personal protective equipment must be used for entry into permit required confined space, unless it can be clearly established that the retrieval equipment will increase the overall risk of entry or would not contribute to the rescue of the entrant.

1. Each authorized entrant shall use a chest or full body harness with a retrieval line attached at the center of the entrant's back near shoulder level or above the entrant's head.
2. Wristlets may be used in lieu of the chest or full body harness if the employer can establish that the full body harness or chest harness is not feasible or creates a greater hazard and that the wristlets are the safest and most effective means of retrieval.

3. The retrieval line must be attached to a mechanical device or fixed point outside of the confined space in a manner that would allow immediate non-entry rescue by the attendant or rescue response.

4. A mechanical retrieval device must be available to retrieve entrants from a vertical confined space more than 5 feet deep.

I. Rescue Services and Retrieval Equipment

1. Rescue Services - The host employer shall identify qualified rescue services as their main means of rescue to be utilized in the event of an emergency. The name and method of contacting rescue services shall be clearly identified on the confined space permit. Response time for rescue arrival on site should be identified prior to start of work. The rescue services shall have the opportunity to examine the entry site and be trained in performing confined space rescue and shall have practiced a rescue situation within the last 12 months. The rescue service will have the opportunity to decline service. Rescue services are required to be on site in cases of IDLH entries. **Employees will not attempt a rescue by entering the confined space unless specifically trained, designated and authorized in writing by the company president and the host employers designated entry supervisor.**

2. Retrieval Equipment - To facilitate non-entry rescue, retrieval systems or other methods shall be used whenever an authorized entrant enters a permit space, unless the retrieval equipment would increase the overall risk of entry or would not contribute to the rescue of the entrant. The retrieval system should be in place prior to entry and shall meet the following requirements.

3. Each authorized entrant shall use a chest or full body harness with a retrieval line attached at the center of the entrant's back near shoulder level, or above the entrant's head.

4. The other end of the retrieval line shall be attached to a mechanical device or a fixed point outside the permit space in a manner that would allow immediate non-entry rescue to begin as soon as the rescuer becomes aware that a rescue is necessary. A mechanical device must be available to retrieve personnel from vertical type permit space more than 5 feet deep.

J. Hazardous Material Exposure - Since exposure to hazardous materials inside a confined space is possible, a copy of the Safety Data Sheet for materials contained, previously contained, or used within the confined space. They shall be posted with a copy of the confined space permit and be available for rescue personnel immediately outside the access point to the confined space.

3. PERMIT REQUIRED CONFINED SPACE PREPARATION FOR ENTRY

A. Isolation - The confined space must be removed from service and completely protected against the release of energy and material into the space.

B. All energy sources must be locked out.

C. All lines, pipes, hoses, intake vents, ducts, etc., leading to or from the confined space must be broken away in a manner which would prevent intake or through put of hazardous materials or energy: blanked, blinded, or sections removed.

D. Rotating equipment must be de-energized and locked out.

E. The confined space must be purged, flushed, ventilated, cleaned or inert to eliminate or control the hazardous atmosphere (Note: Inert Atmospheres create a hazard by displacing oxygen with an inert. Special care and ventilation prior to testing and entry must be exercised prior to entry. A SDS must also be provided and kept at the site for chemical-cleaning agents used in confined spaces. Confined spaces purged with steam or cleaned with hot water must be allowed time to cool to acceptable levels prior to the onset of entry).

F. Barriers to prevent pedestrian or vehicle entry, which could pose a hazard to entrants, must be erected.

G. Determine if the cover (if any) can be safely removed by the following:

1. Conduct exterior visual examination for existence of hazards, i.e. liquid, etc.
2. Test the atmosphere around the cover to determine the presence of hydrocarbons or toxic vapors.
3. Slowly open the cover to insure no existence of pressure, fluids, etc. If possible, atmospheric testing should be conducted.
4. Remove cover and visually inspect from the outside for the presence of hazards.
5. Conduct atmospheric testing in this exact manner.

(Note: Ventilation systems must be off for a minimum of 30 minutes prior to testing)

a) Test atmosphere outside of confined space for oxygen content.
b) Test atmosphere inside of confined space for oxygen content.
c) Compare reading, a difference of 1 percent oxygen content inside of the confined space may represent 10,000 PPM or a toxic material.
d) Oxygen content must be above 19.5 percent and below 23.5 percent for entry.
e) Test for combustible gases must be below 2% LFL for entry.
f) Test for toxic gases or vapors must read 0 Parts per Million (PPM).
g) If testing falls outside of the parameters established above, a permit cannot be issued without elimination of hazard and retest.
h) Entrants or their representatives are to be given an opportunity to review and participate in the review and calibration of air monitoring data before entering.
i) Entrants must also be given the opportunity to participate in the permit review and signing.

H. Designate attendant and entrants as described in this procedure.

I. Provide all personal protective equipment.

J. Provide ventilation, (Refer to Section on Welding and Burning).

K. All lighting and electrical tools used in confined spaces must be connected to GFCI or reduced to 12 volts.

L. All air operated tools must be connected to breathing air quality air sources.

M. Discuss job requirements, emergency procedures and hazards with entrants, attendants and client designated representatives. Secure/issue proper confined space entry

permit and appropriate work permit for confined space work (if required by client). Note: In spaces where multi employers are working in the same space, all of the above information will be discussed with those individuals entering the space and information gathered/discussed as to their purpose of entering the space. If for any reason it would increase the hazards to employees entering the space an effort to schedule different entry periods will be made.

N. Post copies of the permits; permit required confined space entry procedure, SDS and emergency procedures plan at the work site.

O. A permit required confined space may be declared and certified as a non-permit required confined space by following the procedures outlined in the Non-Permit Required Confined Space Procedure (listed below).

P. Periodic hazardous atmosphere monitoring will be conducted and logged on the confined space entry permit form.

Q. If the confined space is vacated, unattended, or recovered, visual inspection and re-testing of the space for hazardous atmosphere must be conducted.

R. Caution

1. Hazards, such as welding fumes, electrical shock, flammable and toxic vapors, may be introduced to the confined space by work in the confined space.
2. Welding and cutting torches may not be left on and unattended. The source must be isolated prior to departing the confined space.
3. Adequate ventilation must be provided for welding, cutting, and burning work inside of confined spaces.
4. Employees or their representatives are entitled to request additional monitoring at any time.

4. NON PERMIT REQUIRED CONFINED SPACE ENTRY PROCEDURE

A. Determination of Permit Required or Non-Permit Required Confined Space - In most cases, our clients have previously determined permit-required and non-permit required confined spaces. For permit required confined spaces, the employer must inform all exposed employees by posting signs or by any other effective means, of the existence and location of the danger posted by the permit-required space.

B. The following steps must be taken and the attached form be completed in determining the status of the confined space by the Schmid Entry Supervisor:

1. Entry covers must be safely removed.
2. A visual inspection, if possible, without entry must be performed to establish the absence of recognized hazards.
3. Install proper railing or temporary barrier that will prevent accidental fall through the opening.
4. Test internal atmosphere with a calibrated direct reading instrument for the following conditions **Air movers must be turned off during atmospheric testing and the testing must be accomplished in the exact order presented below:**
    a) Oxygen content must be above 19.5 percent and below 23.5 percent.

b) Test for flammable gases and vapors – must be below 10% flammable limit (LFL).
c) Visually ascertain that no airborne combustible dust is present.
d) Test for the presence of H2S or other toxic contaminants.
e) **If you are in doubt of results, contact Schmid Safety representative immediately for further instructions.**

C. The Schmid Entry Supervisor must complete the attached form and leave the form at the work site. In the event that multiple sites are involved, each site must be tested and the results posted on the attached forms.

D. Ladders must be provided for egress and entry.

E. Coordinating entry operations for multi employers so that employees of one employer do not endanger the employees of any other employer.

F. A safety observer (attendant) must be assigned with clear communications capability with the non-permit confined space entrants. **The attendant shall not attempt to rescue entrants within the Confined Space by entering into the Confined Space.**

G. The attendant must be knowledgeable of how to summon emergency response personnel.

H. Non-Permit Required Confined Spaces that are vacated for a period of 1 hour, recovered for any purpose, or suspected to have any change in atmosphere or condition, must be re-tested and the results annotated on the attached form.

I. Non-Permit Required Confined Spaces must be periodically monitored for changes in conditions by the Entry Supervisor.

J. Reviews of the permit space program, using the canceled permits retained within 1 year after each entry and revise the program as necessary, to ensure that employees are protected.

K. Failure of any re-test or changes in condition requires reclassification of the confined space as a Permit-Required Confined Space and must be noted on the attached form.

L. Schmid employees, subcontractors, etc., will be immediately removed from the confined space and the Permit Required Confined Space. Procedures must be followed.

M. The use of ventilation must always be considered.

CONFINED SPACE ENTRY PERMIT

Date:_____

Job #:_____

Location:_____

Nature of Work:_____

The following Protective Equipment and Precautions have been reviewed with the supervisor in charge of the personnel working inside or on the above-referenced project and are to be initialed as completed prior to entry and/or work.

COMPLETED (INITIALS)		*PROTECTIVE EQUIPMENT REQUIRED*	*YES*	*NO*
_____	1	Safety Belt (Harness)	_____	_____
_____	2	Fresh Air Mask (Respirator)	_____	_____
_____	3	Rubber Boots and Gloves	_____	_____
_____	4	Fire Extinguisher	_____	_____
_____	5	Blower, Air Mover, Venturi	_____	_____
_____	6	Protective Goggles or Shield	_____	_____
_____	7	Other:	_____	_____
_____	1	Lines to Vessel Blanked / Disconnected	_____	_____
_____	2	Vessel Emptied and Cleaned	_____	_____
_____	3	Low-Voltage Light and Service Lines	_____	_____
_____	4	Explosimeter Test (Before Entry/Constantly)	_____	_____
_____	5	Oxygen Test (Before Entry/Constantly)	_____	_____
_____	6	Switches and Valves Locked and Tagged Out	_____	_____
_____	7	Standby Man Posted Outside	_____	_____
_____	8	Procedure Record Completed and Reviewed	_____	_____

UPON COMPLETION OF THE ABOVE NOTED ITEMS & REVIEW OF THE ENTRY PROCEDURE, ENTRY MAY BE MADE.

_____ ENTRY AUTHORIZED BY:_____
(Superintendent Signature)

Name of Standby Man:_____ Signature:_____

Name of Man Entering:_____ Signature:_____

NOTE: THIS FORM IS TO BE RETURNED UPON COMPLETION OF WORK!!

SECTION 8

FALL PROTECTION PROGRAM

1. FALL PROTECTION

A. OSHA References - 29 CFR 1926 Subpart M

B. General - The purpose of this program is to prevent work related injuries resulting from falls. The prevention of these incidents will accomplished by the use of fall prevention and fall arrest methods, the training of effected employees and aggressive enforcement by all levels of management.

In addition the fall protection plan shall be prepared by a qualified/competent person for the specified work site prior to the start of the work.

C. Application - This policy applies to all Schmid employees who may be exposed to fall hazards in the course of their daily activities. This program also applies to non-site personnel, visitors or any individual on site exposed to a fall hazard. Fall protection is required at elevations of 6 ft. or greater for the following work activities.

Examples of areas were employees may have to be protected include but are not limited to the following:

1. Leading edges
2. Hoist areas
3. Holes in walk surface
4. Framework and reinforcing steel
5. Ramps, runways, and other walkways
6. Excavations
7. Working over Dangerous equipment
8. Roofing work on low or steep sloped roofs
9. Precast concrete construction
10. Wall openings
11. Scaffolds
12. Aerial lifts
13. Overhand brick laying

D. Subcontractor's Plans will meet or exceed the requirements of this program. Plans must be submitted to the company project manager before beginning work. Plans must identify the person or persons responsible for monitoring the safety of the employees. (Competent Person). Site-specific plans must be submitted for any specialized fall protection. In an example:

1. Controlled access zones
2. Warning line system
3. Safety Monitoring System

E. In addition to responsibilities previously outlined in the Site Safety Program, the site safety representative or designated competent person for fall protection will be responsible for the training of all effected company employees and enforcement of the company policy). Competent persons must be able to recognize, warn and communicate with employees that may be exposed to a fall. Also, the competent person must be designated and assigned the task and be able to accomplish the following while workers are exposed:

1. Recognize fall hazards
2. Warn employees if they are unaware of a fall hazard or is acting in an unsafe manner
3. Be on same working surface and in visual sight
4. Stay close enough for verbal communication
5. Not have another assignment that would take monitors attention from monitoring the function

F. Training - The instructor shall be adequately trained in the fall protection system in use and shall be responsible for training all potentially exposed employees during the new employee orientation. In the event a new system is employed, additional training on this system will commence immediately for all affected employees.

1. Training will include, at a minimum:
   a) The company fall program requirements.
   b) Identification and elimination of fall hazards on the job site.
   c) Safe work in hazardous areas.
   d) Hazards associated with working near fall hazards.
   e) Selection, use, care and inspection of fall protection equipment.
2. All training must be documented in the following manner:
   a) The date of training.
   b) The employees printed name and signature.
   c) The printed name and signature of trainer.
   d) The specific subjects covered in the training session.
   e) Testing results (if any).

G. Retraining - When the employer has reason to believe that any effected employee who has already been trained does not have the understanding and skill required under employee training, the employer shall retrain each such employee. Circumstances where retraining is required include:

1. Changes in the work place were previous training is obsolete.
2. Changes in the type of fall protection systems or equipment were previous training is obsolete.
3. Inadequacies in an employee knowledge or use of fall protection system or equipment indicate that the employee has not retained the training provided.

H. Accountability and Enforcement - All field personnel will be held accountable for the enforcement and compliance with this program. Documented safety inspections, repeat discrepancies, accident investigation and implementation of accident investigation recommendations will provide the criteria for effectiveness of enforcement. Failure to comply with this policy will result in the following:

1. First offense - A written warning notice will be issued to the employee or employing subcontractor.
2. Second offense - The employee will be dismissed from the work site.
3. Subcontractors who fail to effectively enforce fall protection requirements or whose employees consistently violate fall protection requirements will be requested to leave the work site for failure to comply with contract requirements.

I. Hazard Identification and Elimination

1. Compliance with fall protection requirements will be a mandatory item for all documented safety inspections. Fall protection inspections will focus on the following hazards:

a) Scaffolds
b) Ladders
c) Steel Erection
d) Roofing
e) Floor holes
f) Open sided floors
g) Aerial lifts

2. The hazard identification process shall begin in the pre-bid phase with review of the scope of work, blue prints and drawings. Where feasible, pre-planning will be accomplished to prevent employees from being exposed to fall hazards. The following pre-planning steps must be considered:

a) Order and install stairways with the guardrails already attached.
b) Request the designer/architect specify proper anchor points for fall arrest systems.
c) Do not cut opening in the floors or ceilings until the material is being installed, eliminating the need for hole covers. Attach all guardrails on open sided floors before employees are allowed to work on that level.
d) Install stairs, guardrails, and other fall protection equipment early in the construction phase.
e) Require subcontractors to install fall protection systems on horizontal industrial steel prior to installation.
f) Maximize on ground assembly of structure or equipment.
g) Plan for the utilization of aerial lifts for all steel erection and concrete pre-cast erection.
h) Controlled access zones are not allowed for leading edge operation at company locations. The work method employed will include a horizontal lifeline behind the leading edge, designed for multiple employees, with retractable lanyards attached for employees working on the leading edge. Equipment used will not allow employee to travel into the fall zone of a leading edge

3. When no other above-mentioned methods have been implemented a safety monitoring system shall be put in place.

J. Conventional Fall Protection

1. Guardrail systems incorporate a top rail at 42 inches, plus or minus 3 inches above the working platform, mid-rail and toe board. On all company projects, guardrails will be constructed of 2 inches X 4 inches construction grade lumber with posts no more than 8 feet on center; 1/4 of an inch or greater wire cable, flagged every 6 feet with high visibility material; or 1 and 1/2 inch nominal diameter schedule 40 pipe with posts spaced no more than 8 foot on center. All guardrails shall be capable of supporting a 200 pound force in any direction with a maximum deflection of 3 inches. These guardrails will be placed in the following areas:

a) All stair systems
b) All open sided floors
c) Around all holes which are too large for hole covers
d) On all elevator shaft openings
e) On all excavations over 6 feet in elevation

f) All scaffolding with working platforms over 6 feet

2. Safety Nets will be used only during steel erection activities, when working over water and on unique projects when other conventional systems (such as guardrails, hole covers, etc.) are not feasible. In the vent safety nets are employed, the following guidelines will be used:

a) Nets will be installed as close as possible under walking/working surface, but in no case will an employee be exposed to a fall of greater than 30 feet.

b) Safety Nets will extend outward from the outer most edge of the work surface in the following manner:

Fall Distance	Extension
Up to 5' fall	8 foot extension
More than 5' to 10' fall	10 foot extension
More than 10' (do not exceed 30')	13 foot extension

c) Nets shall be installed in a manner that will prevent an individual from striking any object below the net.

3. Nets will be installed, tested and inspected by a competent person. All nets will be initially drop tested with a 400 pound bag of sand as specified in the OSHA standard and tested each week thereafter. Results of the tests will be documented. Where tests are not feasible, a competent person must certify the compliance of the net.

4. Site safety personnel will inspect nets each day. Results of inspections shall be documented.

5. Nets will be inspected after any occurrence, which could affect its integrity, such as a steel member falling into the net or shock loading due to a fall.

6. Any materials, tools, scrap or equipment that falls into the net must be removed as soon as possible, but no later than the end of the work shift.

7. Safety net design and connections shall comply with OSHA standards and manufacturers recommendations.

8. Nets that are found to be out of compliance will be immediately identified and no work will be performed until the compliance issues are resolved.

K. Hole Covers - A hole is defined as a gap or void 2 inches or more in its least dimension in a floor, roof or other walking /working surface. Employees must be protected from falling into or through holes, including skylights that are 6 feet or more above lower levels. Where holes exist, they must be equipped with guardrail systems as described above or covered with a hole cover as described below:

1. Hole covers will be capable of supporting two times the maximum intended load. (For roadways and vehicles, two times the maximum axle load of the largest vehicle expected to pass). For plywood hole covers, the minimum requirement is ¾ CDX plywood.

2. All covers must be secured when installed so that wind, equipment or employees will not displace them.

3. All covers must have the words **Danger - Hole Cover** written on them in high impact, durable color.

4. All covers must be installed to eliminate any tripping hazard.

L. Personal Fall Arrest Systems/Equipment

1. Harness and Lanyard - Only 4 point full body suspension harness and shock absorbing lanyards shall be used. Lanyards shall be equipped with locking snap hooks.

a) The designated competent person shall inspect equipment at time of issue and periodically throughout the project. The using employee shall inspect for defect and condition prior to use and on return after use. Damaged or defective equipment shall be tagged and removed from the work site or destroyed and disposed. Shock absorbing lanyards and harness that have experienced a shock load; pitting, chaffing, burn holes or chemical exposure shall be immediately destroyed and disposed to prevent accidental use.

b) All harnesses shall be properly fitted and worn. Equipment users shall be trained and instructed in the proper selection, care, use and inspection of fall protection equipment.

c) Caution shall be used in selection of all fall protection equipment to ensure the proper length and application. Swing distance shall be considered when selecting connection points and lanyard or tether length.

d) Fall protection anchor points shall be capable of sustaining 5000 pounds.

e) Specifically engineered slings and or chokers used to provide anchor points for lanyards shall not extend the fall distance beyond 6 feet.

Note: All PFAS materials used shall meet or exceed all applicable ANSI and ASTM standards

2. Self-Retracting Lifelines

a) Lifelines are part of a complete fall protection system, which automatically limits the free fall distance to 2 feet or less, consists of:

(1) An anchorage point capable of supporting 5000 pounds.

(2) A locking type connector to mount the device to the anchorage point.

(3) The self-retracting lifeline with locking snap hook.

(4) A 4 point suspension harness.

b) The installation of this device shall be directly over the work area.

(1) Attached to an anchor point that is capable of sustaining 5000 pounds.

(2) Attached by locking snap hook to the harness D ring in the center of the wearers back.

(3) Only one individual may be attached per unit.

c) Before use, the unit shall be inspected for any indication of damage, wear or malfunction including worn cable or damaged locking snap hook.

(1) Pull approx. four feet of cable out of the housing and allow retracting. Maintain a slight tension on the cable. The cable shall retract smoothly and completely. **Do not allow the cable to retract freely**.

(2) Repairs and adjustments may not be accomplished in the field. Malfunctioning units will be tagged **do not use** and removed from the site immediately. Equipment subjected to a shock load will be tagged and removed from the site immediately.

Note: All PFAS materials used shall meet or exceed all applicable ANSI and ASTM standards.

M. Selection and Installation of Anchorage Points

1. The selection of the proper anchorage point is critical to the effectiveness of fall protection. Anchorage points shall be:

a) Capable of sustaining a load of 5000 pounds.
b) Located equal to or above the point of operation.
c) Located above the work area to minimize or eliminate swing in the event of fall.

2. Anchorage points should be identified and installed prior to lifting and setting equipment in place.

3. Anchorage points selected should be positioned to allow employees to immediately connect fall protection equipment without unprotected travel from anchorage point to anchorage point.

N. Personal Fall Restraint System - A fall restraint system physically restricts or stops the fall before it occurs. For example, a harness with a cable attached, which is short enough to halt the employee before they step over an open-sided floor is considered a fall restraint system. Fall restraint systems will meet the same requirements of the positioning system and personal fall arrest system. The anchorage point, however, must be capable of supporting 200 pounds.

O. Positioning systems shall conform to the following provisions:

1. Positioning devices shall be rigged to prevent a free fall more than 2 feet.

2. Shall be secured to an anchorage capable of supporting at least twice the potential impact load of an employee's fall or 3000 pounds, whichever is greater.

3. Connectors shall be equipped with locking snap hooks and sized to be compatible with the member to what they are connected.

2. **FLOOR AND WALL OPENINGS** - Slips, trips and falls are well known causes of workplace injuries. These injuries occur when employees fall through floor opening/sand wall openings. This section provides general guidelines for guarding off floor and wall openings. It is not possible, however, to cover all potential areas of concern. The OSHA Standard, other sections of barricading, housekeeping, etc., in this manual and our client procedures are additional resources and should be consulted.

A. General

1. All workplaces, passageways, storerooms and service rooms must be kept clean and orderly and in a sanitary condition.

2. Floors must be maintained and drainage, platforms or mats must be provided for wet surfaces.

3. Floors must be free from protruding nails, splinter, holes, loose boards, etc.

4. Aisles and passageways must allow sufficient safe clearances for handling equipment, i.e. forklifts, hand trucks, pallet jacks, etc. They must be kept clear and in good condition.

5. Permanent aisles and passageways must be marked.

6. Cover and guardrails must be provided for open pits, tanks, vats, ditches, etc.

7. A load placed on any floor, roof, or other structure greater than that approved by the building official or indicated on the load approval plates installed on the facility.

B. Guarding Floor Openings and Holes

1. All floor openings large enough for an employee's foot to enter must be covered.

2. Stairway floor openings must be guarded with standard railings.
3. Ladder way openings or platforms must be guarded by a standard railing and toe board on all exposed sides.
4. Entrances to ladders from platforms or ladders from platforms must be guarded by a swinging gate or offset to prevent walking into the opening.
5. Hatchways and chute openings must be guarded by hinged floor coverings or removable railing with toe boards.
6. Hatchways equipped with hinged covers must be guarded when open.
7. Skylight floor openings and holes must be guarded by standard screens or railings.
8. Pits and trap door openings must be guarded by covers. When the cover is open, a person must constantly guard the hazard.
9. Manhole openings must be guarded by covers. When the cover is open, a person must constantly guard the hazard.
10. Temporary opening guarded must be guarded by a person in attendance.
11. Floor holes with fixed machinery must be protected so that there is no opening greater than 1 inch.
12. Platform doors or gates that open directly on stairways must not reduce the effective platform width to less than 20 inches.

C. Wall Openings (30 Inches High and 18 Inches Wide) - These guidelines apply to wall openings with a drop of 4 feet or more.
1. Openings must be guarded by rail, fence, barrier, and a removable toe board.
2. A grab handle will be provided on each side of the opening approximately 4 feet above the floor.
3. Guards must be provided for extension platforms.
4. Chute wall openings must be guarded.
5. Window openings with a drop of over 4 feet and less than 3 feet above the platform must be guarded with standard grills or slats.
6. Temporary wall openings must be guarded.
7. If materials can fall through wall holes, toe boards or screens must be provided.

D. Open-Sided Floors, Platforms and Runways - These guidelines apply when the open sided floor, platform or runway is 4 feet or above ground.
1. Standard railing must be provided.
2. Toe boards must be provided if persons can pass beneath the opening, moving machinery is beneath the opening, or equipment is in a position that would create a hazard if contacted by falling material.
3. Special purpose runways used for oiling, etc., over 18 inches wide, may by guarded on one side only when all other hazards are guarded against.
4. Standard railings must be provided above dangerous equipment i.e., tanks, vats, etc.

E. Stairways, Railings and Guards - Stairs with four or more risers must be provided with protection.
1. Stairs with a width of less than 44 inches must be provided with a handrail on the right side descending for enclosed stairs.
2. Stairs with a width of 44 inches must be protected on the open side.

3. Stairs of less than 44 inches must be protected on both sides when both sides are open.
4. Stairs of more than 44 inches and less than 88 inches must be protected on each side.
5. Stairs of more than 88 inches in width must be protected on each side and in the middle.
6. Winding stairs must be constructed so that the handrail prevents walking on tread with a width of less than 6 inches.

F. Standard Railings
1. Standard railings consist of a top rail, intermediate rail (approximately halfway from surface to top rail), and posts and must be no higher than 42 inches.
2. Stair railing must not have a vertical height of more than 34 inches nor less than 30 inches.
3. Wood railings must be 2 inches by 4 inches and span must be six feet or less.
4. Pipe railings must not be less than 1 and 1/2 inches in diameter and the span must not be more than eight feet on center.
5. Structural steel railings must be 2 inches by 2 inches by 3/8 inches and span more than 8 feet on center.
6. Anchoring must be capable of withstanding 200 pounds applied to the top rail of approximately all railways.
7. Other acceptable railing must have a smooth-surfaced top rail, 200 pounds capacity and provide for equipment protection.

G. Toe Boards - Must be 4 inches in vertical height, and no more than 1/4 inch clearance from the floor. Note: More vertical clearance must be provided if materials are to be stacked above the toe board.

H. Handrails
1. Attachments to handrails must offer no obstruction to the user.
2. They must furnish an adequate handhold.
3. They must present no projection hazards into the walking or working area.
4. The height of the handrail must not be more than 34 inches nor less than 30 inches.
5. Handrails must be capable of withstanding a 200 pound force.
6. Wood handrails must be 2 inches in diameter.
7. Pipe handrails must be 1 and 1/2 inches in diameter.
8. All handrails must provide a 3 inch clearance from any object or wall.

I. Floor Opening Covers
1. Trench/conduit covers in roads must be able to withstand a rear axle load of 20,000 pounds.
2. Manhole covers must withstand 20,000 pounds.
3. Covers must not project more than one inch above floor and no more than 30 degree angle.
4. Sky light screens must be capable of withstanding a 200 pound load.
    a) Must be installed to prevent deflection to break glass.
    b) The grillwork opening must not be more than 4 inches.

c) Slat work openings must not be more than 2 inches.

5. Wall opening rails must be capable of withstanding 200 pound load.
6. Wall opening grab handles must not be less than 12 inches.
   a) Must provide for a 3 inch clearance.
   b) Must allow for 3 inches of side clearance.
   c) Must withstand a 200 pound load.
7. Wall opening screens must withstand a 200 pound load.
   a) Grillwork opening must not be more than 8 inches.
   b) Slat work openings must not be more than 4 inches.

J. Fall Protection Equipment - All employees working in areas described in the preceding paragraphs and not protected in prescribed manner must be equipped with fall protection harness and lanyard. Care must be exercised in selection of shock absorbing lanyards to insure the proper length.

K. Replacement of Railings and Coverings - All rails, covers, etc., removed for equipment installations will be immediately replaced. In no event shall a floor or wall opening be left unattended or unguarded in the appropriate manner.

L. Accident Reporting - All accidents and serious incidents (near misses) must be reported immediately to the Site Supervisor. The Competent Person shall investigate; implement changes to the fall protection plan as necessary. The changes shall be communicated to all employees.

1. Accident investigations shall be conducted to evaluate the fall protection plan for potential updates to practices, procedures or training in order to prevent reoccurrence.

Schmid shall provide for prompt rescue of employees in the event of a fall or shall assure the employees are able to rescue themselves.

SECTION 9

POWERED INDUSTRIAL TRUCKS

1. POWERED INDUSTRIAL TRUCKS

A. OSHA References - 29 CFR 1926.602, 29 CFR 1910.126, 29 CFR 1910.178

B. General - These procedures will be followed by all Schmid employees who drive powered industrial trucks will follow these procedures. For additional information, employees should consult the above reference OSHA standard and Client procedures.

1. All Powered Industrial Trucks will be inspected daily by the operator, prior to use. Discrepancies will be noted and vehicles will not be operated until repairs are made.
2. Lift trucks, stacks etc. will have the rated capacity clearly posted on the vehicle so as to be clearly visible to the operator.
3. Only trained and certified personnel will be able to operate Powered Industrial trucks, (employers is required to certify all authorized employees regarding competency on all types of equipment).
4. If two or more trucks in unison lift a load, the total load carried by any one truck shall not exceed its load.
5. All Powered Industrial Trucks used will meet the inspection, design, construction, stability, maintenance and operations as stated in ANSI Standard B56.1-1969.

C. Training Requirements - Schmid will have a qualified trainer that has the knowledge and ability to teach and evaluate operators certify all employees who operate a powered industrial truck have been trained in accordance with OSHA 29 CFR 1910.178 requirements, which include: (each certification will list Operators name, date trained, date evaluated, and the name(s) of the Trainer and Evaluator, as well as the equipment the employee is authorized to operate).

1. Formal instruction (lecture, discussion, videos, and written materials).
2. Practical exercises (instructor demonstrations and trainee exercises).
3. An evaluation of operators' performance in the workplace (critique).

D. Training Program Content Power industrial truck operators shall receive initial training in the following topics:

1. Operating instructions, warnings, and precautions for the types of truck the operator will be authorized to operate.
2. Differences between the truck and the automobile.
3. Truck controls and instrumentation; where located, what they do, and how they work.
4. Engine or motor operation.
5. Steering and maneuvering.
6. Visibility (including restrictions due to loading).
7. Fork and attachment adaption, operation, and use limitations.
8. Vehicle capacity.
9. Vehicle stability.
10. Vehicle inspection and maintenance that the operator will be required to perform.
11. Refueling and/or charging and replacement of batteries.
12. Operating limitations.
13. Any other operating instructions, warnings, or precautions listed in the operator’s manual.

14. Workplace related topics.
15. Surface conditions where the vehicle will operate.
16. Composition of loads to be carried and load stability.
17. Load manipulation, stacking and un-stacking.
18. Pedestrian traffic in areas where the vehicle will operate.
19. Narrow aisles and other restricted places where the vehicle will operate.
20. Hazardous (classified) locations where the vehicle will operate.
21. Ramps and other sloped surfaces that could affect the vehicles stability.
22. Closed environments and other areas where insufficient ventilation or poor vehicle maintenance could cause a buildup of carbon monoxide or diesel exhaust.
23. Other unique or potentially hazardous environmental conditions in the workplace that could affect safe operations.

E. Refresher Training - Schmid will provide refresher training to the operator every three years or when:

1. The operator has been observed operating the vehicle in an unsafe manner.
2. The operator has been involved in a near miss incident.
3. The operator has received an evaluation that reveals that the operator is not operating the truck safely.
4. The operator is assigned to operate a different truck.
5. A condition in the workplace has changed.

2. SAFE OPERATING PROCEDURES

A. Truck Operations

1. Standing - Trucks shall not be driven up to anyone standing in front of a bench or other fixed object.
2. Raised loads - No person shall be allowed to stand or pass under the elevated portion of any truck, whether loaded or empty.
3. Passengers - Unauthorized personnel shall not be permitted to ride on powered industrial trucks. A safe place to ride shall be provided where riding of trucks is authorized.
4. Keep arms in - The employer shall prohibit arms and legs from being placed between the up rights of the mast or outside the running lines of the truck.
5. Unattended Trucks
   a) When a powered industrial truck is left unattended, load engaging means shall be fully lowered, controls shall be neutralized, power will be shut off, and brakes set. Wheels shall be blocked if the truck is parked on an incline.
   b) A powered industrial truck is unattended when the operator is 25 feet or more away from the vehicle, which remains in his/her, view, or whenever the operator leaves the vehicle and it is not in his/her view.
   c) When the operator of an industrial truck is dismounted and within 25 feet of the truck still in his/her view, the load engaging means shall be fully lowered, controls neutralized, and the brakes set to prevent movement.
   d) Platforms - A safe distance shall be maintained from the edge of ramps or platforms while on any elevated dock, or platform or freight car. Trucks shall not be used for opening or closing freight doors.

e) Wheel Blocks - Brakes will be set and wheel blocks shall be in place to prevent movement of trucks, trailers, or railroad cars while loading or unloading. Fixed jacks may be necessary to support a semi-trailer during loading or unloading when the trailer is not coupled to a tractor. The flooring of trucks, trailers and railroad cars shall be checked for breaks and weakness before they are driven onto.

f) Headroom - There shall be sufficient headroom under overhead installations, lights, pipes, sprinkler systems, etc.

6. An overhead guard shall be used as protection against falling objects. It should be noted that an overhead guard is intended to offer protection from the impact of small packages, boxes, bagged material, etc., but not to withstand the impact of a falling capacity load.

7. Backrests - A load backrest extension shall never be used whenever necessary to minimize the possibility of the load or part of it from falling rearward.

8. Approved trucks - Only approved industrial trucks shall be used in hazardous locations.

9. Personnel Lifting - Whenever a truck is equipped with vertical only, or vertical and horizontal controls within the lifting carriage or forks for lifting personnel, the following additional precautions shall be taken for the protection of the personnel being elevated.

a) Use of a safety platform firmly secured to the lifting carriage and/or forks.

b) Means shall be provided whereby personnel on the platform can shut off the power to the truck.

c) Such protection from falling objects, as indicated necessary by the operating conditions should be provided.

10. Fire Exits - Fire aisles, access to stairways, and fire equipment shall be kept clear.

B. Traveling

1. All traffic regulations shall be observed, including authorized plant speed limits. A safe distance shall be maintained approximately three trucks lengths from the truck ahead, and the truck shall be kept under control at all times.

2. The right of way shall be yielded to ambulances, fire trucks, or other vehicles in emergency situations.

3. Other trucks traveling in the same direction at intersections, blind spots, or other dangerous locations shall not be passed.

4. The driver shall be required to slow down and sound the horn at cross isles and other locations where vision is obstructed. If the load being carried obstructs forward view, the driver shall be required to travel with the load trailing.

5. Railroad tracks/crossings shall be crossed diagonally whenever possible. Parking closer than 8 feet from the center railroad tracks is prohibited.

6. The driver shall be required to look in the direction of, and keep a clear view of the path of travel.

7. Grades shall be ascended or descended slowly.

8. Under all traveling conditions the truck shall be operated at a speed that will permit it to be brought to a stop in a safe manner.

9. Stunt driving and horseplay shall not be permitted or tolerated.

10. The driver shall be required to slow down for wet and slippery floors.

11. Running over loose objects on the roadway surface shall be avoided.

12. While negotiating turns, speed shall be reduced to a safe level by means of turning the hand steering wheel in a smooth, sweeping motion. Except when maneuvering at a very slow speed, the hand steering wheel shall be turned at a moderate, even rate.

C. Loading

1. Unstable Loads - Only stable or safely arranged loads shall be handled. Caution shall be exercised when handling off-center loads, which cannot be centered.
2. Capacity - Only loads within the stated capacity of the truck shall be handled.
3. Long Loads - Long or high (including multiple-tiered) loads, which may affect capacity, shall be adjusted.
4. Attachments - A truck equipped with attachments shall be operated as partially loaded trucks when not handling a load.
5. Load Position - A load engaging means shall not be placed under the load as far as possible; the mast shall be tilted backwards to stabilize the load.
6. Tilting - Extreme care shall be used when tilting the load forward backward, particularly when high lifting. Tilting forward with load engaging means elevated shall be prohibited except to pick up a load. An elevated load shall not be tilted forward except when the load is in a deposit position over a rack or stack. When stacking or lifting, only enough backward tilt to stabilize the load shall be used.

3. OPERATION OF THE TRUCK

A. Operation - If at any time a powered industrial truck is found to be in need of repair, defective or in any way unsafe, the truck shall be taken out of service until it has been restored to safe operating condition.

B. Fuel tanks shall not be filled while the engine is running. Spillage shall be avoided.

C. Spillage of oil or fuel shall be carefully washed away or completely evaporated and the fuel tank cap replaced before starting engine.

D. Leaks - No truck shall be operated with a leak in the fuel system until the leak has been corrected.

E. Open Flames shall not be used for checking electrolyte levels in storage batteries or gasoline level in fuel tanks.

SECTION 10

WELDING, BURNING AND CUTTING

1. **WELDING, BURNING AND CUTTING** operations are limited to qualified personnel only. Most client locations require the issuance of hot work permits prior to starting welding, cutting and burning operations. Due to the extra ordinary hazard created by these operations, extreme care must be taken during the procedure and pre-job set up.

A. OSHA References - 29 CFR 1926 Subpart J

B. Fire Prevention

1. Objects to be welded, cut, burned or heated should be moved to a designated safe location when practical.
2. First aid equipment shall be available at all times.
3. If the object to be welded or cut cannot be moved and if all the fire hazards cannot be removed, then guards shields, fire blankets, etc. shall be used to confine the heat, sparks and slag and to protect the immovable fire hazards. Welding, cutting, burning or heating operations must not be performed where the application of flammable paints, compounds or heavy dust accumulation will present a hazard.
4. The proper fire extinguishing equipment and fire watch must be in place prior to the onset of work.
5. Gas supplies to torches must be shut off at a point, (preferably the source) outside of confined spaces.
6. Torches and hoses must not be left in confined spaces and excavations overnight.
7. Welding and cutting on used drums is prohibited unless the drums have been properly cleaned and purged of hazardous materials.
8. Hollow spaces, cavities and containers must be vented and purged with an inert gas before preheating, welding or cutting.
9. In areas where either a flammable atmosphere or combustible materials may be present fire watch will be designated and will remain at the operation, plus a ½ hour after completion. The fire watch is required during the following:
   a) Locations where other than a minor fire might develop.
   b) Combustible materials closer than 35 feet (10.7M) to the point of operation.
   c) Combustibles that are 35 feet (10.7M) or more away but are easily ignited.
   d) Wall or floor openings within 35 feet (10.7M) radius expose combustible materials.
   e) Combustible materials are adjacent to the opposite side of metal partitions, ceilings or roofs.

Note 1. All persons performing fire watch duties will be trained in the proper use of fire extinguishing equipment and general fire watch duties.

Note 2. If the area has the potential for a flammable or explosive atmosphere LEL readings shall be continuously monitored with a pre-calibrated instrument for that purpose.

Note 3. If fire hazards cannot be moved or guarded, welding and cutting operations shall NOT be performed.

10. Hot work permits will be required for all burning, cutting and welding operations by the supervisor or designated safety representative. A copy of the permit is attached to the end of this section.

C. Gas Welding, Cutting and Burning

1. When transporting gas cylinders, they must be secured on a cradle, sling board or pallet. Choker sling or electric magnets must not be used.
2. The cylinders must be secured and transported in a vertical position with the valve protective caps in place.
3. Unless cylinders are firmly secured on a special carrier intended for the purpose, regulators must be removed and protective caps must be in place prior to movement.
4. An approved cylinder truck or chain must be sued to steady the cylinders while in use or storage.
5. The cylinder valve may be opened only when work is being performed.
6. All gas cylinders must be kept away from the actual welding or cutting operation and protected from sparks, hot slag or flames.
7. Cylinders may not be placed where they may become a part of an electrical circuit.
8. Oxygen cylinders must be stored in an upright position, with regulators removed and safety caps installed.
9. Oxygen cylinders must be separated from fuel cylinders by a minimum of 20 feet.
10. All cylinders must be properly labeled with content and hazard warnings.
11. Cylinders must have fixed had wheels, keys, handles or a non-adjustable wrench on the valve stem.
12. Acetylene cylinders must never be opened more than 1 and 1/2 turns of the spindle.
13. Before connecting a regulator to a cylinder valve, crack the valve open slightly and close to insure tight stop and no leakage. Do not stand in front of the valve when opening.
14. Fuel gas hose and oxygen hose must be easily distinguishable from each other. (Red hose for fuel gases, green hoses for oxygen and non-combustible gases black hose for inert gas and air).
15. All regulators, hoses, and valves must be kept free and clear of oil and other materials.
16. Parallel sections of oxygen and fuel hose that have been taped together must be taped with not more than 4 inches of tape each 12 inches.
17. Hoses in with noticeable or suspected defect must not be used.
18. All hoses, cables and other equipment must be kept clear of walkways and roadways.
19. Torches must be inspected each day for leaking shut off valves, hose couplings and tip connections.
20. Torches may be lit by friction lighters only.
21. All gauges, valves and pressure regulators must be in proper working order.
22. Cutting, welding and burning may not be performed on surfaces with protective coatings applied without proper breathing zone ventilation or appropriate respiratory protection.
23. Proper protective equipment must be worn when performing welding, cutting or burning.
24. Hoses must not be wrapped around an individual’s body.

25. Workers in charge of oxygen or fuel/gas supply equipment (including distribution piping systems and generators) must be instructed and judged competent for such work.

D. Arc Welding and Cutting

1. Employees assigned to operate arc welding equipment must be properly instructed and qualified to operate such equipment.
2. SDS for welding rods must be available in the Schmid HAZCOM program.
3. Positive ventilation must be provided when welding and cutting are performed in a confined space, or respiratory protection must be provided. Proper ventilation or respiratory protection procedures must be used when evolution of hazardous fumes, gases, or dust is possible.
4. All ground connections shall be inspected to insure that they are mechanically sound and properly rated for the required current.
5. A ground return cable must have a safe current carrying capacity equal to or exceeding the specified maximum output of the arc-welding unit.
6. The frames of all arc welding machines must be grounded either through a third wire in the cable containing the circuit conductor or through a separate wire that is grounded at the source of the current.
7. Gasoline or propane fueled portable welding machines and auxiliary generators must have a positive ground before placing them in service.
8. Arc welding and cutting operations with must be screened with non-combustible or flameproof screens wherever possible.
9. Use only manual electrode holders specifically designed for arc welding and cutting.
10. All current carrying parts must be fully insulated against the maximum voltage encountered to ground.
11. All arc welding cables must be capable of handling the maximum current requirements of the work being accomplished.
12. Cables must be equipped with standard insulated connectors of a capacity at least equivalent to that of the cable.
13. Proper eye and face protection must be used when performing arc welding or cutting.

E. Note 1 - All employees assigned arc welding and cutting duties must be familiar with OSHA 29 CFR 1910.254, OSHA 29 CFR 1910.252 Parts a, b and c, and with fire prevention and protection, health protection and ventilation, and protection of personnel.

F. Note 2 - Operators of equipment should report any equipment defect or safety hazards and discontinue use of equipment until its safety has been assured. Repairs shall be made only by qualified personnel.

G. Note 3 - Some Cities, Municipalities and Clients require that burners, welders and fire watch personnel be licensed. Therefore, prior to the start of the job Schmid will ascertain if licensing is required and provide only licensed welders, burners and fire watchers on those job sites that require licensing. Even in cases where personnel are not required to be licensed, persons, supervisors and fire watch shall be trained on the aforementioned policies and procedures prior to the commencement of cutting, burning and welding operations.

HOT WORK PERMIT

Location:		Work Area:	
Issued By:		Signature:	
Issued To:		Date:	
Time Issued:		Time Expires:	

Work Description: _____

☐Torching ☐Welding ☐Grinding ☐Electric Tool
☐Non-Intrinsically Safe Equipment ☐Other

Monitoring Equipment _____
Calibration Date _____
% LEL _____ %O2 _____

Precautions Taken:

☐Atmospheric Monitoring	☐Warning Signs	☐Barricades	☐LOTO
	☐Depressurize	☐Sewers Covered	☐Remove All Flammable/Combustible Material
☐Lines Purged	☐Depressurize	☐Fire Extinguisher	☐Fire Guard Required
☐Double Block & Bleed	☐Fire Systems Disabled	☐Fire Systems Enabled	

Other: _____

Fire Watch:	(print name)	
	(sign name)	
Technician:	(print name)	
	(sign name)	
Contractor:	(print name)	
	(sign name)	

☐ Job Completed ☐ Job Not Complete

SECTION 11

CRANES, DERRICKS AND HOISTS

1. **CRANES, DERRICKS AND HOISTS** - These rules apply to all Schmid employees and subcontractors. Additional specific information can be obtained from the referenced OSHA Standard.

A. OSHA References - 29 CFR 1926.1400

B. Cranes and Derricks

1. Only qualified and designated individuals may operate cranes, lifting equipment, and derricks. 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. Part of the qualification to include medical certification per the API 2D physical requirements. Operators should be properly trained in the use of fire extinguishers. Whenever there is a safety concern, the operator has the authority to stop and refuse to handle loads until a qualified person has determined that safety has been assured.

a) Vision of at least 20/30 Snellen in one eye and 20/50 in the other eye with or without glasses, and have depth perception.

b) Be able to determine between red, yellow and green.

c) Hearing, with or without a hearing aid, adequate for the specific operation.

d) And no history of disabling medical condition which may be sufficient reason for disqualification.

Note: Follow-up evaluations to be performed at least every four years.

2. Safety devices must be required on all equipment and must be in proper working order before operations begins. Non-compliant devices must be taken out of service and not resume until the device is working properly again.

3. All windows, windshields, mirrors, and other devices provided for visibility will be clean, free from cracks, and unobstructed.

4. All cranes shall be equipped with at least 1 ABC rated fire extinguisher or in the immediate vicinity of the crane.

5. The manufacturer's name, equipment specifications and procedures applicable to the operation of the equipment are readily available in the cab at all times. Rated capacities, recommended operating speeds, special hazard warnings, instructions and operator’s manual all be included

6. Rated load capacities, the most recent load test and recommended rules for safe operation will be conspicuously posted on all equipment at the operator's station. Schmid shall keep written record of all load tests.

7. A competent person shall inspect monthly all machinery and equipment prior to each use and during use to ensure that it is in safe operating condition. Ropes shall also be inspected. An initial inspection, monthly, and prior to each use inspections are required to be completed and documented. The inspection shall be documented and include date of the inspection, ID of the rope being inspected, and signature of person performing the inspection. The inspections are to be turned into the Site Supervisor or designated Site Safety Representative no later than 12 hours after the inspection period. The inspections must be retained for three months.

8. All crawler, truck, or locomotive cranes shall meet the requirements of ANSI Standard B30.5-1968, Safety Code for Crawler, Locomotive, and Truck Cranes.

9. Passengers will not be transported on cranes.

10. Cranes and Derricks will not operate booms, loads, or rigging within 10 feet of overhead electrical lines rated at 50 kV or below, 0.4 inches will be added to 10 feet for each 1 kV over 50 kV. The work zone shall be identified by demarcating boundaries such as flag and range limiting devices, or defining the work zone as 360 degrees around the equipment up to the maximum working radius. The hazard assessment must determine if any part of the equipment could get closer than 20 feet to a power line.

a) If it is determined that any part of the equipment, load line or load could get closer than 20 feet to a power line then at least one of the following measures must be taken:

(1) Ensure the power lines have been de-energized and visibly grounded.

(2) Ensure no part of the equipment, load line or load gets closer than 20 feet to the power line.

(3) Determine the line's voltage and minimum approach distance permitted in Table A.

kV RATING	MINIMUM DISTANCE
Set Crane	
50 kV or Below	Ten feet (10')
Over 50 kV	Ten feet (10') plus 0.4 inches (.04") for each additional kV
Moving Crane w/Boom Lowered and No Load	
50 kV or Below	Four feet (4')
Between 50 kV and 345 kV	Ten feet (10')
Between 345 kV and 750 kV	Sixteen feet (16')

11. A competent person must be assigned to observe and take prompt action in situations where the operator does not have clear visibility.

a) Only one competent person will be assigned as the signal person.

b) The operator will only follow the assigned signal persons commands, unless it is a stop signal for an emergency or could be an emergency, and then the operator will obey a stop signal from anyone.

12. Accessible areas within the swing radius of the rear of rotating superstructure will be properly barricaded to prevent employees from being struck or crushed by the crane.

13. A competent and qualified person must direct the assembly/disassembly of equipment.

14. The operator and the qualified signal person providing hand signals to the crane or derrick operator must know and use the proper hand signals for the equipment. The signals must be posted at the site (see example of Mobile Crane Hand Signals at the end of this section).

a) Hand signals will be those prescribed by the applicable ANSI standard for the type of crane in use.

b) No response shall be made unless signals are clearly understood.

c) Work is immediately stopped or interrupted when communication is lost between the operator and the signal person.

d) The operator has the authority to stop or refuse to handle loads if he or she feels that the operation jeopardizes safety concerns.

e) The operator also has the authority to interrupt work for any emergency or safety concern. He or she will stop operations in a safe manner.

f) When work is interrupted, stopped or refused the operations must not proceed until a qualified person deems that the safety is assured.

g) When safety is assured communication between the operator and signal person will be re-established and work will resume.

15. Tag lines should be used on all loads that may spin or swing.

16. Do not pull the crane load-block to one side to attach the load. It must be positioned over the load in accordance with safe rigging procedures.

17. Crane outriggers must be in place at all times, except when traveling. Outriggers may need to be extended, however, when traveling with a load.

18. Cranes must be operated on firm, level ground. Mats, plating, etc. acceptable for the weight of the equipment and the lift, must be used when the ground is soft or recently excavated or when the load is near lift capacity.

19. Manufacturer’s procedures and prohibitions must be complied with when assembling and disassembling equipment.

20. Schmid or its Subcontractor shall comply with the manufacturer's specifications and limitations applicable to the operation of any and all cranes and derricks. When manufacturer’s specifications are not available, the limitations assigned to the equipment shall 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 shall not exceed the capacity, rating, or scope recommended by the manufacturer.

21. Rated load capacities, and recommended operating speeds, special hazard warnings, or instruction, shall be conspicuously posted on all equipment. Instructions or warnings shall be visible to the operator while he is at his control station.

22. Modifications or additions which affect the safe operation of the equipment may only be made with the manufacturer's written approval.

23. All hooks and chains shall be inspected months; records of inspections shall be kept on files by Schmid.

C. Hoists

1. The employees shall comply with the manufacturer's specifications and limitations.

2. Rated load capacities, recommended operating speeds, and special hazard warnings or instructions will be posted on cars and platforms.

3. Hoist way entrances of material hoists shall be protected by substantial full width gates or bars.

4. Hoist way doors or gates of personnel hoists shall not be less than 6 feet 6 inches high and protected with mechanical locks, which cannot be operated from the landing side and are accessible only to persons on the car.

5. Overhead protective coverings shall be provided on the top of the hoist cage or platform.

6. All material hoists shall conform to the requirements of ANSI Standard A10.5-1969 (Safety Requirements for Material Hoists).

7. The supporting structure, to which a hoist is attached, must have a safe working load equal to or greater than that of the hoist.
8. Loose tools or materials will not ride on the load.
9. Do not ride the load.
10. Do not walk under or position yourself (or anyone else) under a load.
11. Tag lines should be used on all loads that may spin or swing.
12. A qualified rigger must be utilized in employees must enter the fall zone for any reason.
13. A qualified signal person must be provided for the following situations:
    a) The point of operation is not in full view of the operator.
        (1) The operator can't see the load.
        (2) The operator can't see the landing area.
        (3) The operator can't see the path of motion.
        (4) The operator can't judge load distance.
    b) The view is obstructed when the equipment is traveling.
    c) The operator or the person handling the load determines it is necessary due to site specific concerns.
        (1) When a crane is working close to power lines.
        (2) Another crane is working in the vicinity.
14. A signal person must possess the following qualifications:
    a) Signal persons must be certified by test.
    b) Know and understand the type of signals used.
    c) Be competent in the application of the type of signals used.
    d) Have a basic understanding of equipment operation and limitations, including the crane dynamics involved in swinging and stopping loads and boom deflection from hoisting loads, and
    e) Know and understand the relevant requirements of the provisions of the standard relating to signals.
15. An operator will respond to signals only from the designated signalman using appropriate signals, except where voice communications equipment is used. An operator will obey a stop signal from anyone.

D. Wire Ropes must be taken out of service when one of the following conditions occur.
1. Running ropes are found to have 6 randomly distributed broken wires in one lay, or 3 broken wires in one stand or one lay.

2. Wear has reduced the diameter or outside individual wires to 2/3 of its original diameter.
3. Kinking, crushing, bird caging, heat damage, or any other damage resulting in distortion of the rope structure has been found.
4. In standing ropes, more than two broken wires in one lay in sections beyond end connections, or more than one broken wire at end connections.

E. Slings - Each sling shall be inspected before every use. Safe work practices shall be used with all slings.
1. Slings, fastenings, and all attachments shall be inspected by a qualified competed person who is designated by Schmid.
2. Whenever any sling is used specific safety practices shall be observed.

3. Proper care and use of all slings (alloy steel chain slings, wire rope slings, metal mesh slings, natural and synthetic fiber rope slings, and synthetic when slings) when utilized must be conducted in accordance with manufacturer's instructions.

F. Whenever internal combustion engine powered equipment exhausts in enclosed spaces, tests shall be made and recorded to see that employees are not exposed to unsafe concentrations of toxic gases or oxygen deficient atmospheres.

G. A Preventative Maintenance plan shall be set up for all lifting, hoisting equipment, and cranes. The preventative maintenance plan shall be set up as per manufacturer specifications. An out of order sign shall be posted when maintenance and repairs are conducted.

1. Scope - This policy and procedure applies to the design, construction testing, use, and maintenance or personnel platforms and hosting of personnel platforms on the lines of cranes.

The use of a crane to hoist employees on a personnel platform is prohibited, except when the erection, use, and dismantling of conventional means of worksite (e.g. personnel hoist, ladder, stairway, aerial lift, elevating work platform, or scaffold) would be more hazardous, or is not possible because of industrial design or worksite conditions. The determination of hazard: industrial design or worksite condition shall be documented and filed with the, Schmid Safety Director.

2. Definitions

a) Failure means load refusal, breakage, or separation of components.

b) Hoist or Hoisting means all crane functions such as lowering, lifting, swinging, booming in and out or up and down, or suspending a personnel platform.

c) Maximum Intended Load means the total of all employees, tools, materials, and other loads reasonably anticipated to be applied to a personnel platform or personnel platform component at any one time. Computations shall be documented and filed with the, Schmid Safety Director.

d) Runaway means a firm, level surface designed, prepared, and designated as a path of travel for the weight and configuration of the crane being used to lift and travel with the crane suspended platform. An existing surface may be used as long as it meets these criteria. The designated path shall be documented for each lift procedure a filed with the Schmid Safety Director.

e) Training means all individuals involved in the lifting and use of crane suspended personnel platforms shall be trained in this procedure. This training shall be documented and on file with the Schmid Safety Director prior to any lifts being accomplished.

3. Crane Requirements - Selection of crane and operator are critical components of safe use of crane suspended personnel platforms. The crane operator shall be certified by their employer as a competent person to perform this procedure. Inspection data for the crane being used shall be provided prior to accomplishing lift and job set-up. This documentation shall be on file with the Schmid Safety Director.

a) Load Lines shall be capable of supporting, without failure, a minimum of seven times the maximum intended load. If the crane is equipped with rotation resistant rope, the lines must be capable of supporting, without failure, a minimum of ten times the intended load. (The required design factor is achieved by taking the current safety factor of 3.5 and applying the 50 percent de-rating of the crane capacity).

b) The load and boom hoist drum brakes, swing brakes, and locking devices such as pawls or dogs shall be engaged when the occupied personnel platform is in a stationary working position.

c) The crane shall be uniformly level within 1 percent of level grade and located on firm footing.

d) The crane shall be equipped with outriggers and the outriggers shall be fully deployed in accordance with manufacturer specifications when hoisting employees.

e) The total weight of the loaded personnel platform and related rigging shall not exceed 50 percent of the rated capacity for the radius and configuration of the crane or derrick.

f) The use of cranes equipped with booms in which lowering is controlled by a brake without aid from other devices that slow the lowering speed is prohibited.

g) Cranes with variable angle booms shall be equipped with a boom angle indicator, readily visible to the operator.

h) Cranes with telescoping booms shall be equipped with a device to indicate clearly to the operator at all times, the boom's extended length.

i) A positive acting device shall be used to prevent contact between the load block or overhaul ball and the boom tip (anti-two blocking device), or a system shall be used which deactivates the hoisting action before damage occurs in the event of a two blocking situation.

j) The load line hoist drum shall have a system or device on the power train, other than the load hoist brake, which regulates the lowering rate of speed of the hoist mechanism (controlled load lowering). **Freefall is prohibited.**

k) Certification that the crane complies with this section must be on file with the Schmid Safety Director.

4. Design Criteria for Platform

a) A qualified engineer or a qualified and competent person in industrial design shall design the personnel platform and suspension system. The design information shall be on file with the Schmid Safety Director.

b) The suspension system shall be designed to minimize tipping of the platform due to movement employees and their equipment occupying the platform.

c) Be capable of supporting, without failure, its own weight and a minimum of five times the maximum intended load.

d) Each personnel platform shall be equipped with a guardrail system and shall be enclosed at least from the toe board to mid-rail with either solid construction of expanded metal having openings no greater than ½ inch.

e) Harness/lanyard anchorages shall be capable of sustaining a minimum dead weight of 5400 lbs. and located above the point of operation.

f) A grab rail shall be installed inside the entire perimeter of the personnel platform.

g) Access gates shall not be allowed to swing outward during hoisting and shall be equipped with a restraining device to prevent accidental opening.

h) Headroom shall be adequate to allow employees to stand upright in the platform.

i) All ground crew and employees working in the platform shall use hard hats. Where hazards from falling objects may exist, additional overhead protection shall be provided.

j) All rough edges exposed to contact by employees shall be smooth surfaced to prevent injury puncture, laceration, etc.

k) A qualified welder familiar with the weld grades, types, and materials specified in the platform design shall perform all welding of personnel platform and components. Repairs or additions to the personnel platform shall be documented and on file with the Schmid Safety Director.

l) The weight of the platform and its rated load capacity or maximum intended load shall be permanently affixed to the personnel platform in a clearly visible location.

5. Personnel Platform Loading

a) The personnel platform shall not be loaded in excess of its rated load capacity. Platforms that do not have a rated load capacity shall not be loaded in excess of the posted maximum intended load data.

b) The number of employees occupying the personnel platform shall not exceed the number required for the work being performed and item 5 a) above.

c) Personnel platforms and associated rigging shall be used only for employees, their tools, and materials necessary to accomplish their work and shall not be used to hoist only materials or tools when not hoisting personnel.

d) Materials and tools for used during a personnel lift shall be secured to prevent displacement or shifting.

e) Materials and tools for use during a personnel lift shall be evenly distributed within the confines of the platform while the platform is suspended.

6. Personnel Platform Rigging

a) Certification data shall be on file with the Schmid Safety Director for all rigging equipment used in conjunction with Personnel Platforms.

b) When a wire rope bridle is used to connect the personnel platform to the load line, each bridle leg shall be connected to a master link or shackle in such a manner as to ensure that the load is evenly divided among the bridle legs. All Shackles must be hex nut and cotter pin type and cotter pins must be installed.

c) Hooks on overhaul ball assemblies, lower load blocks, or other attachment assemblies shall be of a type that can be closed and locked, eliminating the hook throat opening.

d) Wire rope, shackles, rings, master links, and other rigging hardware shall be capable of supporting, without failure, at least five times the maximum intended load applied or transmitted to that component. Where rotation resistant rope is used, the slings shall be capable of supporting without failure at least ten times the maximum intended load.

e) All eyes in wire rope slings shall be fabricated with thimbles.

f) Bridles and associate rigging for attaching the personnel platform to the hoist line shall not be used for any purpose other than hoisting of the personnel platform.

7. Weather - The impact of weather on Personnel Platform work is of extreme importance.

a) Lifts shall be terminated if the wind is above 15 miles per hour (MPH).

b) Lifts shall be terminated at the first indication of electrical storms.

c) Lifts shall be terminated in the event of rain, snow, hail, or ice storms.

d) Lift platforms shall be clear of any ice and snow prior to commencement of lift.

8. Procedure

a) All documentation required in Part 1 of this policy and procedure shall be on file with the Schmid Safety Director and at the job site. The documentation shall be available for review by individuals or client representatives associated with the lift.

b) A pre-lift safety meeting shall be conducted with all personnel involved in the lift. The meeting shall be documented and the following mandatory items reviewed:

(1) Scope of work
(2) Site hazards
(3) Job specific hazards
(4) Emergency equipment and procedures
(5) Communication devices and signals
(6) Mandatory safety equipment

c) A safety check of the crane, platform, rigging equipment, fall protection devices, and hook up shall be made and documented by the employees involved in the lift. Any equipment found deficient should be immediately removed from the work area and replaced with certified equipment that shall not alter the platform or rigging lifting data.

d) Secure a 3/4 inch diameter shackle to the eyehole on the boom head section.

e) Attach the eye-spliced end of a 5/8 inch diameter nylon rope to the 3/4 inch diameter shackle. The rope spool should be used for weight to ensure that the safety line remains straight. No more than two persons per rope.

f) Attach a minimum of 1/2 inch diameter propylene rope for a tag line on the bottom of the basket.

g) Use one **Atlas Kwik Stop**, one **Gemtor Rope Grab** or one similar device for each person

h) Headsets, two way radio, or telephone communication shall be established between the crane operator and employees being raised if a height of greater than 50 feet is to be reached.

i) Full body harness and a 4 foot shock absorbing lanyard shall be worn and connected by all employees being lifted.

9. Pre-Lift Test -This pre-lift test shall be performed with the personnel platform unoccupied. Tools and equipment to be used may be loaded and secured in the platform prior to performing the test. This test must be repeated each time the crane is repositioned. An alternate lift route is used or the crane is returned to a previously lifted or tested location. Employees shall not be lifted until the pre-lift test is completed and documentation is established.

a) A full cycle operational test must be made prior to lifting employees.
b) The platform shall carry twice the intended load during the lift test.
c) Stability of the footing shall be verified by visual inspection during the full cycle operational test.
d) Pre-lift plans showing boom angle and maximum intended load shall be prepared for each group of lifts.
e) All shackles shall be hex nut and cotter pin type with cotter pins installed.
f) Insure that there is as little boom movement as possible when the basket is in use.
g) Hoist ropes shall be free of kinks.
h) Multiple part lines shall not be twisted around each other.

i) The primary attachment shall be centered over the platform.

j) The hoisting system shall be inspected if the load rope is slack to ensure that all ropes are properly seated on drums and in sheaves.

k) A visual inspection of the crane, rigging, personnel platform, and the crane base support shall be conducted and documented by a competent person immediately after the trial lift to determine if any defect or adverse effect upon any component or structure was caused by the test.

l) Any defect found during inspections, which create or can be expected to create a safety hazard shall be corrected and verified by a competent person prior to hoisting personnel. If repairs or modifications are made to the platform and rigging, the platform shall be subjected to proof testing at 125 percent of the platform's rated capacity by holding it in a suspended position for five minutes with the load evenly distributed on the platform. After proof testing, the competent person shall re-inspect the platform and rigging for deficiencies. Proof testing is required each time repair or modification is made and must be accomplished, inspected, and documented prior to lifting of personnel.

m) Prior to lifting employees, the platform shall be hoisted a few inches from the ground and the competent person shall perform a final pre-lift safety check.

10. Work Practices

a) Employees shall keep all parts of the body inside the platform during raising, lowering, and positioning. (Exception: This does not apply to the signalman in the basket).

b) Employees shall not enter or exit a hoisted personnel platform that is not landed.

c) No lift shall be made on other crane load lines during this procedure.

d) The personnel platform shall be secured to the structure unless securing the platform creates an additional safety risk.

e) Tag lines shall be used unless their use creates an unsafe condition.

f) The crane operator shall remain at the controls at all times when the crane engine is running and the platform is occupied.

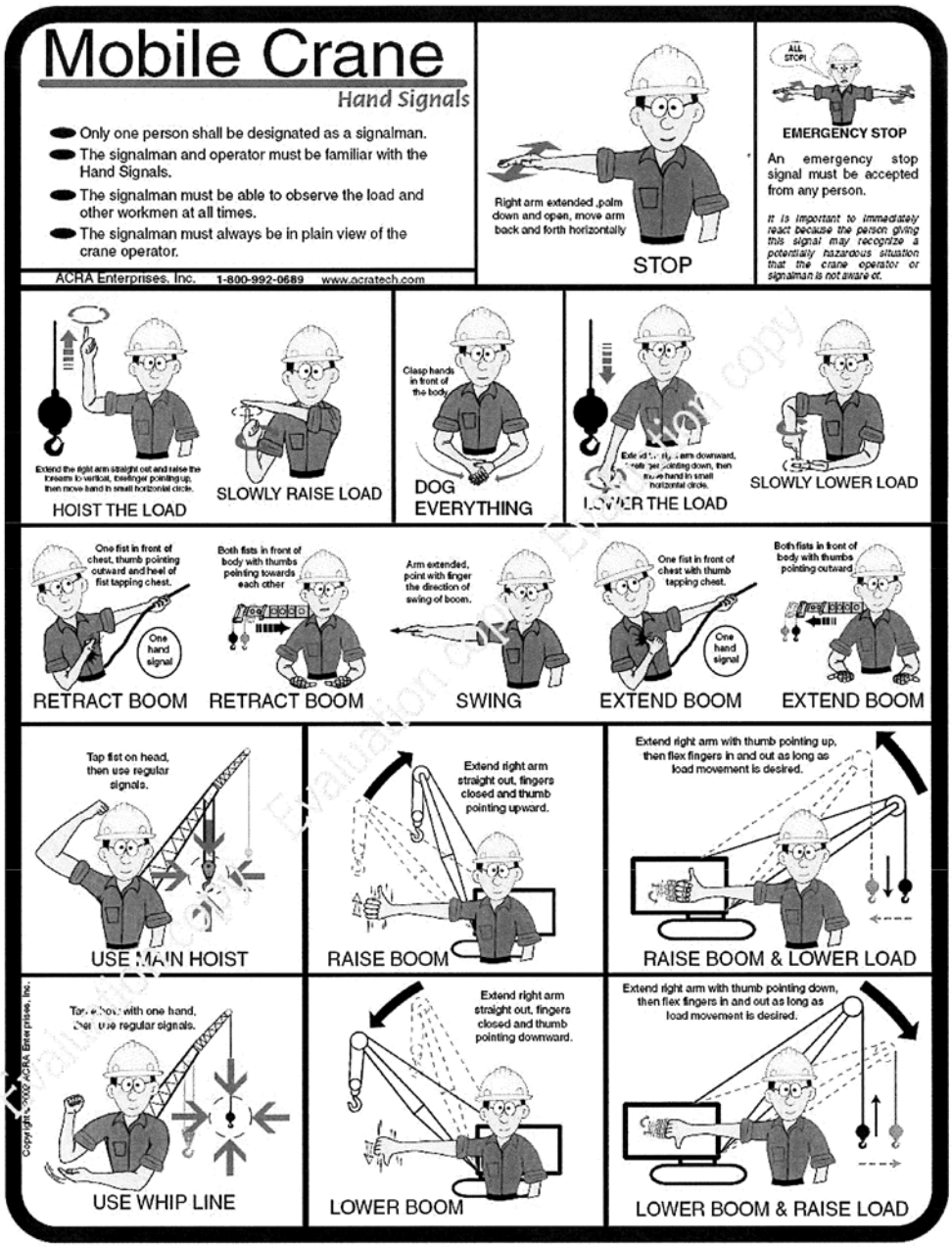
g) Hoisting of employees shall be immediately discontinued upon indication of any dangerous weather condition, site emergency, or any other known or suspected hazard.

h) Employees being hoisted hall remain in continuous sight and direct communication with the crane operator or signal person.

i) If work over water is required, the employees being hoisted shall wear personal floatation devices and ring buoys with a minimum of 200 feet of attached line shall be available at the crane.

j) Cranes shall not travel while employees occupy the personnel platform.

11. **Exception to this policy and procedure will not be made and compliance with all items is mandatory. Violation of this policy and procedure will result in immediate termination.**


Mobile Crane
Hand Signals
Only one person shall be designated as a signalman.
The signalman and operator must be familiar with the Hand Signals.
The signalman must be able to observe the load and other workmen at all times.
The signalman must always be in plain view of the crane operator.
ACRA Enterprises, Inc. 1-800-992-0689 www.acratech.com
Right arm extended ,palm down and open, move arm back and forth horizontally
STOP
ALL STOP!
EMERGENCY STOP
An emergency stop signal must be accepted from any person.
It is important to immediately react because the person giving this signal may recognize a potentially hazardous situation that the crane operator or signalman is not aware of.
Extend the right arm straight out and raise the forearm to vertical, fingers pointing up, then move hand in small horizontal circle.
HOIST THE LOAD
SLOWLY RAISE LOAD
Clasp hands in front of the body
DOG EVERYTHING
SLOWLY LOWER LOAD
One fist in front of chest, thumb pointing outward and heel of fist tapping chest.
One hand signal
RETRACT BOOM
Both fists in front of body with thumbs pointing towards each other
RETRACT BOOM
Arm extended, point with finger the direction of swing of boom.
SWING
One fist in front of chest with thumb tapping chest.
One hand signal
EXTEND BOOM
Both fists in front of body with thumbs pointing outward.
EXTEND BOOM
Tap fist on head, then use regular signals.
USE MAIN HOIST
Extend right arm straight out, fingers closed and thumb pointing upward.
RAISE BOOM
Extend right arm with thumb pointing up, then flex fingers in and out as long as load movement is desired.
RAISE BOOM & LOWER LOAD
USE WHIP LINE
Extend right arm straight out, fingers closed and thumb pointing downward.
LOWER BOOM
Extend right arm with thumb pointing down, then flex fingers in and out as long as load movement is desired.
LOWER BOOM & RAISE LOAD

SECTION 12

PREVENTATIVE MAINTENANCE PROGRAM

1. **PREVENTATIVE MAINTENANCE PROGRAM** - Establishment of a plan for the control of and ongoing maintenance of equipment owned and/or operated by Schmid.

Purpose - To ensure that the equipment of Schmid is maintained in a safe operating condition according to the manufactures requirements.

Scope - This plan covers all equipment owned, leased by, rented by or on loan from or to Schmid. This is to include all gas, diesel, battery and electric powered equipment, excluding hand tools.

An inventory of the company's machinery/equipment will be established and kept current. When new machinery or equipment is acquired, it will be added to the inventory.

A. Inventory Equipment

1. A current and up to date inventory will be established using a format to identify ownership of, the type, size, age of and manufacturer of the equipment owned and/or operated by Schmid.
2. Establish who is responsible for maintenance and/or periodic or annual inspections.
3. Location of equipment: what job site, or where stored.
4. Condition of equipment: that is, is it in service, out of service and/or being repaired.

B. Scheduled maintenance, inspections, certifications

1. Schmid will maintain the equipment in a good and safe operating condition following at minimum the manufacturer’s requirements. The plan will be provided to all supervisors and maintenance personnel at each job site.
   a) The plan shall be followed by performing routine maintenance on equipment per manufacturer’s requirements, industry standard, the conditions and or use of the equipment.
2. Inspection of equipment shall be established by Schmid with requirements provided to all supervisors and maintenance personnel at each job site. A copy of the Equipment Inspection Checklist is attached at the end of this section.
3. The requirement for and types of inspections shall be made to all employees, including maintenance and operating personnel.
   a) Types and frequency of inspections required:
      (1) Daily walk around, fluids, tires, tracks, hoses, lights, check for leaks or other potential problems.
      (2) Periodic - A more in depth inspection, Checking hoist rope on crane for example or taking oil samples to have checked for potential wear or engine damage.
      (3) Certification - For example an annual inspection of a crane by a certified inspector.

C. Recordkeeping

1. Preventive maintenance performed on machinery or equipment must be documented and retained for the life of the machinery or equipment.
2. Maintenance records shall be kept both; on site and copies at the company’s corporate office.

3. These records shall indicated the piece of or other description equipment by number.

4. The type and date maintenance was provided and any repairs required due to damage caused by accident or misuse.

D. Defective equipment remove from service repair or replace.

1. Employees shall remove from service any piece of equipment that is found to be defective.

2. This shall be done by use of either a tag or sticker or similar system used to identify that the equipment is out of service. The nature of the problem and that the supervisor and maintenance or lesser of the equipment have been notified.

3. Defects observed in machinery or equipment shall be reported to a supervisor, and must be repaired or replaced before being used again.

4. The equipment shall be removed if possible and can be done safely from the active job site.

EQUIPMENT INSPECTION CHECKLIST

TYPE OF EQUIPMENT:_____ WEEK STARTING: ____/____/____

UNIT NO.:_____ CREW:_____

DAILY SERVICE AND MAINTENANCE INSPECTION	M	T	W	T	F	S	S
1. BRAKES: Operation of tractor brakes and drawworks breaks.	☐	☐	☐	☐	☐	☐	☐
2. CABLES: Winch and drawworks. Insect for obvious damage.	☐	☐	☐	☐	☐	☐	☐
3. BLOCKS: Safety latch apparatus and overall block condition.	☐	☐	☐	☐	☐	☐	☐
4. BOOM AND WEIGHT RACKS: Inspect for cracks.	☐	☐	☐	☐	☐	☐	☐
5. ENGINE AND DRIVELINE: Engine fluid levels.	☐	☐	☐	☐	☐	☐	☐
6. TRANSMISSION: Operation checks. Inspect for leaks.	☐	☐	☐	☐	☐	☐	☐
7. OPERATION STATION: Free of non-essential items.	☐	☐	☐	☐	☐	☐	☐
8. BACKUP ALARM: Operational	☐	☐	☐	☐	☐	☐	☐
9. LIGHTS: Operational	☐	☐	☐	☐	☐	☐	☐
10. HOUR METER READING:	☐	☐	☐	☐	☐	☐	☐

REMARKS: Investigate Unusual Noises or Problems

_____

_____

State All Repairs, Modifications or Adjustments Made to Machine

_____

_____

NO COMPONENT OF THIS MACHINE MAY BE REMOVED OR MODIFIED WITHOUT AUTHORIZATION OF THE EQUIPMENT MANAGER OR HIS DESIGNATE.

_____ _____

OPERATOR'S SIGNATURE MASTER MECHANIC

COPIES: (White) Safety / (Yellow) Stays in Book

SECTION 13

EXCAVATION, TRENCHING AND SHORING

1. **EXCAVATION, TRENCHING AND SHORING POLICY AND PROCEDURE** - An excavation, as defined by OSHA 29 CFR 1926.650, means any man-made cut, cavity, trench, or depression in an earth surface, formed by earth removal. All excavation work performed by Schmid as the contractor or sub-contractor, will conform to the guidelines of this policy, the above referenced OSHA standards. If the client's procedures and policies meet or exceed this document, the client policy and procedures will be used. **This policy and procedure is limited to excavations or less than 20 feet in depth. Excavations that exceed 20 feet require Shoring Systems designed by a qualified professional engineer.**

A. OSHA References - 29 CFR 1926.650, 29 CFR 1926.651, 29 CFR 1926.652.

B. Definitions

1. Accepted Engineering Practices are those requirements, which are compatible with standards of practice required by a registered professional engineer
2. Aluminum Hydraulic Shoring is a pre-engineered shoring system comprised aluminum hydraulic cylinders (cross braces) used in conjunction with vertical rails (uprights) or horizontal rails (whalers). The system is designed specifically to support the sidewalls of an excavation and prevent cave-ins
3. Bell-Bottom Pier Hole is a type of shaft or footing excavation, the bottom is made larger than the cross section above to form a belled shape.
4. Benching is a method of protecting employees from cave-ins by excavating the sides to form one or a series of horizontal levels or steps, usually with vertical or near-vertical surfaces between the levels.
5. 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 by falling or sliding in a quantity that may be sufficient to entrap, bury, or injure and immobilize a person.
6. Competent Person is one who is capable of identifying existing and predictable hazards in the surroundings or working conditions, which are unsanitary, hazardous, or dangerous to employees. A competent person has the ability and authority to take prompt corrective measures to eliminate the previously mentioned conditions.
7. Cross Braces are the horizontal members of a shoring system installed perpendicular to the sides of the excavation, the ends of which bear against either uprights or Wales.
8. Faces or Sides are the vertical or inclined earth surfaces formed as a result of the excavation.
9. Failure is the breakage, displacement, or permanent deformation of a structural member or connection that would reduce its structural integrity and its support capabilities.
10. Hazardous atmosphere is an atmosphere that may be harmful, cause death, illness, or injury by being explosive, poisonous, flammable, corrosive, oxidizing, irritating, or toxic.
11. Kick out is the accidental release or failure of a cross brace.
12. Protective system is a method of protecting employees from cave in’s, materials that could roll or fall into the excavation or excavation face, collapse of adjacent structures. They include support systems, sloping and benching systems, shield systems, and other systems, which provide the necessary protection.
13. Ramp means an inclined walking or working surface used to gain access to one point from another and is constructed from earth or structural materials like wood or steel.

14. Registered Professional Engineer is a professional engineer registered in the state where the work is to be performed.

15. Sheeting is the member of a shoring system that retains the earth in position and is supported by other members of the shoring system.

16. Shield (Trench Box, Trench Shield) is a structure that is able to withstand the forces of a cave-in. Shields can be permanent structures that can be designed to be portable and moved along as the work progresses, pre-manufactured, or job-built in accordance with OSHA 29 CFR 1926.652(c)(3).

17. Shoring (Shoring System) is a structure such as a metal hydraulic, mechanical, or timber shoring system that supports the sides of an excavation and is designed to prevent cave-ins.

18. Sloping (Sloping System) excavation to form sides of an excavation that are inclined away from the excavation. The angle of incline required to prevent a cave-in varies with differences in factors such as the soil type, environmental conditions of exposure, and application of surcharge loads.

19. Stable Rock is a solid mineral material that can be excavated with vertical sides and will remain intact while exposed. (See the standard for methods of converting unstable rock to stable rock).

20. Structural Ramp is a ramp made of steel or wood and usually used for vehicle access. Soil or rock ramps are not considered structural.

21. Support System is a structure such as underpinning, bracing or shoring which provides support to an adjacent structure, underground installation, or the sides of an excavation.

22. Tabulated Data are tables and charts approved by a registered professional engineer and used to design and construct a protective system.

23. Trenches are a narrow excavation, in relation to length, made below the surface of the ground. Generally, the depth is greater than the width, but the width of a trench measured at the bottom is not greater than 15 feet. If forms or other structures are installed or constructed in an excavation and reduce the dimension from the structure to the side to 15 feet or less the excavation is considered a trench.

24. Uprights are vertical members of a trench shoring system placed in contact with the earth and usually positioned so that individual members do not come in contact with each other. Uprights in contact with each other are sheeting.

25. Wales are horizontal members of a shoring system placed parallel to the excavation face whose sides bear against the vertical members of the shoring system or earth

26. Confined space for the purpose of the excavation standard is defined as one having: (refer to Section 7 for more specific information).

a) Limited access and egress.
b) Ventilation, which could produce or contain a hazardous atmosphere.
c) Is not designed for continuous human occupancy.
d) Is deeper than 4 feet.

C. Pre Excavation Checks – See copy of the Excavation Safety Inspection Checklist at the end of this section.

1. Hidden obstructions or hazards may be identified by obtaining and checking site plans identifying underground pipes or utilities in the area of the excavation. Care should be used as these plans and records may not be up-to-date or accurate.

2. For exposure to public traffic, the employees shall be provided a highly reflective vests, and flag and/or light.
3. Tests should be conducted for air contaminants (oxygen, flammable gases, etc. and provide ventilation where necessary.
4. Check the area for previously disturbed ground.
   a) Excavations in previously disturbed ground may require additional bracing and shoring.
   b) Previously disturbed ground near a new excavation may also require use of bracing and shoring in the new excavation.

D. Shoring Use
1. All trenches over 5 feet in depth must be shored, sloped, or shield provided to protect workers.
2. Excavations shallower than 5 feet must also be sloped or shored if they are in unstable soil.
3. The depth of an excavation must be measured at its greatest vertical dimension.
4. Spoil piles, located close to the edge of an excavation will affect the vertical depth.

Note: Workers kneeling in a trench less than 5 feet can still be exposed to the hazards of cave-ins or hazardous environments

E. Sloping - There are three methods of sloping a trench to protect workers.
1. Sloping is cutting back the trench walls to the proper angle of repose. Refer to OSHA 29 CFR 1926 Subpart P, Table B-1.
2. Angles of repose are dependent upon soil classification, water conditions, previous soil disturbances, etc.
3. The proper angle should be independently determined by a qualified person for each site and if conditions require each trench at the same site.
4. Where the excavation has water conditions, silty material, loose boulders, and areas where erosion, deep frost action, and slide planes appear, the angle of repose must be flattened.

F. Shoring of Trenches Trench shoring is installed to resist or replace the force on the excavation face.
1. Shoring of a trench may be accomplished with the use of wood timbers, screw jacks, hydraulic rams, or combinations of all of these methods.
2. Timbers must be in sound condition and free of major defects. They must be equal to the grade size specified. Workers must be alert for warning signs of splintering or separating wood fibers. **Failure of the shoring is eminent when these signs are detected and workers must evacuate the excavation.**
3. Steel shoring components provide little warning before failure and workers must check and be alert for bent or damaged members.
4. Pressure Gauges, cylinders, and rails must all be in good condition if hydraulic shoring is used. Signs of fluid leakage must be detected and repaired.

G. Trench Shoring Methods - The type of shoring to be used is determined by the soil type and soil conditions. Ground water and water intrusion can weaken the soil face and add weight, adding additional force on the shores. If the excavation is below the water line, the shoring should be driven below the bottom of the surface of the trench to prevent undermining.

1. Tight sheeting must be provided where seepage occurs. The excavation should be kept dry 24 hours per day to avoid the possibility of saturation and possible failure of the excavation wall.
2. Shoring in Hard Compact Soil is commonly accomplished by open sheeting or skip shoring.
   a) Struts must be placed in a true horizontal position and square to the sides of the trench at a maximum vertical spacing not to exceed OSHA 29 CFR 1926 Subpart B, Tables C1.1-C1.3, C2.1-C2.3, Tables D1.1-D1.3, or the manufacturer's tabulated data.
   b) The ends must be secured to prevent slippage or kick outs.
   c) The lateral spacing between struts must not exceed OSHA Tables C1.1-C1.3, C2.1-C2.3, Tables D1.1-D1.3 or manufacturers tabulated data or a professional engineer's specification.
   d) Struts must be inspected daily for movement or decreased bearing pressure. Repairs, replacement, or reinstatement must be accomplished before workers are allowed into the excavation or around the upper edges.
3. Shoring in loose unstable soil can be considerably greater than instable soil, due to the pressure exerted on shoring.
   a) Increased strut size and or decreased strut spacing is required.
   b) Very Loose soil will require closed sheeting with tight edge to edge contact.
   c) Wood or locking steel sheeting may be used when joints must be watertight.

H. Mandatory Shoring Protection

1. All workers working in a trench with a depth that exceeds 5 feet must be protected by a shoring system or shield.
2. The placement of shores must be accomplished prior to any worker entering the trench.
3. A registered professional engineer must design all shoring systems used in an excavation below 20 feet in depth.
4. In trenches or excavations where a hazardous condition may exist, the space must be treated as a permit required confined space and Section 7 of this manual must be followed.
5. All workers in the excavation or trench must be provided with Personal Protective Equipment as specified in this manual, OSHA and client standards.

I. Installation of Shoring System - All installation should be in a top down method.

1. Struts must be in a true horizontal position with the ends secured to prevent slippage or sliding.
2. The uppermost shores must be placed first.
3. If possible, the workers should not be in the trench when the shores are lowered.
4. To prevent slough off and greater risk of cave-in, the shoring work should follow the trenching and excavation work as closely as possible.

J. Removal of Shoring Systems should be in a bottom to up method. Hydraulic shoring, however, may be removed from above.

1. Workers removing shoring must remain in a protected zone.
2. Premature removal of shoring will expose workers to an unnecessary hazard.
3. Timer or steel jacks are usually removed while inside the trench.
4. Before removal, some force must replace the force exerted by the shores against the trench face. e.g., bottom and intermediate struts should not be removed until they have been effectively replaced by backfill.

K. Hazards Affecting Trench Safety

1. Weather conditions can affect the water content of the soil through excess water from rain or melting ice and snow. Water can liquefy firm soil and increase pressure on the shores.
2. Freezing of the ground and quick thaw can undermine a shoring system and cause failure.
3. Soils can change properties from exposure to the air. Air slaking can turn hard solid soil, to soft slippery soil.
4. Vibrations from machinery, roadways, railroad tracks, explosives, flares, etc. will cause increased loads on a shoring system and extra sheeting and shoring may be needed.
5. The location of the Spoil Bank may also affect the pressure on a shoring.
6. Spoil Piles should be kept no closer than 2 feet from the trench and distances increased when site conditions warrant.
7. The edges of all open trenches must be protected. Barricades must be erected to prevent accidental entry, and, if possible, bumpers should be provided to prevent equipment from falling into the excavation.
8. All tools, equipment, and supplies must be kept back from the excavation edge to prevent accidental slippage into the site.
9. Hydrocarbon vapors are heavier than air. In locations where hydrocarbon vapors may be present atmospheric monitoring and confined space procedure are required.
10. All welding and cutting torches must be shut down at the source when workers depart the excavation or trench.

L. Excavation Equipment

1. Excavation equipment must be operated by trained and qualified personnel only.
2. Workers in the excavation will not place themselves below a load being lifted overhead.
3. Equipment must be shut down when the operator dismounts the equipment.
4. Refueling of equipment must not take place in the immediate vicinity of the site.
5. A Qualified Signal Person must be in place when equipment operators cannot see the bottom of the excavation.

M. Daily Inspections of the Excavation and Shoring

1. Daily inspections of the excavation and shoring equipment shall be made by a competent person and documented.
2. Should an unsafe condition be discovered, work must stop immediately in the affected area and corrective action taken.

3. Inspections must also be accomplished after rainstorms, snowstorms, or any other occurrence that may alter the condition and hazard of the site. Employees must be protected from water accumulation, including the use of shields, and must be inspected by a competent person before work begins.

N. Competent Persons - The OSHA Standards require that the competent person must be capable of identifying existing and predictable hazards in the surroundings, or working conditions which are unsanitary, hazardous, or dangerous to employees, and have authorization to take prompt corrective measures to eliminate them and, if necessary, to stop the work. Schmid is responsible for the designation of a competent person at excavation sites. Schmid reserves the right to review the qualifications of any client or sub-contractor furnished competent person.

O. A competent person is required to:

1. Have a complete understanding of the applicable safety standards and any other data provided.
2. Assure the proper locations of underground installations or utilities, and that the proper utility companies have been contacted.
3. Conduct soil classification tests and reclassify soil after any condition changes.
4. Determine adequate protective systems (sloping, shoring, or shielding systems) for employee protection.
5. Conduct all air monitoring for potential hazardous atmospheres. Conduct daily and periodic inspections of excavations and trenches.
6. Approve design of structural ramps, if used.

P. Access and Egress - A means of access and egress (usually ladders) must be provided within 25 feet of every worker.

1. Ladders must be in good condition, extend 3 feet over the top of the trench and secured in such a manner as to prevent movement while in use.
2. Access and egress must be provided for all excavations in excess of 4 feet in depth.
3. Walkways, runways, and sidewalks must be kept clear of excavated material or other obstruction.
4. No sidewalk, ramp walkway, etc., shall be undermined unless properly shored.
5. All crossings and walkways shall be protected by a handrail/guardrail system.

2. **CLASSIFICATION OF SOIL AND ROCK DEPOSITS** - Each soil and rock deposit must be classified by a competent person as one of the following: Stable Rock, Type A, Type B, or Type C in accordance with the following definitions.

A. Definitions

1. Cemented Soil means a soil in which the particles are held together by a chemical agent, such as calcium carbonate, such that a hand size sample cannot be crushed into powder or individual soil particles by finger pressure.
2. Cohesive Soil means clay (fine grained soil), or soil with a high clay content, which has cohesive strength. Cohesive soil does not crumble, can be excavated with vertical side slopes, and is plastic when moist. Cohesive soil is hard to break up when dry, and exhibits

significant cohesion when submerged. Cohesive soil includes clayey silt, sandy clay, silty clay, clay, and organic clay.

3. Dry Soil means soil that does not exhibit visible signs of moisture content.

4. Fissured means a soil material that has a tendency to break along definite planes of fracture with little resistance, or a material that exhibits open cracks, such as tension cracks, in an exposed surface.

5. Granular Soil means gravel, sand or silt (coarse grained soil) with little or no clay content. Granular soil has no cohesive strength. Some moist granular soils exhibit apparent cohesion. Granular soil cannot be molded when moist and crumbles easily when dry.

6. Layered System means two or more distinctly different soil or rock types arranged in layers. Micaceous seams or weakened planes in rock or shale are considered layered.

7. Moist Soil means a condition in which a soil looks and feels damp. Moist cohesive soil can easily be shaped into a ball and rolled into small diameter threads before crumbling. Moist granular soil that contains some cohesive material will exhibit signs of cohesion between particles.

8. Plasticity means a property of a soil, which allows the soil to be deformed or molded without cracking or appreciable volume change.

9. Saturated Soil means a soil in which the voids are filled with water. Saturation does not require flow. Saturation, or near saturation, is necessary for the proper use of instruments such as a pocket penetrometer or sheer vane.

10. Soil Classification System means for the purpose of this subpart, a method of categorizing soil and rock deposits in a hierarchy of Stable Rock, Type A, Type B, and Type C, in decreasing order of stability. The categories are determined based on an analysis of the properties and performance characteristics of the deposits and the environmental conditions of exposure.

11. Stable Rock means natural solid mineral matter that can be excavated with vertical sides and remain intact while exposed.

12. Submerged Soil means soil, which is underwater or is free seeping

13. Type A Soil means:

a) Cohesive soils with an unconfined compressive strength of 1.5 ton per square foot (PSF) or greater. Examples of cohesive soils are: clay, silty clay, sandy clay, clay loam, and in some cases silty clay loam and sandy clay loam. Cemented soils such as caliche and hardpan are considered Type A. However, no soil is Type A if:

(1) The soil is fissured or,

(2) The soil is subject to vibration from heavy traffic, pile driving, or similar effects,

(3) The soil has been previously disturbed or,

(4) The soil is part of a sloped, layered system where the layers dip into the excavation on a slope of four horizontal to one vertical (4H:IV) or greater or,

(5) The material is subject to other factors that would require it to be classified as a less stable material.

14. Type B Soil means:

a) Cohesive soil with an unconfined compressive strength greater than 0.5 tons per square foot (PSF) or,

b) Granular cohesion less soils including: angular gravel similar to crushed rock) silt, silt loam, sandy loam, and in some cases silty clay loam and sandy clay loam,

c) Previously disturbed soils except those which would otherwise be classed as Type C soil

d) Soil that meets the unconfined compressive strength or cementation requirements for Type A, but is fissured or subject to vibration or,

e) Dry rock that is not stable or,

f) Material that is part of a sloped, layered system where the layers dip into the excavation on a slope less steep that four horizontal to one vertical (4H: IV), but only if the material would be otherwise classified Type B.

15. Type C Soil means:

a) Cohesive soil with an unconfined compressive strength or 0.5 per square foot (PSF) or less or,

b) Granular soils including gravel, sand, and loamy sand or,

c) Submerged soil or soil from which water is freely seeping or,

d) Submerged rock that is not stable or,

e) Material in a sloped, layered system where the layers dip into the excavation or a slope of four horizontal to one vertical (4H:IV) or steeper.

16. Unconfined Compressive Strength means the load per unit area at which a soil will fail in compression. It can be determined by laboratory testing, or estimated in the field using a pocket penetrometer, by thumb penetration tests or other methods.

17. Wet Soil means soil that contains significantly more moisture than moist soil, but in such a range of values that cohesive material will slump or begin to flow when vibrated. Granular material that would exhibit cohesive properties when moist will lose those cohesive properties when wet.

18. The visual and manual analysis, such as those noted as being acceptable, shall be designed and conducted to provide sufficient quantitative and qualitative information as may be necessary to identify properly the properties, factors and conditions affecting the classification of the deposits.

B. Layered System - In a layered system, the system shall be classified in accordance with its weakest layer.

C. Reclassification - If after classifying a deposit, the properties, factors or conditions affecting its classification change in any way, the changes shall be evaluated by a competent person. The deposit shall be reclassified as necessary to reflect the changed circumstances.

3. ACCEPTABLE VISUAL AND MANUAL TESTS

A. Visual Test - Visual analysis is conducted to determine information regarding the excavation site in general, the soil adjacent to the excavation, the soil forming the sides of the open excavation, and the soil taken as samples from the excavated material.

1. Check samples of soil that are excavated and soil in the sides of the excavation. Estimate the range of particle sizes. Soil that is primarily composed of fine-grained material is cohesive material. Soil composed primarily of coarse-grained sand or gravel is granular material.

2. Observe soil as it is excavated. Soil that remains in clumps when excavated is cohesive. Soil that breaks up easily and does not stay in clumps is granular.

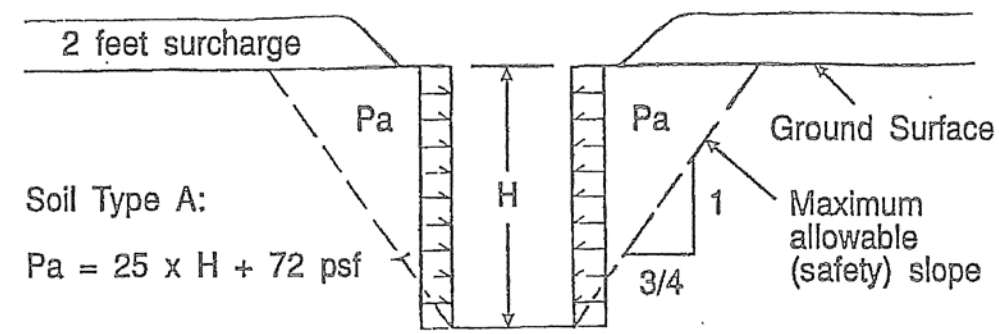
3. Observe the side of the opened excavation and the surface area adjacent to the excavation. Crack-like openings such as tension cracks could indicate fissured material. If

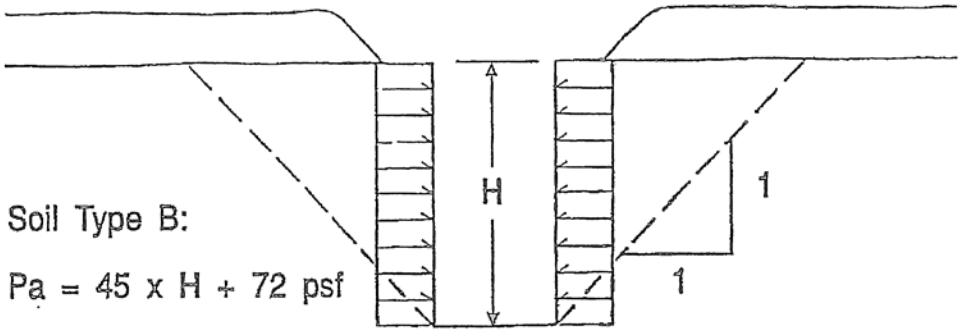
chunks of soil fall off a vertical side, the soil could be fissured. Small falls are evidence of moving ground and are indications of potentially hazardous situations.

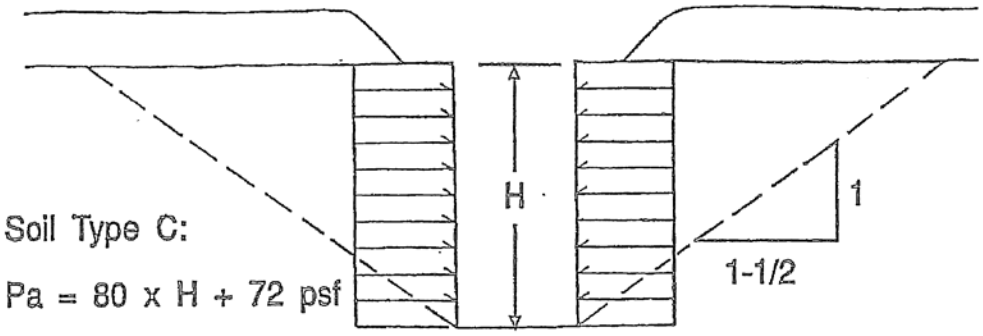
4. Observe the area adjacent to the excavation and the excavation itself for evidence of existing utility and other underground structures, and to identify previously disturbed soil.
5. Observe the opened side of the excavation to identify layered systems.
6. Examine layered systems to identify if the layers slope toward the excavation. Estimate the degree of slope of the layers
7. Observe the area adjacent to the excavation and the sides of the opened excavation for evidence of surface water, water seeping from the sides of the excavation, or the location of the level of the water table.
8. Observe the area adjacent to the excavation and the area within the excavation for sources of vibration that may affect the stability of the excavation face.

B. Manual Tests - Manual analysis of soil samples is conducted to determine the quantitative as well as qualitative properties of soil and to provide more information in order to classify soil properly.

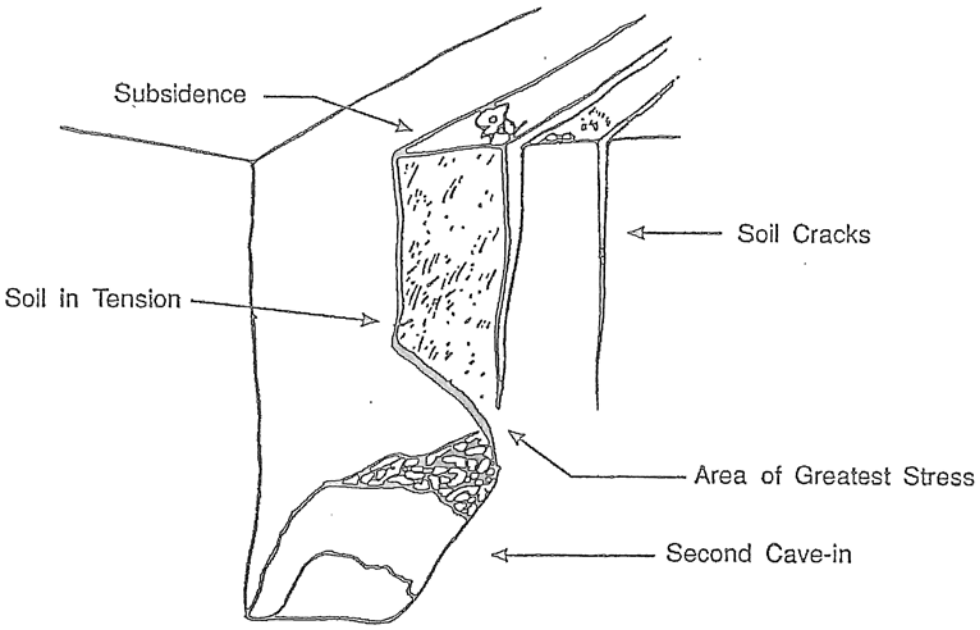
1. Plasticity - Mold a moist or wet sample of soil into a ball and attempt to roll it into threads as thin as 1/8 inch in diameter. Cohesive material can be successfully rolled into threads without crumbling. For example, if at least a 2 inch (50mm) length of 1/8 inch thread can be held on one end without tearing the soil is cohesive.
2. Dry Strength - If the soil is dry and crumbles on its own or with moderate pressure into individual grains or fine powder, it is granular (any combination or gravel, sand, or silt). If the soil is dry and falls into clumps that break up into smaller clumps, but the smaller clumps can only be broken up with difficulty, it may be clay in any combination with gravel, sand, or silt. If the dry soil breaks into clumps which do not break up into small clumps and which can only be broken with difficulty and there is no visual indication the soil is fissured the soil may be considered un-fissured.
3. Thumb Penetration - The thumb penetration test can be used to estimate the unconfined compressive strength of cohesive soils. Type A soils with an unconfined compressive strength of 1.5 PSF can be readily indented by the thumb; however, only with very great effort. Type C soils with an unconfined compressive strength of 0.5 PSF can be easily penetrated several inches by the thumb and can be molded by light finger pressure. This test should be conducted on undisturbed soil sample, such as a large clump of spoil, as soon as practical after excavation to keep to a minimum the effects of drying.
4. Other Strength Tests - Estimates of unconfined compressive strength of soils can also be obtained by use of a pocket penetrometer or by using a hand operated shear vane.

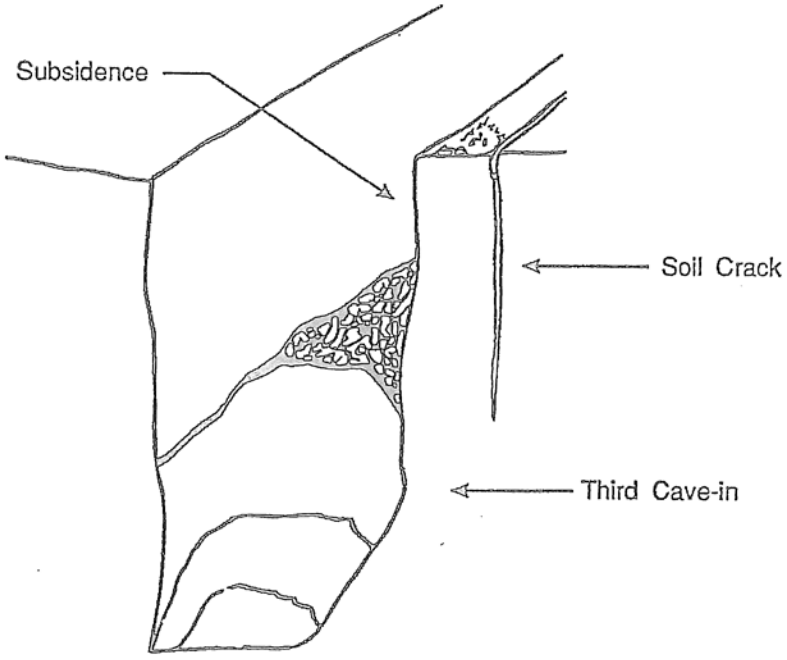


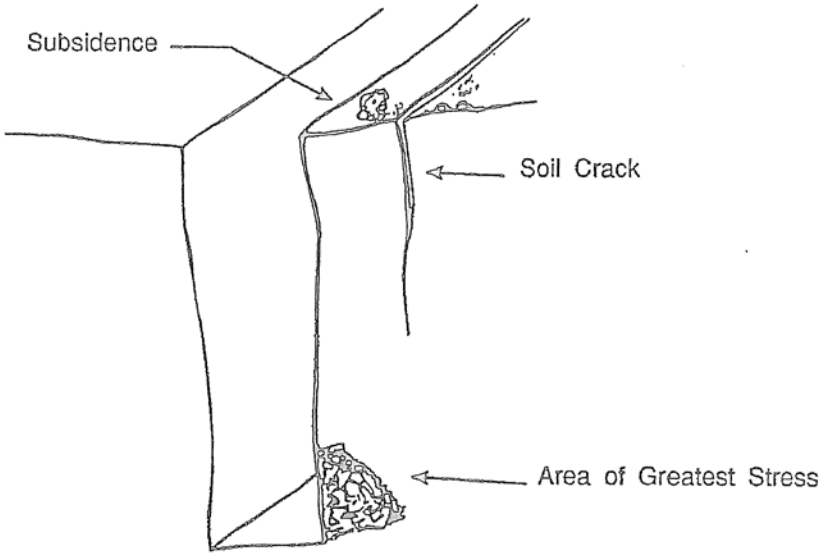


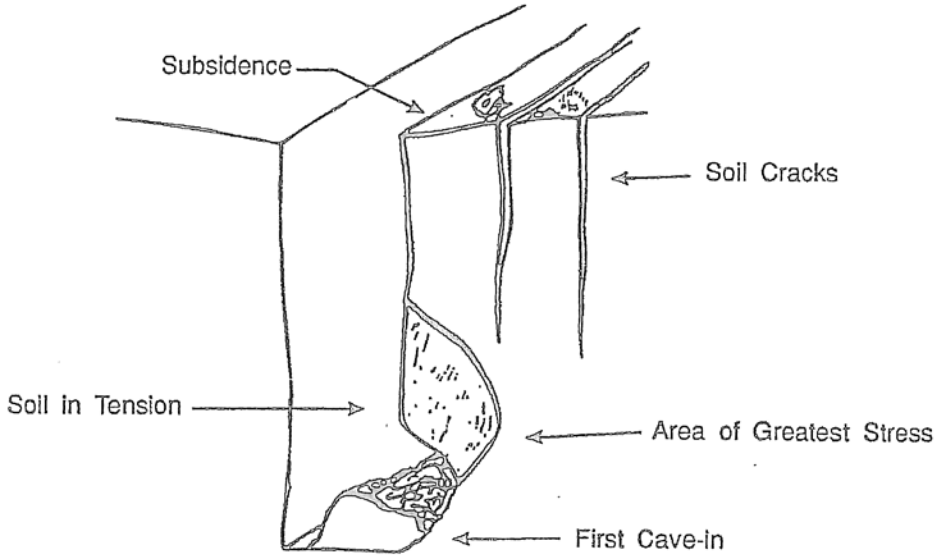


H = Total depth of excavation ≤ 20 feet

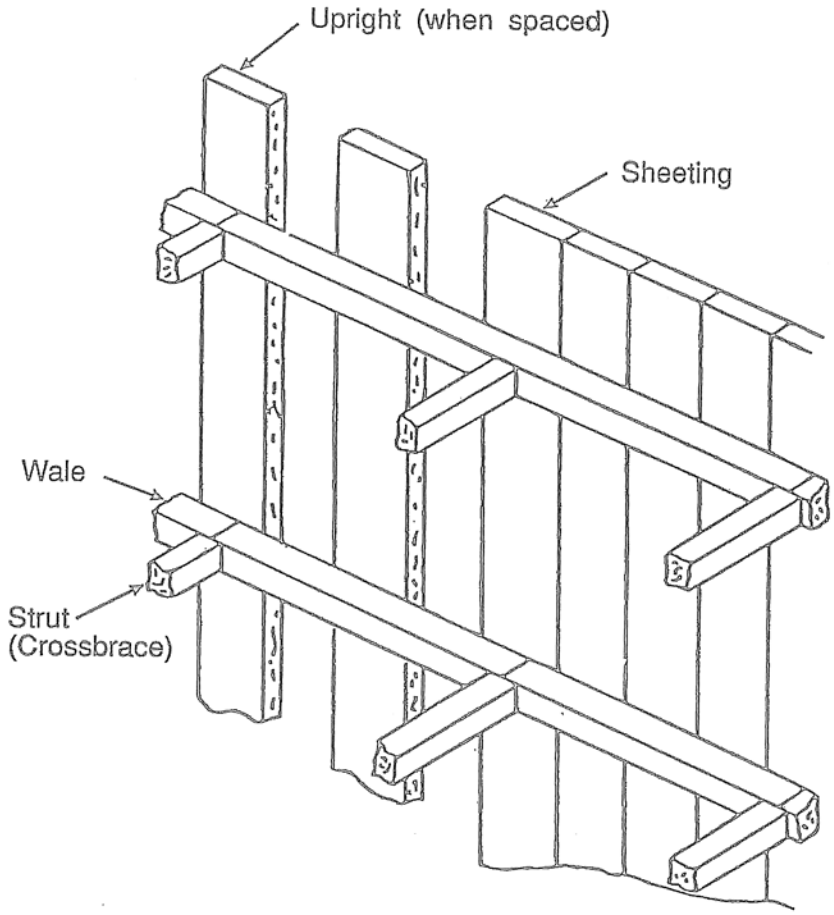

Subsidence
Soil Cracks
Soil in Tension
Area of Greatest Stress
Second Cave-in


Subsidence
Soil Crack
Third Cave-in


Subsidence
Soil Crack
Area of Greatest Stress

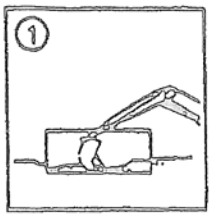

Subsidence
Soil Cracks
Soil in Tension
Area of Greatest Stress
First Cave-in

Components of Shoring Systems

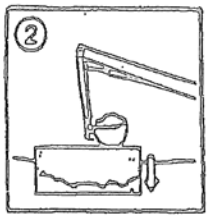


Shield Installation and Movement

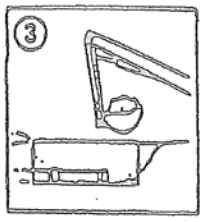
By excavating inside the shield in Type B and Type C soils, contractors are able to greatly reduce the amount of soil removed. This technique is also used on narrow street work as it helps to minimize environmental damage and restoration costs.



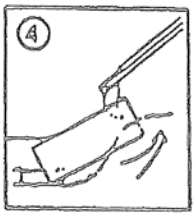
Place the shield in-line and dig from within



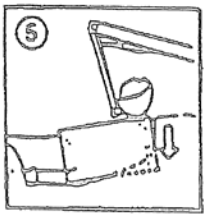
. . . tamping the shield down after each bucketful



When the shield attains grade, install pipe.



Then, pull the shield forward and up approximately 45 degrees.

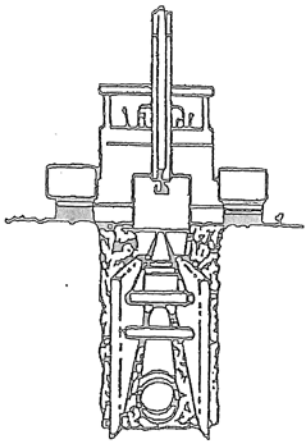


. . . and continue excavating inside, tamping the front of the shield again to grade for setting the next length of pipe.

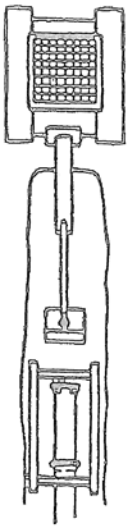
As you continue this process, backfilling can proceed at the rear.

Shield Installation and Movement

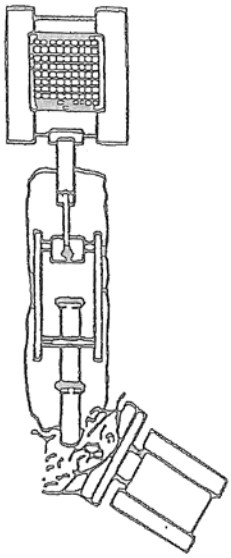
In Type A soil (when the trench walls hold) most contractors prefer to excavate ahead of the trench shield, beginning with an open cut to pipe grade level, then . . .



. . . lowering the shield into the trench for installing pipe . . .



. . . excavating ahead of the shield for the next length of pipe



. . . and pulling the shield forward into the new excavation while backfilling at the rear.

Excavation Safety Inspection Checklist

Note: Inspections of excavation and protective systems by the competent person are required as follows: daily before entry, after a rainstorm or other events such as snowstorm, windstorm, thaw, earthquake or any dramatic changes in the weather; whenever fissures, tension cracks, sloughing, undercutting, water seepage, bulging at the bottom or other similar conditions exist; whenever these is a change in size, location or placement of the spoil pile and/or whenever there is an indication of a change or movement in adjacent structures.

Inspection Date:_____ Job #: _____ Pipeline Operator/Owner: _____

Excavation Location:_____

Depth:_____ Feet Soil Type: ☐ Stable Rock ☐ Class A ☐ Class B ☐ Class C

Inspection Completed: ☐ Visual ☐ Manual ☐ Penetrometer Reading: _____

Slope Ration (H:V) ☐ Stable Rock = 90°, ☐ Class A = ¾:1 (53°), ☐ Class B = 1:1 (45°), ☐ Class C = 1 ½:1 (34°)

Has the area been checked for foreign pipelines, cables or obstructions? ☐ Yes ☐ No

Have all ONE CALLS been made and all affected pipeline operators / companies been contacted? ☐ Yes ☐ No

Trench Shields: Certification Papers on Site? ☐ Yes ☐ No ☐ N/A Box Serial Number:_____

Multi Shield: ☐ Yes ☐ No Stacked: ☐ Yes ☐ No Additional Box Serial Number: _____

Shoring: ☐ Timber ☐ Sheet piling ☐ Hydraulic ☐ Engineering data on hand ☐ N/A

Backfill of trench shield provides at least 18" of freeboard from top of box to backfill: ☐ Yes ☐ No ☐ N/A

Trench Box free from visible defects: ☐ Yes ☐ No ☐ N/A

Spoil piles at least 2 feet back from edge of excavation: ☐ Yes ☐ No

Is spoil pile sloped away from excavation at same angle as the excavation: ☐ Yes ☐ No

Ladders in place and secured: ☐ Yes ☐ No Ladders extended at least 3 feet above grade: ☐ Yes ☐ No

Ladders or ramps located within 25 feet of were personnel are working: ☐ Yes ☐ No

Are barricades, stop logs, etc. if needed, properly placed: ☐ Yes ☐ No ☐ N/A

Are trench walls free from:

☐ Water seepage/accumulation ☐ Shrinkage cracks ☐ Caving off or sloughing ☐ Significant fracture planes

Atmospheric Testing: ☐ No ☐ Yes O2: _____ LEL: _____ CO: _____ H2S: _____

Traffic Control In Place: ☐ Yes ☐ No ☐ N/A

Competent Person Signature: _____

(White) Field Office (Yellow) Client (Pink) Excavation Competent Person

SECTION 14

SCAFFOLDS

1. SCAFFOLDS

A. OSHA References - 29 CFR 1926 Subpart L 450-454

B. General - This section outlines the basic construction guidelines for the erection or scaffolding above ground. It is not possible to cover every type of scaffold listed in the above referenced OSHA Standard. Reference to that standard must be made for more specific information. All scaffold design, construction, and use must be in accordance with the OSHA Standard.

C. Scaffold Construction - Design, construction, and modification of constructed scaffold will be accomplished by qualified persons only. Unqualified persons are not permitted to make changes or alterations to any scaffolding. Alteration of structural members, cross bracing, etc. and changes in designed scaffold construction will not be permitted. Personnel who make unauthorized modifications to scaffolding will be subject to disciplinary actions as outline in section 0 (Red Flag Policy).

D. Inspection - A qualified, competent person will conduct inspection of structural members of scaffold, i.e. tube and coupler or welded frame scaffold, on an annual basis. Additionally, all parts, used in scaffold construction will be inspected during the construction phase for obvious signs of damage and corrosion. Damaged and corroded parts will be made nonfunctional and immediately removed from the work site. Employees assigned to work on the scaffold will conduct daily inspections using the Schmid scaffolding inspection form, at the beginning and end of the workday. All defects, damage or unsafe conditions will be reported immediately and the scaffold will be tagged as unsafe (See example of tag at the end of this section) and roped off to prevent use until repairs have been made.

E. Training - The instructor shall be qualified and adequately trained in the proper use and safety procedures for scaffolding and shall be responsible for training all potential users during the new employee orientation and prior to use. In the event a new scaffolding system is employed, additional training on this system will commence immediately or employees will be retrained when conditions change. Training for all affected employees will include at a minimum:

1. The company scaffold program requirements
2. Identification and elimination of fall hazards on the job site
3. Safe work in hazardous areas
4. Hazards associated with working near fall hazards
5. Selection, use, care and inspection of scaffold equipment
6. Address electric hazards
7. Identification of potential falling objects
8. Load capacity

F. Dismantling - Scaffold will be dismantled as soon as the job is completed.

G. Fall Protection - A designated competent person will determine the feasibility and safety of providing fall protection for employees erecting and/or dismantling scaffolding. For a detailed description of fall protection requirements see OSHA 29 CFR 1926.451(g).

1. Scaffolds, six feet and higher, must be equipped with handrails, mid rails, toe boards, and an access ladder or stairway.

2. All handrails shall be a lumber size of 2 inches x 4 inches in dimension. The top of the handrail shall be 42 inches +/- 3 inches above the platform, which they are constructed on.

3. All mid rails shall be of an undressed lumber size of 2 inches x 4 inches in dimension. The mid rail shall be centered between the top rail and the working platform.

4. Individuals working on scaffolds without hand rails or mid rails installed are required to wear fall protection above the working height of 10 feet.

H. General Construction Guide Lines

1. All scaffolds must be constructed to support four times the anticipated maximum weight or load.

2. Drawings and specifications, supplied and stamped by a professional engineer are required for scaffolding higher than 60 feet.

3. All scaffolding components, wood and metal are to be inspected prior to use.

4. Lumber used to construct a scaffold, and subject to stress, must be straight grained, free of loose or dead knots, and/or other defects, which might impair its strength or durability.

5. All welded tubular metal frames are to be checked for cracked welds, rust, and deterioration. All cross braces, alignment pins, screw jacks, wheels, handrails and base plates must be inspected for signs of deterioration.

6. Scaffolding constructed on a sound concrete surface must have a base plate or scaffolding foot at each vertical member.

7. All sections of tube and coupler scaffold must be locked together to prevent uplift.

8. When a scaffold is to be constructed on a surface other than concrete, the area shall be graded as level as possible. The scaffold shall be constructed to rest on a mudsill that will be perpendicular to a cross brace, or the shorter distance between two vertical post. The footing and the mudsill shall be sound, rigid, and capable of carrying the full load without settlement or movement in any direction.

9. All platform decking must be 2 inches x 10 inches undressed lumber, full thickness and shall overhang not less than 6 inches and not more than 12 inches. Scaffold planks shall be battened together and secured with No. 9 wire and or a wooden cleat with no protruding nails. Scaffold platforms shall be tightly planked for the full width of the scaffold.

10. All planking used for platform decking shall be an approved Western White Spruce, or equal construction grade.

11. Where planking is lapped, each plank shall lap its end support by 12 inches at a minimum. The end or edge of all planks shall be uniform in length, not staggered.

12. Scaffold frames and/or benches must not be placed greater than eight feet on center in a horizontal direction parallel with the cross bracing. This tubular scaffold, with 2 inches undressed scaffold planking will yield a working load of 50 pounds per square foot (PSF).

13. Access Stairways for scaffolds shall have all required railings and platforms that would normally be provided on a typical stairway.

14. Scaffolds shall be secured to a building and/or structure at 24 foot vertical intervals when the height of the scaffold exceeds four times the minimum base dimension above ground. In the horizontal direction, a scaffold shall be secured to a building and/or structure at a maximum of 30 foot intervals.

15. Precautions must be provided to protect employees from entering or exiting an access ladder or stairway from vehicular and or construction traffic.

16. Scaffolding must be protected from vehicular and/or construction vehicle traffic.
17. When working on more than one level of a scaffold at the same time, each level above the working platform must be completely planked to protect the working platform.
18. Area below the scaffold should be warning taped to prevent accidental entry below the work area.
19. Pedestrian traffic and/or a walkway area, adjacent to a scaffold shall be protected by installing a 1/2 inch wire mesh at each working platform. The mesh will be placed between the handrails and secured to the toe board.
20. Open flame burning and or welding will not be permitted on a scaffold unless provisions are made to protect against the risk of fire on the scaffold or scaffolding material and the immediate area. Should burning or welding be required, the following procedures must be followed:
    a) All four sides of the scaffold and the planking around the immediate working area will be covered with a fire resistant blanket.
    b) Proper ventilation must be provided for the working area.
    c) A fire watch will be provided.
21. Platforms that are covered or partially covered with snow, ice, water, oil, or other slippery material will not be used until the material is cleared. The distribution of rock salt to melt snow or ice is not acceptable as it can corrode the scaffolding and creates a slipping hazard by itself.
22. Items such as valves, piping, blind flanges, etc., weighing over 150 pounds will not be stored on the scaffolding platform.
23. Airlines, welding lines, tag lines, etc., will not be tied off to the scaffold.
24. Scaffold frame members will not be used for the purpose of rigging or hoisting. The installation of an approved hoisting device is required.
25. Tools, materials, and equipment will not be thrown off of the scaffold or dropped to ground level. The clearance between scaffolds and power lines shall be as stated in OSHA 29 CFR 1926.451(f)(6).
26. In addition to wearing hardhats each employee on a scaffold shall be provided with additional protection from falling hand tools, debris, and other small objects through the installation of toe boards, screens, or guardrail systems, or canopy structures that contain or deflect the falling objects. OSHA 29 CFR 1926.451(h).

I. Aerial Lifts
1. Extensible and Articulating Boom Platforms
    a) Lift controls must be tested each day prior to use to determine that such controls are in safe working condition.
    b) Only authorized trained persons will be permitted to operate an aerial lift.
    c) Belting off to adjacent pole, structure, or equipment while working from an aerial lift will not be permitted.
    d) All employees will always stand firmly on the floor of the basket and will not be permitted to sit or climb on the edge of the basket or use planks, ladders or other devices for a work position.
    e) A Full Body Harness must be worn and a lanyard attached to the basket when working from an aerial lift using the manufacturer's attachment point.
    f) Boom basket load limits specified by the manufacturer will not be exceeded.

g) An aerial truck must not be moved when the boom is elevated in a working position with men in the basket, except for equipment that is specifically designed for this type of operation.

h) Articulating boom and extensible boom platforms primarily designed, as personnel carriers must have both platform and lower controls.

i) Climbers must not be worn while performing work from an aerial lift.

j) The insulating portion of an aerial lift must not be altered in any manner that might reduce its insulating value.

k) All lifts shall be designed and constructed in accordance with ANSI requirements for “Vehicle Mounted Elevating and Rotating Work Platforms”.

l) All modifications to lifts must be certified in writing by the manufacture.

m) The lift shall be equipped with a backup alarm or be backed up by a spotter.

n) All aerial lifts will be kept a minimum of 10 feet from all electrical lines rated 50 kV or less.

J. Scaffolding users (persons working on or off of scaffolding) shall be trained on the following information:

1. Overhead Protection - When persons are working on the scaffold and an overhead hazard exists, overhead protection shall be provided to the user and shall be positioned not more than 9 feet above the working platform of the scaffold.

2. Snow and ice on the scaffold must be removed and the planking sanded before the scaffold is to be used.

3. Tools, materials, and debris shall not be allowed to accumulate so as to create a hazard on scaffold platforms.

4. Fall Protection is not required when employees are inspecting, investigating, or assessing workplace conditions prior to the start of work or after work is completed.

a) Floor openings, including openings in the scaffold planking 6 feet or more above the ground or floor shall be protected with a guardrail or safety net system. Personal Fall Arrest can be used as an alternative or in combination. For safety net requirements please see the definition section of this policy.

b) Dangerous equipment located below or in close proximity to a scaffolding system shall be protected or guardrails shall be installed at the opening.

c) Building Side Scaffolds Guardrails which are not required on the building side of a scaffold when the platform is less than 16 inches from the building itself.

d) Controlled Access Zone (CAZ) - In areas where fall protection is not feasible or in areas where scaffolds make the work more dangerous (i.e. bricklaying), when reaching less than or equal to 10 inches below the working surface, the CAZ line prevents non-overhand bricklayers from inadvertently entering the area immediately adjacent to the fall hazard. The CAZ designates the area where overhand bricklaying may be performed without the use of guardrails, safety nets, or personal fall arrest systems as fall protection.

(1) If the overhand bricklayers must reach more than 10 inches below the working scaffold surface, a guardrail, safety net, or other type of fall protection system must protect the bricklayer.

e) Safety Nets If safety nets are selected as a means of fall protection, they shall be installed directly beneath the walk or working surfaces but shall not be greater than 30 feet below said walking or working area of the scaffold.

(1) Area requirements for safety nets are outlined in the definition section.

(2) The nets shall be installed so as to provide sufficient clearance beneath them to prevent contact with a surface or structure below if a fall occurs.

f) Personal Fall Arrest Systems Anchorage devices, connectors, or body harnesses, which may include a lanyard, deceleration device, lifeline, or suitable combination of these. The personal fall arrest system:

(1) Shall be inspected prior to use.

(2) Shall not be attached to a guardrail system.

(3) Shall not be attached to hoisting equipment unless the system prevents the employee from walking off the work surface.

g) Positioning Devices - Devices that shall prohibit an employee from free-falling more than 2 feet.

h) Worker Safety - A safety harness attached to a lifeline shall protect each worker. The lifeline shall be securely attached to substantial members of the structure, not the scaffold, or to closely rigged lines, which will safely suspend the worker in case of a fall.

i) Training - The Scaffolding users will receive the following additional training: Hazards (falls, electrical, and falling objects) fall protection, use, and load capacity.

SCAFFOLD ACCEPTANCE TAG

ACCEPTED / NOT ACCEPTED	
Complete Platform	Sound, Level Flooring
Guardrails	Barricaded
Toeboards	Framing Complete
Access Ladder	
Comments:	
Signature:	
Date:	

SECTION 15

LADDERS

1. LADDERS

A. OSHA References - 29 CFR 1926.1053

B. General - Falls are the second leading cause of all accidents following motor vehicle accidents. At age 77 and over, falls are the leading cause of accidents. Annually, more than 30,000 people are disabled by falls from ladders. Providing properly designed and well-maintained ladders, providing training for workers in ladder safety, and routinely inspecting ladders, can prevent most of these accidents from occurring on-the-job. The major causes of falls from self-supported ladders are lack of stability and sliding. This section cannot possibly cover all types of ladders and all aspects of ladder safety encountered within the construction industry, therefore for additional information, you are referred to the above referenced OSHA standard.

C. Handling and Storage

1. Ladders must be handled with care and not subjected to misuse during loading, transporting, erection, use, or dismantling.
2. All ladders must be stored in a vertical or horizontal position. If stored vertically the ladder will be secured with a chain or rope and fastened to a fixed structure to prevent accidental tipping. Ladders stored on a horizontal rack must be supported on a minimum of two brackets and in a manner that will prevent bowing or sagging of the side rails.
3. Ladders stored or used outside must be protected from inclement weather, heat, dampness, and/or exposure to chemicals.
4. Ladders shall be used for their intended purpose. Ladders must not be used as a workbench, a horizontal walkway, platform, or horizontal support for planking. The use of a ladder for other than ascending or descending is prohibited.
5. Ladders must be kept clean and free from any slippery substance at all times.

D. Inspection - All ladders require inspection prior to use and annually to insure condition. The ladder will be numbered and coded and the date of the inspection recorded. Damaged ladders will be taken out of service.

1. Ladders with out-of-date inspections will be returned to the Schmid shop for inspection.
2. Ladders must be inspected for the following:
   a) Loose, cracked, broken, or missing pivot pins, hinges, or threaded bolts.
   b) Side rails, ladder rungs, and steps for corrosion, rotting, splits, weather effects.
   c) Loose, missing, worn, or damaged ladder safety shoes.
   d) Moveable and non-slip rubber safety shoes.
   e) Missing and or loose extension locks, which do not seat properly when the ladder is extended.
   f) Proper rope and pulley functional with no rope deterioration.
   g) All hinge spreaders on a stepladder must be properly bolted and not bent.
   h) Unsafe ladders will be tagged as unsafe and removed or destroyed immediately.

E. General Ladder Safety

1. Ladders must be rated for a minimum working weight of 250 pounds. The combined weight of the user and tools must not exceed the rating.
2. The ladder feet must be covered with a slip resistant material and free of oil.
3. The user must select the right ladder for the task.
4. Ladder users must avoid sudden shifts in body position and lack of attention.
5. The user must use climb and descend the ladder facing the ladder.
6. Only one person may be allowed to work from the ladder.
7. The ladder must be positioned on a stable surface.
8. The ladder must be positioned close to work.
9. The user must avoid reaching out too far.
10. Non-conductive ladders must be used when working near electrical transmission equipment.
11. Fall protection of harness and shock absorbing lanyard must be used above 6 feet.
12. Wooden ladders must not be painted.
13. Ladders must not be walked or jogged when standing on them.
14. Materials and tools must not be stored on ladders.
15. Ladders must not be placed where they can block or obstruct or be struck by doors.
16. The users must climb and work from the ladder with the body near the middle of the rung or step.
17. Materials, tools, and equipment should not be carried up or down the ladder. They should be raised and lowered by rope.
18. Ladders must extend at least 36 inches above the upper landing surface.
19. Ladder rungs, cleats, and steps shall be parallel, level, and uniformly spaced, when the ladder is in position for use.
20. Ladders shall be used only for the purpose for which they were designed.

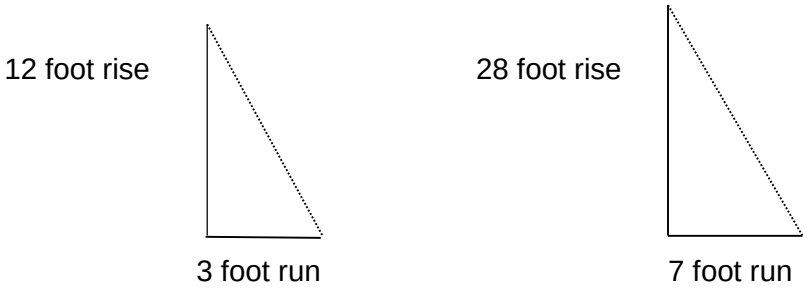
F. Stepladders

1. Stepladders must not be longer than 20 feet.
2. The minimum clearance width between the side rails at the top step must be 20 inches.
3. Minimum width of the step must be 3 inches.
4. The bucket shelf must be capable of being folded.
5. The metal spreaders must have sufficient strength to hold the ladder sections open.
6. The spacing between steps must be no greater than 12 inches.
7. Steps must be corrugated, serrated, knurled, dimpled, or coated with a skid resistant material.
8. The ladder must be fully open.
9. The top step must never be used.
10. Spreaders must be open, locked, and all feet contacting a firm surface.
11. Fall protection of harness and shock absorbing lanyard must be used above 6 feet.

G. Single Section and Extension Ladders

1. Extension and or single section ladders must not be rested or leaned against any unstable backing, such as boxes, drums, barrels, or any round objects.

2. Extension or single section ladders must be secured at the top with 3/8 inch or greater manila rope. The ladder will be held at the base while being secured.
3. It is prohibited to splice, tie, join, or fasten ladders together to form a longer section.
4. The pitch of the ladder shall be no less than 1/4 of the rise. (I.e. 12 feet rise = 3 feet run).



Note: The rise is determined by measuring the distance from the base of the structure to the point where the ladder is resting. The run is determined by measuring from the base of the structure, horizontally to the base of the ladder.

5. Never work from the top three rungs of an extension or single section ladder.
6. Safety harness and shock absorbing lanyards are required above 6 feet.

H. Fixed Ladders

1. Must be designed to withstand a single concentrated load of at least 200 pounds.
2. Rungs for metal ladders must have a diameter of 3/4 inches.
3. Rungs at least 16 inch width and be spaced no more than 12 inches apart.
4. Metal ladders must be painted or treated to resist weather and chemical corrosion.
5. The preferred pitch is 75-90 degrees.
6. Unless protected by a cage must have 15 inch clear width on every side of the centerline of the ladder.
7. Rungs of individual rung ladders must have a design to prevent the foot from sliding off the end of the rung.
8. The step across distance from the ladder to the platform or structure may not be more than 12 inches or less than 2 and 1/2 inches.
9. Cages or wells must be provided for ladders more than 20 feet to a maximum unbroken length of 30 feet high.
10. The cage must extend at least 42 inches above the top landing and down to not less than 7 feet or more than 8 feet above the base of the ladder.
11. A landing platform is provided for each 30 feet of height with cages and every 20 feet without cages, wells or safety devices.

SECTION 16

ASBESTOS WORK PROVISIONS

1. ASBESTOS WORK PROVISIONS

A. OSHA References - 29 CFR 1910.1001

B. Application - This policy shall apply to all contractors and their subcontractors working with Asbestos Containing Material (ACM) at company project sites. ACM is defined as any material containing greater than 1 percent asbestos. These requirements shall be in addition to any requirements specified in the Site Safety Manual, Client Safety Manual, or Contractor Safety Manual.

Note: Any material suspected to be asbestos must be reported to the owner. The owner will then make a determination as to the asbestos content and make arrangements to have it removed if positive.

Examples of ACM include, but not limited to: heat-resistant clothing, automotive brake and clutch linings, and a variety of building materials including insulation, soundproofing, floor tiles, roofing felts, ceiling tiles, asbestos cement pipe and sheet, and fire resistant drywall. Asbestos is also present in pipe and boiler insulation materials, pipeline wrap and in sprayed-on materials located on beams, in crawlspaces and between walls.

C. Definitions - Asbestos includes chrysotile, amosite, crocidolite, tremolite asbestos, anthophyllite asbestos, actnolite asbestos, and any of these minerals that have been chemically treated and/or altered.

1. Surfacing materials are materials that are sprayed, troweled-on or otherwise applied to surfaces (such as acoustical plaster on ceilings and fireproofing materials on structural members, and other purposes).
2. Presumed asbestos containing material means thermal system insulation and surfacing material found in buildings constructed no later than 1980.

D. Scope - Regulated asbestos work includes but is not limited to the following:

1. Demolition or salvage of structures where ACM is present.
2. Removal or encapsulation of ACM.
3. Construction, alteration, repair, maintenance, or renovation of structures, substrates, or portions thereof that contains ACM.
4. Installation of ACM products.
5. Asbestos spill/emergency cleanup.
6. Transportation, disposal, storage, containment of, and housekeeping activities involving asbestos or products containing asbestos, on the site or location at which the construction activities are performed.

E. Regulations

1. All Federal, State, or Local Occupational Safety and Health Standards.
2. All Federal, State, or Local Environmental Regulations for air quality and disposal.
3. All Federal, State, or Local Transportation of Hazardous Waste Requirements.
4. All Federal, State, or Local Asbestos Worker licensing requirements.
5. All client specified Safety, Health, and Environmental Regulations.

F. Time Weighted Average

1. The employer shall ensure that no employee is exposed to an airborne concentration of asbestos in excess of 0.1 fiber per cubic centimeter of air as an 8 hour time-weighted average.

a) 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 exposure of each employee.

b) The employer is responsible for setting up initial monitoring for all employees who are exposed to airborne concentrations at or above the TWA permissible exposure limits.

c) Additional monitoring shall take place and a written program developed whenever there has been a change in the production, process, control equipment, personnel or work practices that may result in new or additional exposures above the TWA permissible exposure limit and/or excursion limit or when the employer has any reason to suspect that a change may result in new or additional exposure above the PEL.

d) All employees monitoring shall be in accordance with OSHA 29 CFR 1910.1001 Appendix A.

G. Documents Submission

1. The following documentation shall be provided prior to the award of contract for all asbestos contractors and lower tier subcontractors. These documents will be reviewed periodically, as required, and during the performance of work.

a) Contractor Qualification Questionnaire and associated documents.

b) Certificate of Insurance for General Liability, Auto and Workers Compensation with any applicable asbestos removal endorsements. Certificates must include Schmid and the client as additionally insured.

c) Designation of Competent Person responsible for daily supervision of asbestos work and documentation of qualification.

d) Safety Manual to include:

(1) Medically approved respiratory protection program with copy of medical certification.

(2) Site specific asbestos work practice and plan.

(3) Specific training program for asbestos workers.

(4) A copy of all citation issued for asbestos work or disposal violations for the past three years.

(5) A copy of the Contractor Substance Abuse Program and, if applicable, the DOT mandated Employee Drug Abuse Program and Employee Alcohol Misuse Prevention Plan.

e) Environmental monitoring firm and testing lab information to include:

(1) Name of selected Environmental Monitoring Firm

(2) Sampling Protocol

(3) Certificate of Qualification for Certified Industrial Hygienist of Industrial Hygienist conducting sampling

(4) Name of selected certified sampling testing facility

(5) Copy of current testing facility certifications

(6) Statement of guaranteed test result turn-around time for personal monitoring and perimeter monitoring

(7) A copy of testing facility sample protocol

2. The following documents will be provided post contract award and prior to beginning any work.

a) All Federal, State, or Local permits for work, removal, and/or disposal.

b) By name certification that all employees on site have completed substance abuse testing with negative results.

c) Written certification, by name and social security number, that all employees have completed medical evaluation and qualification for asbestos work and respiratory protective equipment use.

d) Written certification, by name and social security number, indicating the date and method used to determine qualification of employees for asbestos work.

e) Photocopies of current Federal, State, or Local asbestos worker licensing.

f) Approved Site Safety Plan and signed documentation of employee site safety orientation.

H. Provision of Medical Evaluation/Examination and Personal Protective Equipment

1. The contractor will provide, free of cost to employees, all required medical evaluations, examinations, and personal protective equipment.

I. Records Review and Retention

1. The following documents will be made available for review and/or inspection to any Federal, State, and/or Local regulatory agency; the Client Designated Representative; Schmid Designated Representative; contractor employees or designated employee, representative; subcontractors and their employees or designated employee representative.

a) All Industrial Hygiene and Environmental Monitoring Data.

b) All Manifests and Hazardous Waste Disposal Documents.

2. All records will be retained in accordance with Federal, State, and/or, Local regulation. In the event of conflicting retention time requirements, the longest duration specified shall be followed.

J. Regulated Areas

1. 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.

2. Only authorized persons shall be allowed to enter area.

K. Controls

1. It is the responsibility of the employer to institute engineering controls to bring employee exposure below the TWA.

2. Each employee entering a regulated area shall be furnished (at no cost) with but limited to and be required to use full face respirator with appropriate cartridges, Tyvek suit w/head covering, and gloves.

3. Employees will be prohibited from eating, drinking, or chewing tobacco in designated areas.

4. All hand operated and power operated tools which would produce or release fibers of asbestos shall be provided with local exhaust ventilation systems.

5. ACM shall be 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.

6. ACM shall not be removed from the designated area without being either wetted, or enclosed, or ventilated so as to prevent effectively the release of airborne fibers
7. Compressed air shall not be used in the removal of ACM
8. Shower facilities shall be provided for employees who work in areas above the TWA
9. No clothing wore in designated areas is to be brought off site to be laundered
10. Signs - Each regulated area must be posted with the following words:

DANGER ASBESTOS
CANCER AND LUNG DISEASE HAZARD
AUTHORIZED PERSONNEL ONLY
RESPIRATORS AND PROTECTIVE CLOTHING REQUIRED IN THIS AREA

Additionally, site specific requirements may require signage to include the asbestos containing material present, its location, and appropriate work practices which, if followed, will ensure that the ACM and or presumed ACM will not be disturbed.

11. Warning labels shall be placed on all debris and raw materials that are in or leave designated areas.
12. The training provided for all employees that work with ACM.
    a) Training shall be provided before initial assignment and at least annually.
    b) Training to be in accordance with OSHA 29 CFR 1910.1001(j)(7)(iii).
    c) Written Training Documents will be provided to all affected employees and will also be readily made available.
    d) Training Documents shall be retained by the company for all employees.
13. Employees will be made aware of the health effects of exposure to asbestos such as asbestosis, mesothelioma, lung cancer, and cancer of the stomach and colon.
14. When working on multi contractor worksites, the Schmid will ensure that their employees are protected from possible exposure utilizing this program. If a breach in the lead containment is found, exposed employees will be removed from the adjacent work area until the containment can be fixed and a proper exposure assessment is performed.

SECTION 17

LEAD ABATEMENT AND REMOVAL

1. LEAD REMOVAL AND/OR ABATEMENT

A. Scope - This policy applies to all situations where abatement, contact or removal of materials containing lead, are encountered. Lead containing materials may include, but are not limited to the following:

1. Paints and Coatings
2. Cements
3. Mortars
4. Solders
5. Tank Linings
6. Electrical Conduit
7. Sewer Line Sealant
8. Mastics
9. Roofing Material
10. Manufacturing and Occupational Lead Dust

Suspected or Confirmed Lead containing materials must not be disturbed unless this policy is in place and Authorization to Proceed has been received in writing.

B. Health Effects/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

C. Application - This policy applies to all Employees of Schmid Where Subcontractor Firms are hired to remove and/or abate lead, and their policy exceeds the requirements of this policy, OSHA and/or State requirements, the Subcontractor policy, upon approval by the Safety Director will be followed. Where the Client mandates their lead removal and/or abatement policy be followed, the Safety Director shall review the Client's policy for OSHA and/or State compliance before approving the use of the Client policy. Written approval by the Safety Director is required.

D. All affected employees are required to attend training: at time of hire, upon orientation, annually and before each assignment. The employees shall be informed of the specific nature of the operations which could result in exposure to lead above the action level, the purpose, proper selection, fitting, use, and limitation of respirators, engineering controls, purpose and a description of the medical surveillance program and the medical removal program. All documentation related to training shall be retained by the company.

E. It is the responsibility of the Project Manager, Project Supervisor and Safety Director to require and oversee compliance with the lead abatement/removal plan. Subcontractors are responsible to ensure employee compliance with the Project Specific Lead Abatement/Removal Plan, Client Safety and Health requirements, Federal, State and Local requirements. Employees must abide by any signs/labels/assessment reports indicating the presence of lead containing materials. Appropriate work practices should be followed to ensure the lead containing materials are not disturbed.

F. All lead removal and/or abatement projects must include a Project Specific Plan to be reviewed and approved by the Safety Director and President during the pre-bid review or prior to the onset of abatement/removal work. This Project Specific Plan must include, as a minimum, the following:

1. A job hazard analysis
2. The location of lead containing materials and anticipated quantity
3. Method of removal
4. Method of disposal
5. The approved bulk testing lab
6. The type, number and method of environmental monitoring
7. The type, number and method of personal monitoring
8. Method of containment and cleaning
9. A copy of the Subcontractor Lead Abatement Plan
10. Subcontractor employee training records
11. Subcontractor medical surveillance certifications and respiratory medical evaluations
12. Subcontractor Employee respiratory fit test certifications
13. List of equipment to be used for manual removal and cleaning
14. Copies of all Safety Data Sheets for Chemical Stripping Agents
15. State or Municipality requirements

G. The recordkeeping requirements for lead abatement, as established by OSHA are extensive. The employer must retain medical records and exposure monitoring data for the duration of employment plus 30 years, unless the duration of employment is less than 1 year. In that event, records must be given to the employee upon termination. If the employer ceases to do business, medical records must be transferred to the successor employer who will retain and maintain the medical records. If there is no successor employer, medical records will be transferred to the U.S. Secretary of Labor. State and municipality requirements will be addressed in project specific documents. All records outlined in this procedure will be immediately provided to the designated client representative, the Project Manager and Safety Director. Copies will be retained by the employer and accessible to the employees and employee representative. These records include, but are not limited to:

1. Lead Sample tracking logs
2. Analytical data supplied by approved labs
3. Lead free certifications provided by the client, manufacturer, installer, etc.
4. Employee training and certification records
5. Employee medical surveillance and testing records
6. All exposure assessments, including medical surveillance, medical removals, reports by industrial hygiene perimeter and personnel monitoring reports
7. Copies of licensing or permit forms issued by the State or municipalities
8. Job records, such as job logs, dairies, etc. pertaining to removal or abatement
9. Work permits provided by clients
10. Periodic Safety Inspections
11. Hazardous Waste disposal records

H. Initial Determination Procedure - The presence or absence of lead in materials will determine the need for the implementation of this section. Employer must ensure that no one is exposed to airborne Lead above the PEL.

I. Pre-work determination of lead containing materials - The presence or absence of lead may be pre-determined by several different methods. The following pre-work determinations may be used:

1. Pre-work samples analyzed by an accredited laboratory for determination of composition.
2. Written statements, such as Safety Data Sheets, technical data sheets, etc. prepared by the manufacturer and/or client may be used.
3. Testing results and certifications supplied by the manufacturer, installer, and client.
4. Portable X-ray Fluorescence (XRF) detection results.
5. Previous personal and environmental monitoring results obtained by the employer, client, and subcontractor.
6. All documents must be forwarded to the Safety Director and maintained on file in the field. Clients must also be provided with documentation.
7. Employees will be provided with the results of testing.
8. No employee should be exposed to lead at concentrations greater than fifty micrograms per cubic meter of air averaged over an 8 hour period.

J. No Pre-Work Lead Assessment Data - In the event that no pre-work lead assessment data is available, the lead content must be established.

1. An assumption of exposure to lead above the OSHA Permissible Exposure Limit (PEL) of 50ug/m3, and not exceeding 500ug/m3 is mandated by OSHA for the following tasks:
   a) Where lead containing coatings or paint are present: manual demolition of structures (e.g. dry wall), manual scraping, manual sanding, heat gun application, and power tool cleaning with dust collection systems.
   b) Spray painting with lead paint.
   c) Where the employee has any reason to believe that an employee is exposed to lead in excess of the PEL.
2. An assumption of exposure to lead above the OSHA Permissible Exposure Limit (PEL) and in excess of 500ug/m3 is mandated for:
   a) Using lead containing mortar; lead burning.
   b) Where lead containing coatings or paint are present: rivet busting; power tool cleaning without dust collection systems; cleanup activities where dry expendable abrasives are used; and abrasive blasting enclosure movement and removal.
3. An assumption of exposure to lead in excess of 50 times the PEL or in excess of 2500ug/m3 is mandated for the following:
   a) Abrasive blasting
   b) Welding
   c) Cutting
   d) Torch burning
   e) Grinding
4. Until an employee exposure assessment is performed and appropriately documented, the following interim protection is required at no expense to the employee:
   a) Respiratory protection as outlined in OSHA 29 CFR 1926.62.
   b) Gloves, hats, vented goggles, shoes or disposable shoe covers shall be provided. Protective clothing shall be cleaned and laundered at least weekly. Clothing shall also be properly disposed and repaired or replaced as necessary.

c) Personal Protective Clothing and Equipment is required as follows:

(1) Coveralls or similar full-body work clothing.

(2) Gloves, hats and shoes or disposable shoe covers.

(3) Face shields, vented goggles, or other appropriate protective equipment.

(4) Clothing will be supplied in a clean and dry condition weekly. Clothing will be provided on a daily basis for exposure levels over 200ug/mg3.

(5) Cleaning, laundering, and disposal of clothing will be provided.

(6) Repair and replacement of all Personal Protective Equipment to insure effectiveness shall be provided.

(7) Clothing must be removed at the completion of a work shift in a change area specifically provided for that purpose.

(8) Contaminated clothing will be placed in a closed container in the change area, which will prevent dispersion of lead outside the container.

(9) All persons involved in cleaning, laundering or disposal of contaminated clothing will be advised in writing of the hazards of lead exposure.

(10) All containers of contaminated clothing or equipment shall be labeled with the following statement: **Caution: Clothing contaminated with lead**. Do not remove dust by blowing or shaking. Dispose of contaminated wash water in accordance with applicable Local, State or Federal regulations.

(11) Shaking and/or blowing off dust particles are prohibited.

(12) Employees' hands and faces should be washed if lead containing materials are contacted.

5. Change areas are required.

a) Change areas will be equipped with separate storage facilities for protective work clothing and equipment for street clothes to prevent cross contamination.

b) Employees will not be allowed to depart the work area with any potentially contaminated clothing or equipment.

c) Hand washing facilities will be provided in accordance with OSHA 29 CFR 1926.51(f). If showers are not provided, all employees must wash their hand and face at the end of the workday, prior to leaving the work site.

6. Biological monitoring to consist of blood sampling and analysis for lead and zinc protoporphyrin levels are required every 6 months until two consecutive blood samples and analysis are acceptable. The sampling and monitoring should be performed at least monthly during the removal period. Any employee with elevated blood levels should be temporarily removed. Employees should be notified in writing within 5 days when lead levels are not acceptable. (The standard requires temporary medical removal with Medical Removal Benefits).

7. Training under OSHA 29 CFR 1926.62 (lead), OSHA 29 CFR 1926.59 (hazard communication), respiratory protection and fit testing and safety training in accordance with OSHA 29 CFR 1926.21, and OSHA 29 CFR 1910.1020 (access to employee records).

K. Sampling Procedure - If bulk sampling is required for positive identification, the following procedure must be followed:

1. The individual taking the samples must wear all required Personnel Protective Equipment, and dispose of contaminated equipment as follows:

a) Outer protective clothing (i.e. Tyvek suit).

b) Full Face Negative Pressure Respirator equipped with HEPA cartridges or Powered Air Purifying Respirator (PAPR).

c) All potentially contaminated clothing will be disposed placed in properly marked lead disposal bags.

d) All samples will be taken as far away from the breathing zone and body as possible.

2. Only the individuals necessary for taking the samples will be present.

3. The material shall be wetted with a light water mist to minimize the discharge of airborne particulate matter during sampling.

4. The material shall be carefully removed to insure a representative sample of all layers of the material.

5. The sample must be placed in a small, transportable container, clearly marked as to the content, location of the sample source, date and time of sample. Zip lock bags are acceptable for this purpose.

6. The sample container must be tightly sealed and prevented from accidental opening. The outer surface of the container should be wiped with a damp cloth to prevent contamination.

7. Any material dislodged during the sampling procedure must be cleaned immediately by use of a HEPA vacuum.

8. The sample identification number, location, date, and time of the sample will be logged on the Lead Sample Tracking Log and forwarded to the approved lab for analysis.

9. Results of all samples will be entered on the Lead Sample Tracking Log.

10. Copies of all testing logs will be provided to the client, one copy will be maintained in the field, and one copy will be provided to the Safety Director. In all cases, the employees will be advised of the sample results.

L. Positive Initial Determination - If a positive initial determination has been established which shows the possibility of any employee exposure at or above the action level, monitoring representative of the exposure for each employee in the workplace who is exposed to lead must be conducted.

1. If previous monitoring for lead exposure and the data obtained falls within the past 12 months during work operations conducted under workplace conditions closely resembling the processes, type of material, control methods, work practices, and environmental conditions used, earlier monitoring results may be used if the sampling and analytical methods meet the accuracy of confidence prescribed by OSHA 29 CFR 1926.62(d)(10).

2. The frequency of monitoring, for blood sampling, at or above the action level of 30ug/m3 but below the PEL of 50ug/m3, monitoring will be performed every 6 months. Six month monitoring must continue until a minimum of two consecutive measurements, taken at least 7 days apart show results below the action level.

3. If the initial determination discloses exposure results above the PEL of 50ug/m3, monitoring must be continued on a quarterly basis until a minimum of two consecutive measurements, taken at least 7 days apart showing results below the PEL but above the action level. In this event, the requirements of paragraph 6.2 shall be in force. If consecutive measurements taken at least 7 days apart show results under the action level, monitoring may be discontinued.

4. Schmid shall provide lunch room, hygiene, shower, and changing facilities when exposures are above the PEL.

5. Warning signs should be posted in the work area where the PEL is exceeded **Danger do not enter - Lead.**

M. Negative Initial Determination - If a determination conducted under OSHA 29 CFR 1926.62(d)(1), (d)(2) and (d)(3) has been made and displays that no employee is exposed to airborne concentrations of lead at or above the action level, a written record of the determination with all support documentation, including the date of determination, the exact location within the worksite, and the name and social security number of each employee monitored must be submitted and maintained.

1. Whenever there has been a change of equipment, process, control, personnel, or a new task is initiated that may result in additional employees being exposed to lead at or above the action level, or may result in employees already exposed at or above the action level being exposed above the PEL, additional monitoring must be accomplished.

N. Employee Notification - The employee must be notified within 15 working days after completion of the exposure assessment. Each employee must be notified in writing of the results that represent the employee's exposure.

O. Accuracy Of Measurements - The method of monitoring and analysis used must have an accuracy (to a confidence level of 95 percent) of not less than plus or minus 25 percent for airborne concentrations of lead equal to or greater than 30ug/m3.

P. Engineering Controls and work practices controls must be the main method of controlling airborne lead contamination. All feasible engineering practices must be utilized. Personnel protective equipment should be used to supplement engineering and work practice controls.

Q. Medical Surveillance - A medical surveillance program shall be instituted in accordance with OSHA 29 CFR 1926.62(j)(2) and (j)(3) for all employees who are or may be exposed by at or above the action level for more than 30 days in any consecutive 12 months.

1. All medical examinations and procedures shall be performed by or under the supervision of a licensed physician.

R. Compliance Programs - No lead removal and/or abatement work will be permitted to begin until a written compliance program has been developed, submitted, and reviewed by the Safety Director, President, and the designated client representative. Compliance programs will include, as a minimum:

1. A description of each activity that may emit lead, including the equipment used, material involved, controls in place, crew size, employee job responsibilities, and operating procedures and maintenance practices.
2. A description of the specific means that will be employed to achieve compliance to include engineering plans and studies used to determine methods selected for controlling exposure.
3. A report of the technology considered in meeting the PEL.
4. Air monitoring data that documents the source of the lead emissions.
5. Detailed schedule for implementation of the program, including documentation i.e., copies of purchase orders for equipment, contracts, and subcontracts, etc.
6. A work practice program including items required for protective clothing, housekeeping and hygiene facilities.
7. An administrative control schedule.

8. Method of informing all affected or potentially affected employees of the potential exposure to lead and the hazards associated with lead exposure.

9. Frequency of inspections of sites, materials, and equipment by a designated, competent person(s).

10. All affected employees, authorized employee representative will be provided with a copy of the compliance program upon request.

11. Plans will be maintained on the job site for review/inspection by the client representative, any governmental regulatory agency, employees and/or employee representatives.

12. Compliance programs will be reviewed at a minimum frequency of 6 months and will reflect the current status of the program.

S. Health Effects - All employees will be made aware of the effects of exposure to lead including the following:

1. Acute Exposure
   a) Loss of appetite
   b) Nausea and vomiting
   c) Stomach cramps
   d) Constipation
   e) Difficulty in sleeping
   f) Fatigue
   g) Moodiness
   h) Headache
   i) Joint or muscle aches
   j) Anemia
2. Chronic Exposure
   a) Severe damage to blood forming
   b) Severe damage to nervous, urinary, and reproductive systems

T. Multi Contractor Site - When working on multi contractor worksites, the Schmid will ensure that their employees are protected from possible exposure utilizing this program. If a breach in the lead containment is found, exposed employees will be removed from the adjacent work area until the containment can be fixed and a proper exposure assessment is performed.

SECTION 18

ENVIRONMENTAL

1. **GENERAL** - Compliance with Federal, State, Municipal, and Client Environmental Requirements are of critical concern to Schmid This part is, for the most part, advisory. Minimal environmental requirements for all company sites are established. Where Federal, State, Municipal and/or Client Requirements meet or exceed the Company Environmental Plans; the more extensive plans shall be followed.

2. **COMPLIANCE** - All company employees and their subcontractors will comply with established environmental requirements. Failure to comply may result in disciplinary action up to and including termination for the offending individual or company. Additionally, each individual must be aware that willful or negligent violation of Federal, State or Municipal Environmental Laws may result in criminal or civil citation to the individual and/or the employer.

3. **TRAINING** - Equipment operators, general laborers, supervisors and management, etc., must be trained prior to being allowed to participate in or supervise field activities. The training should cover the use of personal protective equipment. The training should also cover work practices which minimize hazardous risks and safe use of engineering controls and equipment.

4. **RESPONSIBILITY** - Project Managers must be aware of any potential hazardous materials that will be used or generated as part of the project. The Project Superintendent and Project Manager are responsible for development and implementation of a site environmental plan. Employers are responsible to ensure company and employee compliance with the plan.

5. **TRASH/RUBBISH DISPOSAL** - The Project Superintendent shall require compliance with local trash/rubbish disposal requirements such as separation of trash for the purpose of recycling. Hazardous materials, paint containers, etc. may not be permitted in normal trash or refuse.

6. **SOIL REMOVAL AND BACK FILL** - Subcontractors responsible for excavation, removal of soil or construction demolition debris, backfill, etc. shall ensure that all permits and conditions of Federal, State, Municipal and/or Client are met. Soil sampling may be required and many municipalities restrict the transportation of back fill from one area to another. Excavated soil that may be contaminated may require isolation, containment, sampling, and special methods of disposal.

7. **SOIL EROSION AND CONSERVATION** - An environmental survey of the area should be conducted to establish the location of wetlands, wildlife areas, streams, tributaries, watersheds, etc. Silt fencing, sediment-settling ponds, flocking ponds, etc. may be required to prevent soil from entering restricted areas.

8. **SOURCES OF ENVIRONMENTAL CONTAMINANTS** - The following is a partial listing of activities which may generate environmental contaminants:

A. Excavation work in oil refineries, chemical plants, construction sites, underground storage areas, airports, fuel storage areas, pharmaceutical plants, etc.

B. Rags used for wiping spills.

C. Absorbent materials used for drying certain spilled materials.

D. Construction material containers with residue.

E. Draining of contaminated equipment, i.e. hoses, lines, pumps, oil filled electrical switches, etc.

F. Tank, drum, vat, vessel cleaning, or residue removal.

G. Vehicle fuels, oils, transmission fluids, hydraulic fluids, etc.

H. Painting and cleaning solvents.

I. Sand blasting spoils.

J. Asbestos removal.

K. Lead abatement/removal.

L. Burning of stumps, brush or construction debris.

9. **RESOURCE CONSERVATION RECOVERY ACT (RCRA)** - The RCRA Act was enacted by the Federal Government to assure proper storage, transportation, and disposal of hazardous wastes. A hazardous waste is defined as having:

A. Characteristic Wastes
   1. A flash point of less than 140 degrees F.
   2. A pH of less than 2.0 and greater than 12.5.
   3. Reactive/unstable (reacts violently with water or generates toxic gases when mixed with water).
   4. Toxicity characteristic (TCLP) i.e. the leach ate of the waste contains certain heavy metals.

B. Listed Wastes from Non-Specific Sources
   1. Certain spent solvents.
   2. Certain electroplating sludge.
   3. Sludge and solutions from cyanide operations.
   4. Certain used oils, waste oils, oil sludge, and oil spill cleanup.

C. Listed Wastes from Specific Sources
   1. Miscellaneous sludge, residues and waste fractions from the manufacture of wood preservatives, organic chemicals, inorganic chemicals, pesticides, explosives, petroleum refining, leather tanning, inks, pharmaceuticals, paper production, and lead, zinc, iron, or steel refining.
   2. Acute hazardous wastes.
   3. Toxic hazardous wastes.
   4. Wastes containing certain hazardous constituent's insignificant amounts.

D. Hazardous wastes must be stored in the following manner:
   1. On an impervious surface.

2. For a period of not more than 90 days.
3. It must be labeled with the type of waste and the date the hazardous waste was first placed in the container.
4. All identification labels must be readily visible and legible.
5. All containers must be sealed and in good condition.
6. Waste must be segregated by type and incompatible wastes must be separated.
7. The storage area must be inspected daily and the inspection must be documented.

E. Shipment of Hazardous Wastes - Waste Manifests must accompany every shipment of hazardous waste. Copies of the Manifest must be sent. The purpose of the Manifest is to:
1. Track the waste movement from cradle to grave.
2. Specify the generator of the waste, the transporter and the disposal facility.
3. Identify each person handling the waste and completing a section of the manifest.

10. STORAGE AND USE OF HAZARDOUS MATERIALS AT COMPANY SITES

A. The following rules for the use and storage of hazardous materials at Company sites will be followed.

B. Fuel storage areas will be protected against damage from motor vehicles and other construction equipment by installation of bumpers, curbs, stops, or other devices.

C. Oils, chemicals, fuel tanks, and portable fuel dispensing containers will be stored in a containment device to prevent spillage or leakage to the ground.

D. Catch basins or other devices will be installed under equipment being refueled.

E. Piping or equipment containing hazardous materials will not be cleaned to the ground, soil, or allowed to run off to sewers or other estuaries.

F. Hazardous materials will be used in accordance with the manufacturer recommendations.

G. Safety Data Sheets for all hazardous materials will be provided to the Project Superintendent prior to bringing any hazardous material on site.

H. Hazardous materials transferred into containers other than the original manufacturer container will contain hazard and warning labels in accordance with the OSHA Hazard Communication Standard and manufacturers specifications. Under no circumstances will unlabeled containers be allowed.

I. Labels must be removed from empty containers that have been cleaned of hazardous residue or material.

11. **MEDICAL SURVEILLANCE** - All employees who are or may be exposed to hazardous substances or health hazards at or above the established permissible exposure limit, above the published exposure levels for these substances, without regard to the use of respirators, for 30 days or more a year shall be provided by Schmid at no cost to the employee medical monitoring.

12. **ENGINEERING CONTROLS** - Feasible engineering controls include the use of pressurized cabs or control booths on equipment, and/or the use of remotely operated material handling equipment. Engineering controls, work practices and PPE shall be used to reduce and maintain exposure limits.

A. Air monitoring shall be used by the supervisor to identify and qualify airborne levels of hazardous substances. The monitoring shall address initial entry, periodic monitoring, possible IDLH and wherever exposure may be a possibility.

13. **DECONTAMINATION PROCEDURES** - The supervisor shall be responsible to ensure all personnel are properly decontaminated and area is restricted from all unauthorized personnel. The supervisor shall modify decontamination procedures as needed.

A. Decontamination procedures shall be developed by the Supervisor that is specific for the site. The procedures shall be reviewed with the workers and walk through of the decontamination line with all workers prior to commencing work. All workers equipment, and personal protective equipment that entered the contaminated area must be properly decontaminated before exiting the area.

B. The decontamination area shall be established in an area to minimized cross contamination of clean areas and personnel.

C. If the decontamination procedure developed by the Supervisor indicates a need for regular showers and change rooms outside of a contaminated area, they shall be provided and meet the requirements of OSHA 29 CFR 1910.141. If temperature conditions prevent the effective use of water, then other effective means for cleansing shall be provided and used.

D. Employees whose non-impermeable clothing becomes wetted with hazardous substances shall immediately remove the clothing.

14. **EMERGENCY RESPONSE PROCEDURES** - The purpose of this section is for individuals who are likely to witness or discover a hazardous substance release and who have been trained to initiate an emergency response sequence by notifying the proper authorities of the release.

15. **TRAINING** - All Schmid employees who are likely to witness or discover a hazardous substance release shall be trained at the awareness level unless otherwise determined by Schmid Management. The instructor shall have the training and/or academic credentials and instructional experience to demonstrate competency to provide training. Employees who are trained in accordance with the plan shall receive annual refresher training. A record of methods used must be kept on file.

A. Employees who are likely to witness or discover a hazardous substance release and shall receive 8 hours awareness level training or have had sufficient experience to demonstrate competency in areas of initiating an emergency response sequence by notifying the proper authorities of the release and will be maintained as part of their training records.

B. Employees who receive 8 hours first response operation level training or have had sufficient experience to demonstrate competency in areas of responding to releases or potential releases of hazardous substance, to protect wear by persons, property or the environment. Their function is to contain the release from a safe distance and help it from spreading. Certification is required and will be maintained as part of their training records.

C. Employees who receive 24 hours technician level of training equal to first responder operations level with knowledge of how to implement emergency response plan, know the classification, identification and verification of known or unknown substances, functions within an assigned role in the ICS, how to select and use of proper PPE, perform advanced containment, and understands decontamination and toxicology. Certification is required and will be maintained as part of their training record.

D. In addition to the 24 hours of training for the technical level, the specialist must be able to develop a site safety and control plan. This person is required to have at least 24 hours of training equal to the first responder operations level. This person knows how to implement the program and system, PPE, hazard risks, State and Federal regulations and decontamination. Certification is required and will be maintained as part of their training record.

E. In addition to the 24 hours of training for the first responder level, the On-Scene Incident Commander must be able to implement the program and system, PPE, hazard risks, State, Federal regulations and decontamination. Certification is required and will be maintained as part of their training record.

16. **EMERGENCY RESPONSE PLAN** - An emergency response plan shall be developed and implemented to handle anticipated emergencies prior to the commencement of emergency response operations. The plan shall be in writing and available for inspection by employees, their representatives and OSHA.

A. The minimum items should be addressed:
   1. Pre-emergency planning and coordination with outside parties.
   2. Personnel roles, lines of authority, training and communications.
   3. Emergency recognition and prevention.
   4. Safe distances and places of refuge.

17. **RESPONSIBILITIES** - Schmid most qualified employee has responsibility for controlling the operations at the site during the emergency response until properly relieved by a qualified senior official.

18. **MEDICAL SURVEILLANCE** - Schmid emergency response employees who exhibit signs or symptoms which may have resulted from exposure to hazardous substances during the course of an emergency shall be provided with medical consultation at no cost to the employee. They may also be placed on a medical monitoring program based on the exposure.

19. **PERSONAL PROTECTIVE EQUIPMENT** - All Schmid employees will utilize the appropriate PPE dictated by the individual controlling the response provided they are currently trained in the use of the PPE. For all unknown materials Level B (see section 4) shall be utilized until it has been deemed by the controlling individual that it is safe to downgrade PPE.

20. **POST EMERGENCY RESPONSE** - Schmid does not remove hazardous substances, health hazards and materials contaminated with them (such as contaminated soil or other elements of the natural environment) from the site? This shall be the responsibility of the Host Employer, Contractors, and/or State or Federal authorities.

SECTION 19

GROUNDING PROGRAM

1. GROUNDING PROGRAM

A. OSHA References - 29 CFR 1926.404

B. Policy - All 120 volt, single phase 15, and twenty ampere receptacle outlets on Schmid sites, which are not part of the permanent wiring of the building or structure and in use by Schmid employees or their subcontractors must have approved ground fault circuit interrupters for personnel protection. Receptacles on a two wire single phase portable or vehicle mounted generator rated more than 5 kW, where the circuit conductors of the generator are insulated from the generator frame and all other grounded circuits, need not be protected with ground fault circuit interrupters.

C. Exceptions to this policy must be made by the Schmid Safety Representative. If an exception is granted, the assured equipment grounding procedures must be followed. A copy of this program must be posted and maintained at the work site.

D. Identification of Conductors - A conductor used as a grounded conductor must be identifiable and distinguishable for all other conductors. A conductor used as an equipment grounding conductor must be identifiable and distinguishable from all other conductors.

E. Polarity of Connections - No grounded conductor will be attached to any terminal or lead so as to reverse designated polarity.

F. Reference - For additional electrical information refer to the OSHA Standards referenced at the top of this page.

SECTION 20

ASSURED GROUNDING PROTECTION PROGRAM

1. ASSURED GROUNDING CONDUCTOR PROGRAM

A. OSHA References - 29 CFR 1926.404, 29 CFR 1926.32(f)

B. Scope - On Schmid sites, where the grounding program outlined in Section 20 of this manual cannot be complied with, the requirements of this Section and OSHA 29 CFR 1926.404 will apply.

C. Program - This program is designed to provide for inspection, testing, and documentation of testing for all Schmid sites not in compliance with Section 20 of this manual. All cord sets, receptacles, which are not part of the building or structure, and equipment connected by cord and plug which are available for use or used by employees covered by this program. In addition a copy of this program shall be posted or kept in a location where employees can reference it if needed.

D. Approval Authority - This program is not valid for the site unless approved and endorsed by the Schmid Safety Representative. A separate program endorsement is required for each site.

1. Sample Endorsement - I have reviewed this site and found that it is not in compliance with Section 20 of the Schmid Health and Safety policy and procedures manual. The requirements of the Assured Grounding Protection Program, as outlined in this Section, are approved for use at this site and compliance with this Section is mandatory. This policy will remain in effect until work at the site is completed.

2. Competent Person(s) In accordance with OSHA 29 CFR 1926.32(f) and OSHA 29 CFR 1926.404, the below named individual(s) are named as competent person(s) required to implement the requirements of this program.

_____
(SITE LOCATION AND NAME)

_____
(NAME OF DESIGNATED COMPETENT PERSON)

_____
(NAME OF DESIGNATED COMPETENT PERSON)

_____ _____
(NAME OF COMPANY SAFETY DIRECTOR) (DATE OF APPROVAL)

_____
(SIGNATURE)

E. Posting - A copy of the endorsed policy for each site must be posted at the site. All required documentation of testing will be kept at the site until completion of the project. At completion, all documentation will be returned to the Schmid office for appropriate disposition.

F. Identification of Equipment - Equipment identified in this section will be identified by engraved, yellow plastic tags, sequentially numbered, and attached to the equipment with a nylon tie wrap.

G. Visual Inspections Each cord set, attachment cap, plug, and receptacle of cord sets and any equipment connected by cord and plug, except cord sets and receptacles which are fixed and not exposed to damage, must be visually inspected before each days use for external defects, such as deformed or missing pins, insulation damage, or indication of internal damage.

H. Tests

1. The following tests will be performed prior to first use; prior to returning equipment to service following any repair; and before equipment is used after any incident which could be reasonable expected to have caused damage (i.e., cord sets run over by vehicles) and at not less than three month intervals.

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

b) Each receptacle and attachment cap or plug must be tested for correct attachment of the equipment grounding conductor.

c) The equipment grounding conductor must be connected to its proper terminal.

2. At intervals not to exceed 6 months, all cord sets and receptacles not exposed to damage must be inspected following the protocol outlined in H-1, (a), (b) and (c) above.

I. Documentation of Tests - All tests will be conducted by the competent person(s) designated for this site and documented on the attached form.

J. Damaged Equipment And Failed Equipment - Must be removed from service immediately, repaired, inspected and tested prior to return to service.

APPROVED GROUNDING CONDUCTOR PROGRAM TEST DOCUMENTATION

Date of Test	Test Conducted	Equipment ID#	Interval	Tested By	Results

SECTION 21

MASONRY CONSTRUCTION

1. MASONRY CONSTRUCTION

A. Whenever a masonry wall is being constructed, a limited access zone will be established prior to construction meeting the following requirements:

1. Equal to the height of the wall to be constructed plus 4 feet, and shall run the entire length of the wall.
2. Shall be located on the side of the wall that will be un-scaffolded.
3. Restricted to entry only by employees actively engaged in constructing the wall.
4. Shall remain in place until the wall is adequately supported to prevent overturning and collapse unless the height of wall is over 8 feet and remain in place until permanent supporting elements of the structure are in place.

2. CONCRETE WORK

A. General Requirements

1. All requirements and materials used in concrete construction and masonry work shall meet the applicable requirements for design, construction, inspection, testing, maintenance, and operations.
2. Employees working more than 6 feet above any adjacent working surfaces, placing and tying reinforcing steel in wall, piers, columns, etc. shall be provided with a safety harness or equivalent protection.
3. Large throat openings snap hooks (rebar or ladder hooks) are positioning only and must be used with a regular lanyard and snap hook for fall protection. Using both while climbing is required for complete protection.
4. Stripped forms and shoring shall be removed and stockpiled promptly after stripping in all areas in which persons are required to work or pass. Protruding nails, wire, ties, and other form accessories, not necessary to subsequent work, shall be pulled, cut, or other means taken to eliminate the hazard.
5. Employees shall not be permitted to apply a cement, sand, and water mixture through a pneumatic hose unless they are wearing protective head and face equipment.
6. Employees shall not be permitted to work above vertically protruding reinforcing steel unless it has been protected to eliminate the hazard of impalement.
7. Wire mesh rolls shall be secured at each end to prevent dangerous recoiling action.
8. Riding concrete buckets for any purpose shall be prohibited, and vibrator crews shall be kept out from under concrete buckets suspended from cranes or cableways.
9. Employees (except those essential to the post tensioning operations) must not be permitted to be behind the jack during tensioning operations.
10. Signs and barriers must be erected to limit employees' access to the post tensioning area during tensioning operations.
11. When discharging on a slope, the wheels or ready-mix trucks shall be blocked and the brakes set to prevent movement.
12. Handles of bull floats, used where they may contact energized electrical conductors, shall be constructed of non-conductive material, or insulated with a non-conductive sheath whose electrical and mechanical characteristics provide the equivalent protection of a handle constructed of non-conductive material.

13. Powered and rotating type concrete troweling machines that are manually guided shall be equipped with a control switch that will automatically shut off the power whenever the operator removes his hands from the equipment handles (dead man switch).

B. Cast-in-Place Concrete

1. Form work must be designated, fabricated, erected, supported, braced, and maintained so that it will be capable of supporting, without failure, all vertical and lateral loads that might be applied to the formwork in conformance with sections 6 and 7 of the American National Standard for Construction and Demolition Operations - Concrete and Masonry Work, (ANSI Standard A10.9-1983).
2. Drawings and plans, including all revisions for the jack layout, formwork (including shoring equipment), working decks and scaffolds, must be available at the jobsite.
3. All shoring equipment (including equipment used in re-shoring operations) must be inspected prior to erection to determine that the equipment meets the requirements specified in the formwork drawings.
4. Shoring equipment found to be damaged must not be used for shoring. Erecting shoring equipment must be inspected immediately prior to, during, and immediately after concrete placement. Shoring equipment that is found to be damaged or weakened after erection must be immediately reinforced.
5. If single post shores are used for on top of another (tiered), then additional shoring requirements must be met. The shores must be:
    a) Designed by a qualified designer and the erected shoring must be inspected by an engineer qualified in structural design,
    b) Vertical aligned,
    c) Spliced to prevent misalignment, and
    d) Adequately braced in two mutually perpendicular directions at the spliced level. Each tier also must be diagonally braced in the same two directions.
6. Adjustment of single-post shores to raise formwork must not be made after the placement of concrete.
7. Re-shoring must be erected, as the original forms, and shores are removed, whenever the concrete is required to support loads in excess of its capacity.
8. The steel rods or pipes on which jacks climb or by which the forms are lifted must be:
    a) Specifically designed for that purpose and,
    b) Adequately braced where not encased in concrete. Forms must be designed to prevent excessive distortion of the structure during the jacking operation.
9. Jacks and vertical supports must be positioned in such a manner that the loads do not exceed the rated capacity of the jacks.
10. The jacks of other lifting devices must be provided with mechanical dogs or other automatic holding devices to support the slip forms whenever failure of the power supply or lifting mechanisms occurs.
11. The form structure must be maintained within all design tolerances specified for plumbness during the jacking operation. The pre-determined safe rate of lift must not be exceeded.
12. All vertical slip forms must be provided with scaffolds or work platforms where employees are required to work or pass.
13. Reinforcing steel walls, piers, columns, and similar vertical structures must be adequately supported to prevent overturning and collapse.

14. Forms and shores (except those used for slabs on grade and slip forms) must not be removed until the concrete has gained sufficient strength to support its weight and that of superimposed loads. Such determination must be based on compliance with one of the following:

a) The plans and specifications stipulate conditions for removal of forms and shores, and such conditions have been followed, or

b) The concrete has been properly tested with an appropriate American Society for Testing Materials (ASTM) standard test method designed to indicate the concrete compressive strength, and the test results indicate that the concrete has gained sufficient strength to support its weight and superimposed loads.

15. Re-shoring must not be removed until the concrete being supported has attained adequate strength to support its weight and all loads in place upon it.

C. Pre-cast Concrete

1. Pre-cast concrete wall units, structural framing, and tilt-up wall panels must be adequately supported to prevent overturning and to prevent collapse until permanent connections are completed.

2. Lifting insets that are embedded or otherwise attached to tilt-up wall panels must be adequately supported at least two times the maximum intended load applied or transmitted to them; lifting inserts for other pre-cast members must be capable of supporting four times the load.

3. Only essential employees are permitted under pre-cast concrete that is being lifted or tilted into position.

SECTION 22

RIGGING AND HOISTING EQUIPMENT

1. **RIGGING AND HOISTING** - These rules apply to all Schmid employees and subcontractors. Note: Schmid employees will utilize mechanical means of lifting if at all possible. Manual Lifting is the last option. Additional specific information can be obtained from the above referenced OSHA Standard.

A. OSHA References - 29 CFR 1926.251

B. Rigging and Hoisting

1. The manufacturer's name and specifications applicable to the operation of the specific equipment will be attached to the equipment. Equipment shall be used per manufacture's intended use and shall never exceed the manufacture's load capacity.
2. Rated load capacities load test and recommended rules for safe operation will be conspicuously posted on all equipment at the operator's station.
3. A competent person experienced in rigging and hoisting shall be designated on all projects where rigging and hoisting is needed.
4. A competent person shall inspect all rigging and hoisting equipment prior to each use and during use to ensure that it is in safe condition. Any equipment found to be defective shall be removed from service immediately. An initial inspection following the guidelines specified in this program shall take place prior to use of any rigging and hoisting equipment. Monthly inspections are required to be completed and documented thereafter. The inspections are to be turned in to the site Supervisor or Safety Officer no later the 12 hours after the inspection period.
5. Rigging equipment not in use shall be removed from the immediate work area so as not to present a hazard to employees and shall be properly stored.

C. Below the Hook Structural and Mechanical Lifting Devices Suggested requirements include but are not limited to the following:

1. Shall conform to requirements of ASME/ANSI Standard B30.20. Note: Special lifting devices for shipping containers weighing 10,000 pounds or more that are used for radioactive materials maybe governed by ANSI Standard N14.6 (Standard for Shipping Containers Weighing 10,000 pounds or More for Nuclear Materials).
2. Shall have the rated load capacity marked on the main structure where it is visible. If the lifter is made up of several lifters, each detachable from the group, these lifters shall also be marked with their individual rated loads.
3. A load test, not to exceed 125 percent of the rated load unless otherwise recommended by a manufacturer shall be provided.
4. A load test certificate indicating the date of load test, amount of load applied, and confirmation of lifter load rating shall be supplied.
5. Rated load should not be more than 80 percent of the maximum load sustained during the test.
6. Hooks on overhaul ball assemblies, lower load blocks, or other attachment assemblies shall be of 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.
7. Shall have a complete or other permanent marking affixed to the lifting device displaying the following:
    a) Manufacturer's Name
    b) Serial Number/Identification Number

c) Lifter Weight if over 100 pounds (45KG)
d) Rated load Capacity

D. General Construction
1. Shall be designed to withstand the forces imposed by the rated load.
2. Shall have a minimum design factor of 3 based on yield strength for all load bearing structural components.
3. Welding shall be in accordance with ANSI/AWS D1.
4. Guards for exposed moving parts such as, but not limited to gearing, projecting shafts, and chain drives that constitute a hazard under normal operating conditions should be guarded.
5. Electrical equipment and wiring shall comply with Article 610 of ANSI/NFPA 70.

E. Wire Rope Suggested requirements include but are not limited to the following:
1. Wire rope shall meet or exceed the requirements of Federal Specification RR-W.
2. 410 for wire rope, Mil Specification MIL-DTL-83420 for air craft cable and MIL-W-83140 for non-rotating stainless steel wire rope.
3. Wire rope shall be made in the United States by a member of the Wire Rope Technical Board (except stainless steel, and unless recommended otherwise by a crane or hoist manufacturer). Stainless steel wire rope shall be made in the United States and shall be 302 or 304 grade stainless steel unless otherwise recommended by a crane or hoist manufacturer.
4. Wire rope shall have documentation from the manufacturer traceable to the material furnished and signed by the manufacturer's authorized representative. Documentation should reference as a minimum the diameter, number of strands, core, lay, grade, manufacturer's lot/run number, material number, and the nominal breaking strength of a sample.
5. Shall be shipped lubricated and with a protective covering, i.e. plastic or cardboard.

F. Chain Slings Suggested requirements include but are not limited to the following:
1. Shall meet or exceed requirements of ASME/ANSI Standard B30.9 and OSHA 29 CFR 1910.184.
2. Alloy steel chain slings shall have permanently affixed durable identification; stating size, manufacturer's grade, rated load, and angle upon which the rating is based, reach, number of legs, and sling manufacturer.
3. Hooks, rings, oblong links, pear-shaped links, welded, or mechanical coupling links or other attachments shall have a rated load of at least equal to that of alloy steel chain with which they are used.
4. All welded components in the sling assembly shall be proof load tested as components or as part of the sling assembly.
5. Hooks attached to chain slings shall meet the requirements of ASME/ANSI Standard B30.10.
6. The welded components of all new slings shall be proof tested by the component or sling manufacturer to 200 percent of the rated load.
7. The proof load for multiple leg slings shall be applied to the individual legs and shall be 200 percent of the rated load of a single leg sling.

8. A certificate of proof test shall be provided by the manufacturer or supplier referencing the specific sling identification number, date of test, and amount of load applied. (employer shall retain a certificate of the proof test and shall make it available for examination).

G. Synthetic Slings Suggested requirements include but are not limited to the following:

1. Shall meet or exceed the requirements of OSHA 29 CFR 1910.184 and ASME/ANSI Standard B30.9.

2. Should be manufactured from webbing specifically constructed for overhead lifting, featuring red core yarns.

3. Webbing shall have the following characteristics:

a) Sufficient certified tensile strength to meet the sling manufacturer's requirements,

b) Uniform thickness and width,

c) Full woven width, including selvage edges,

d) Webbing ends shall be sealed by heat, or other suitable means, to prevent raveling.

e) Thread used in the manufacture of synthetic web slings shall be the same generic type yarn as the sling webbing.

f) Stitches shall be lock-stitched and preferably continuous. When not continuous, it shall be back stitched at the ends to prevent raveling.

g) The load carrying splice shall be sewn with a pattern of sufficient strength to justify the manufacturer's rated capacities.

h) Shall have a minimum design factor of 5.

i) End fittings shall have sufficient strength to sustain twice the rated load of the sling without permanent deformation.

j) Each sling shall be permanently marked with the following:

(1) Manufacturer's name or trademark

(2) Manufacturer's code or stock number

(3) Type of synthetic web material

(4) Rated loads for the type of hitches used

Note: Hand written, or ink embossed markings are not acceptable. Sling tags shall be indelibly marked and the lettering shall not wear off with use. The markings shall remain legible for the life of the sling

k) The manufacturer shall have on file a written system of sling traceability as well as a quality control procedure. Traceability should be specific mill lots.

l) Fabric wear pads should be sewn into the bearing points of the sling eyes. Leatherwear pads are not recommended.

m) Product warnings relative to the proper use, care, and maintenance shall accompany the shipment.

n) Single leg and endless synthetic-web slings shall be proof tested to 200 percent of the rated load.

o) Multiple leg bridle slings shall have the proof load applied to the individual legs. The proof load shall be two times the vertical rated load of a single leg sling.

p) A load test certificate (LTC) shall be provided for each lot of slings supplied. The LTC shall reference as a minimum the date of proof test, amount of load applied, sling capacity, and lot/run number. The manufacturers authorized representative shall sign the LTC.

q) Note: Sling lengths shall be within a specified tolerance. Synthetic sling manufacturer's normal length is ±1 percent of the sling length.

H. Synthetic Polyester Round Slings Suggested requirements include but are not limited to the following:

1. Slings should meet or exceed requirements of the Web Sling and Tie Down Association, recommended specification for round slings made of polyester fibers used for general lifting purposes.
2. Polyester round slings including those incorporating welded fittings shall be proof tested to 200 percent of the vertical rated capacity.
3. A load test certificate (LTC) shall be provided for each lot of slings supplied. The LTC shall reference at a minimum the date of proof test, amount of load applied, sling capacity and lot/run number. The manufacturers authorized representative shall sign the LTC.
4. The core(s) shall be formed from one or more ends of yarn, wound together on a plurality of turns. The core(s) should be uniformly wound to ensure even distribution of the load.
5. The cover(s) should be of the same fiber type as the load bearing core(s). When the cover is a different fiber type than the load-bearing core, follow the manufacturer's recommendations for use.
6. The cover should be made from one length of material.
7. When the core and cover are of the same fiber, the thread shall also be of that fiber type. When the core and cover are of different fiber types, the thread should be of the same fiber type as the cover.
8. All stitching shall be lock-stitched type and should be continuous. When not continuous, they shall be backstitched or overstitched to prevent raveling.
9. The design factor for new polyester round slings and polyester round slings incorporating fittings shall be a minimum of 5.
10. Each polyester round sling shall be permanently marked or labeled showing:
    a) Name or trademark of manufacturer.
    b) Manufacturer's code or stock number.
    c) Rated capacities for the three basic hitches (vertical, choker, vertical basket).
    d) Core fiber type - if cover(s) is of a different fiber type, both fiber types shall be identified.
    e) Length (reach) - bearing point to bearing point.
11. Each manufacturer shall internally identify their product with name or trademark for traceability.

I. Wire Rope Slings Suggested requirements include but are not limited to the following:

1. Shall meet or exceed the requirements of OSHA 29 CFR 1910.184 and ASME/ANSI Standard B30.9.
2. Wire rope purchased to fabricate slings shall be made in the United States by a member of Wire Rope Technical Board (except stainless steel). Stainless steel wire rope shall be made in the United States and shall be 302 or 304 Grade stainless steel.
3. Wire rope shall meet the requirements of Federal Specification RR-W-410D or Military Specification MIL-W-83420.

4. Wire rope shall have documentation from the manufacturer traceable to the material furnished and signed by the manufacturer's authorized representative. Documentation shall reference as a minimum the diameter, number of strands, core, lay, grade, manufacturing lot/run number, master reel number and nominal breaking strength of sample.
5. Shall be shipped lubricated and with a protective covering, i.e. plastic or cardboard.
6. Slings should be either 6 x 19 or 6 x 37 classification.
7. Slings should be made of wire rope produced from EXIPS (Extra Improved Plow Steel) with an IWRC (Independent Wire Rope Center). Consideration may be given to other grades or types of wire rope, dependent upon the type of expected service due to the type of load, hitch, or environment.
8. Shall have a minimum of 5 to 1 safety factor.
9. Mechanical spliced single leg and endless wire rope slings, and swaged socket or poured socket assemblies shall be load tested to 200 percent of the rated vertical load.
10. Shall be individually tagged with a durable tag including the following information:
    a) WLL (Working Load Limit)
    b) Purchase order number or serial number
    c) Manufacturer's name or ID
11. Shall have a load test certificate (LTC) for each lot of slings supplied. The LTC shall reference as a minimum the date of proof test, amount of load applied, sling capacity, and lot/run number, the manufacturers authorized representative shall sign the LTC.
12. Single leg hand tucked slings shall have a proof load equal to the rated load but shall not exceed 125 percent of the rated load.
13. The proof load for multiple leg bridle slings shall be applied to the individual legs and shall be either 125 percent for hand tucked splice or 200 percent for mechanical splice, times the vertical rated load of a single leg sling of the same size, grade, and construction of rope. Any master link to which multiple leg slings are connected shall be proof loaded to 200 percent of the force applied by the combined legs.
14. Multiple leg bridle slings shall be tagged with a durable tag on the master link indicating the working load limit for the total combined legs for each individual sling in a vertical configuration. The purchase order number or serial number and the manufacturer’s ID should be supplied.

J. Shackles - Suggested requirements include but are not limited to the following:
1. Shackles shall meet or exceed the requirements of Federal Specification RR-C-271D.
2. Type of shackles covered by this specification include:
    a) Class 1, Round Pin Anchor
    b) Class 2, Screw Pin Anchor
    c) Class 3, Safety Anchor
    d) Class 1, Round Pin Chain
    e) Class 2, Screw Pin Chain
    f) Class 3, Safety Chain shackles
3. Each shackle body shall be permanently and legibly marked in raised or stamped letters on the side of the shackle bow with the identifying manufacturer's name or trademark, shackle size, and the recommended safe working load.
    a) Grade A regular strength shackle pins and bolts shall be unmarked.

b) Grade B high strength shackle pins and bolts shall be marked by the raised or stamped letters HS on the head.

c) Shackle markings shall be raised or stamped letters of the maximum height permitted by the size of the shackle component being marked.

d) Grade A shackles (regular strength), together with their pins and bolts shall be forged from carbon steel.

e) Grade B shackles (high strength) together with their pins and bolts shall be forged from alloy steel.

4. Shackles shall have minimum 5 to 1 safety factor.

5. Shackle samples shall be subjected to proof loads of 200 percent of the rated capacity.

6. Shackle pins shall fit freely without binding and seat properly.

7. Shackles shall be sufficiently ductile so that, when fractured, the fractured member shall show a permanent distortion before breaking.

K. Turnbuckles Type Iii Rigging - Suggested requirements include but are not limited to the following:

1. Turnbuckles used for rigging applications shall meet or exceed the requirements of Federal Specification FF-T-791B, Section 3.9.3.

2. Shall be fabricated from forged alloy steel.

3. Shall be provided with a jam nut of a type, which does not depend upon deformation of the threads for security.

4. Certificate of proof test shall be provided by the manufacturer for selected samples from each lot. Certificate shall indicate as a minimum the size, WLL, test weight, and date of test.

5. Proof test loads shall be 1/2 the specified breaking strength for the end pull.

6. Turnbuckles shall have a minimum safety factor of 5 based on ultimate breaking strength.

7. Manufacturer's name or trademark and turnbuckle size shall be permanently marked on the body of the turnbuckle.

L. Wire Rope Clips (Clamps) - Suggested requirements include but are not limited to the following:

1. Shall meet or exceed requirements of Federal Specification FF-C-450D.

2. Shall be permanently and legibly marked with the size and manufacturer's identifying mark.

3. Wire rope clips should be shipped with application instructions and product warnings for each type or size clip.

M. Eye Bolts - Suggested requirements include but are not limited to the following:

1. Shall be fabricated from forged carbon or alloy steel and shall meet or exceed the requirements of ASTM specification A489 for "Carbon Steel Eye Bolts" or ASTM F541 Standard Specification for Alloy Steel Eyebolts, and ANSI/ASME Standard B18.15 Forged Eye Bolts.

2. Eye bolts used for lifting service shall have the manufacturer’s name or identification mark forged in raised characters on the surface of the eyebolt. Alloy steel eyebolts shall have the symbol A (denoting alloy) and the manufacturer's name or identification forged in raised letters on the surface of the eyebolt.

3. The safe working load shall have a safety factor of 5.

N. Hooks - Suggested requirements include but are not limited to the following:

1. Hooks used for lifting service shall meet or exceed the requirements of ANSI/ASME Standard B30.10.
2. Manufacturer's identification shall be forged cast, or die stamped on a low stress non-wearing area of the hook.
3. When proof tests are used to verify manufacturing process, material, or configuration, hooks shall be able to withstand proof load application, without permanent deformation when a load is applied for a minimum of 15 seconds. Proof loads for hooks up to 50 ton capacity shall be 200 percent of the rated capacity.
4. Performance testing of hooks shall not be required except where necessary to conform to requirements for the equipment of which they are a part of.

O. Swivel Hoist Rings - Suggested requirements include but are not limited to the following:

1. All hoist rings shall be individually proof load tested to a minimum of 200 percent of the rated capacity, but no more than 250 percent of the rated capacity.
2. Shall have a proof load certificate supplied from the manufacturer with each swivel Hoist ring.
3. Shall have the manufacturer's name or trademark permanently marked on the swivel Hoist ring.
4. Shall have a minimum safety factor of 4, based on ultimate breaking strength.
5. Shall be permanently marked by the manufacturer with the WLL and recommended Torque value.
6. Shall be packaged with proper application instructions and warning information.

P. Hoist Rings, Pear Shaped Links - Suggested requirements include but are not limited to the following:

1. Shall meet or exceed the requirements of RR-C-271-D.
2. Welded rings or links shall be subjected to a nondestructive weld test (NDT) and have documentation provided. Note: NDT is not required for forged rings or links.
3. Shall have a minimum safety factor of 5, based on ultimate breaking strength.
4. Rings shall be forged or welded from low alloy steel.
5. Should be marked by the manufacturer with the manufacturer's name or trademark and ring or link size.

Taglines shall be used for all lifts unless it creates an unsafe condition to assist in maintaining control of the load.

All employees shall be kept clear of loads about to be lifted and of suspended loads.

SECTION 23

EXPOSURE CONTROL PROGRAM

1. **SUBJECT** - Exposure Control Plan for Schmid personnel with Occupational. Exposure to Bloodborne Pathogens and Other Infectious Materials.

A. Purpose - This instruction provides for uniform policy for protection of Schmid personnel who, as part of their job, face reasonably anticipated exposure to Bloodborne pathogens and/or other infectious materials.

B. Scope - This instruction applies to all Schmid Employees.

C. OSHA References - 29 CFR 1910.1030 Occupational Exposure to Bloodborne Pathogens, 29 CFR 1910.1020 Access to Employee Exposure and Medical Records.

D. Action - Schmid Administrators shall use this plan to ensure that Schmid personnel who have occupational exposure to Bloodborne Pathogens are afforded protection in accordance with OSHA 29 CFR 1910.1030.

Exposure control plan for Schmid personnel with occupational exposure to Bloodborne Pathogens

Schmid shall ensure that a copy of the Exposure Control Plan is accessible to employees in accordance with OSHA 29 CFR 1910.1020(e).

2. **EXPOSURE DETERMINATION**

All Schmid employees who, as a result of performing their job duties, must engage in activities where exposure to blood or other potentially infectious materials is reasonably anticipated are considered to have occupational exposure.

Schmid employees designated as first aid responders are considered at risk of occupational exposure due to the nature of these duties (e.g., assisting bleeding victims, resuscitation) and are included in this plan.

Field personnel shall take necessary precautions to avoid direct contact with body fluids and shall, except when absolutely necessary for the performance of duties, not participate in activities nor enter areas that will require them to come into contact with body fluids, needles, or other instruments or surfaces that are contaminated with blood or other potentially infectious materials. Any procedure that can be avoided is not to be undertaken. Any employees who come in contact with potentially infectious materials are considered at risk regardless of the use of personal protective equipment.

3. **METHODS OF IMPLEMENTATION**

A. Methods of Compliance

1. Universal Precautions - Schmid personnel are not to handle contaminated objects unless absolutely necessary for performance of their duties. Schmid personnel shall use universal precautions (see Standard for definition) when contact with any blood or other potentially infectious materials are absolutely necessary (e.g., removing a sampling device that has become contaminated with blood).

B. Work Practice Controls

1. Hand Washing Facilities

a) Antiseptic wipes will be provided to personnel with duties in this plan. These wipes are to be carried by first aid responders on sites where soap and running water may not be immediately available and used if contact of any skin surface with blood or other potentially infectious material occurs. Such wipes should be disposed of as would any other trash except in a very rare circumstance where they would become contaminated to the extent that they would be considered regulated waste. In such case, see Section 2 of this plan.

b) When such wipes are used, hands, or other skin surfaces cleansed using wipes are to be washed as soon as feasible with soap and running water.

c) Employees are to wash hands with soap and water as soon as feasible after removal of gloves.

d) Employees are to wash hands and any other skin with soap and water, and flush mucous membranes with water, immediately or as soon as feasible following contact of those body areas with blood or any other potentially infectious material.

2. Contaminated Equipment - In order to prevent occupational exposure to personnel, equipment that may become contaminated with blood or other potentially infectious materials are to be examined prior to servicing or shipping and decontaminated (e.g., wiped off with bleach or other disinfectant) as necessary. All equipment that can be easily decontaminated at the office level (e.g., wiped off) should be decontaminated there.

Specimens of blood or other potentially infectious materials such as blood soaked bandages, etc. must be placed in leak proof bags for handling, storage, and transport.

Contaminated equipment or other contaminated items are not to be placed or stored in areas where food is kept, and decontamination should be accomplished as soon as possible following the incident where contamination occurred. Decontamination is not to take place in any area where food or drink is consumed. Cloths used to wipe contaminated equipment can be discarded as refuse unless they would somehow become contaminated to the extent that they would be considered regulated waste (see standard).

3. Personal Protective Equipment - Although field personnel are expected to avoid the handling of blood or other potentially infectious materials as well as contact with surfaces or items contaminated with such materials, some duties may make contact with such items unavoidable Schmid will provide appropriate gloves of proper size, which the Safety Director and field personnel will carry for those activities, tasks, or procedures are likely to take place. Such gloves are to be replaced as soon as practical when contaminated or as soon as feasible if they become torn, punctured or when their ability to function as a barrier appears to be compromised. These gloves are not to be washed or decontaminated for reuse.

The Safety Officer or field person is to determine the extent of contamination of gloves prior to their removal. If gloves can be considered regulated waste as defined in the Standard (a very rare circumstance), they are to be placed in a regulated waste container. It is possible that such a container may not be available. In this instance, see Section 2.

First aid supplies to be used by designated first aid responders are to include disposable resuscitation masks as well as gloves. Such gloves will be available in the size(s) needed by those expected to function as first aid responders. Such equipment is to be used for the employee's protection in cases where the employee is expected to provide ventilator

assistance. It is not anticipated that Safety Officer or other Schmid personnel will require personal protective equipment other than gloves.

In situations where other equipment would be needed, it is expected that the Safety Officer or field person will avoid such areas. Should situations occur where such exposure would be necessary for one's job performance; this plan will be revisited and appropriately amended.

When the possibility of occupational exposure is present, PPE is to be provided at no cost to the employee such as gloves, gowns, etc. PPE shall be used unless the employer shows that employees temporarily declined to use PPE under rare circumstances. The employer shall ensure that appropriate PPE in the appropriate sizes is readily accessible. PPE should be cleaned, laundered and properly disposed. The employer shall repair and replace PPE as needed to maintain its effectiveness.

4. Regulated Waste - Only in rare circumstances is it anticipated that the duties of field personnel will generate regulated waste.

First aid supplies to be used by designated first aid responders are to include a bag to be used for containment of any regulated waste generated by the employee in the performance of first aid duties.

Disposal of such waste is to be accomplished in accordance with applicable State and Local laws. Where such laws require that the particular waste item be handled by a medical waste disposal company, Schmid designee will arrange for such disposal.

5. Hepatitis B Vaccination and Post-exposure Evaluation and Follow-up - Schmid offers the Hepatitis B vaccine and vaccination series to personnel with duties specified in Section 1 Schmid offers post-exposure evaluation and follow-up following an exposure incident to any employee who suffers an exposure incident while performing duties on the job for Schmid. All medical evaluations and procedures are to be made available at no cost to Schmid personnel, at a reasonable time and place, and under the other conditions set forth in OSHA 29 CFR 1910.1030(f).

6. Hepatitis B Vaccination - Schmid will make the Hepatitis B vaccine available to employees at a Local Health Service Facility.

All Schmid employees whose job duties involve occupational exposure (see Section 1 of this Plan) are to be offered the Hepatitis B vaccination. The vaccine will be made available after the training required in OSHA 29 CFR 1910.1030 has been accomplished, and within 10 days of initial assignment of the employee to duties with occupational exposure. It is desirable that all employees with duties such as those described in Section 1 be immunized against Hepatitis B. However, Schmid realizes that some personnel, even after training, may decline to receive the Hepatitis B vaccine. In such case, the declining Schmid employee is to sign the declination statement (see Appendix A of this Plan).

The employee can receive the vaccine after signing the declination statement if a change of mind occurs and if duties still involve those with occupational exposure. The Office Manager or designee will assure that each employee scheduled for immunization at a Health Service Facility is provided with the written opinion sample format in Appendix B of this Plan.

Any employee receiving vaccination at another site is to be provided with both the written opinion sample format and a copy of the Standard (see Appendix C). These materials are to be taken by the employee to the evaluating physician for completion. The written opinion should be returned to the Office where the employee is assigned. The first aid provider should obtain a copy of medical records related to Hepatitis B vaccination before departing the facility where vaccination takes place. Field personnel should insert this copy of such records in a copy of Appendix C.

Appendix C should then be carried by the field person on any jobsite where occupational exposure could be reasonably anticipated. Should an exposure incident occur, Appendix C, including the Hepatitis B related records, serves as the materials for the evaluating physician and is to be given to the evaluating physician.

7. Post-exposure Evaluation and Follow-up - The Office Manager or designee will provide materials for the evaluating physician found in Appendix C of this Plan to each field person assigned duties discussed in Section 1. Prior to each work activity involving such tasks, the field person is to ensure that the materials to be taken on the jobsite include the Materials for the Evaluating Physician (containing the Hepatitis B vaccination-related records inserted by the field person). This information is vital should an exposure incident occur.

In anticipation of possible exposure incidents, the Office Manager or designee shall instruct the field personnel to seek medical attention in the same manner that it would be sought should any injury occur during work activities (e.g., emergency room, physician's office, and urgent care clinic). In the event of an exposure incident (as defined in OSHA 29 CFR 1910.1030), the Schmid employee is to immediately wash any skin with soap and water and flush mucous membranes with water when such areas have had contact with blood or other potentially infectious materials.

The employee should then seek medical attention. It must be realized that any exposure incident is an event for which immediate attention must be sought, as the effectiveness of prophylaxis depends on the immediacy of its delivery. In addition, the employee who has had an exposure incident is to report such incident to his or her supervisor as soon as possible.

The supervisor will inform the Office Manager or designee who will contact the facility where the exposure incident occurred. The Office Manager or designee is to work together with the facility to ascertain the source individual's identity, arrange for testing of the source individual, and communicate with the physician evaluating the Schmid employee. Following an exposure incident, an Exposure Incident Report (see Appendix C) will be completed by the Schmid employee. The completion of this report should be done in consultation with the supervisor when the supervisor is immediately available by telephone. In no instance should report completion and physician evaluation be delayed.

The report is to be given by the employee to the evaluating physician. Report information will include:

a) A description of the exposed employee's duties as they relate to the exposure incident.

b) Documentation of route(s) of exposure and circumstances under which exposure occurred. Through direct input by the employee, the evaluating physician is best able to understand exactly what exposure occurred and therefore direct treatment appropriately.

8. Information provided to the Evaluating Physician - Post-exposure evaluation and follow-up are to be provided to the employee consistent with the requirements of OSHA 29 CFR 1910.1030. Therefore, upon presenting for evaluation, the employee will give to the physician the Materials for the Evaluating Physician (Appendix C of this Plan for Hepatitis B vaccination, Appendix C of this Plan for Evaluation following Exposure Incident). The instructions for the physician describe the requirements of OSHA 29 CFR 1910.1030 and instruct the physician to give the physician's written opinion to the employee to return to the supervisor. The office to which the employee is assigned will maintain the physician's written opinion. A copy of the actual evaluation results is to be returned by the physician to Schmid Main Office. The evaluation results will become a part of the field personnel's confidential medical record maintained in their personnel in the Medical Records Section. Records regarding any exposure incidents of personnel will be maintained in a confidential manner

C. Communication of Hazards to Employees

1. Labels and Bags - Schmid will provide biohazard labels to be affixed to bags containing any contaminated equipment. A bag and biohazard labels are to be carried by first aid responders when contamination of equipment is reasonably anticipated. Bags will be disposed of as ordinary refuse unless in the rare instance when they are contaminated to the extent that they are considered regulated waste as defined by the standard. In such case, see Section 2 of this Plan.

2. Information and Training - Personnel whose job duties involve occupational exposure, as specified in Section 1 of this Plan are to participate in Schmid training program for Bloodborne Pathogens at the time of initial assignment to tasks where occupational exposure occur. The training program contains all the elements specified in OSHA 29 CFR 1910.1030(g)(2). Training will be conducted on an annual basis, and the Office Manager or designated person will ensure that updates are given when there are changes in duties or procedures.

3. Recordkeeping

a) Medical records are to be maintained in the main office, as part of the medical files of field personnel. Such records are maintained in accordance with OSHA 29 CFR 1910.1020 and are kept confidential. Records are to be kept 30 years past employment date.

b) Training records are to contain all information specified in OSHA 29 CFR 1910.1030(h)(2) and will be maintained for 3 years from the date on which the training occurred. Training records will be held at the main office.

c) Transfer of Records - Schmid will comply with the requirements of OSHA 29 CFR 1910.1020(h) involving any transfer of records. Exposure incident records will remain at the Main Office. The employee may request and receive a copy of such records when transferring to another assignment.

4. EVALUATION OF CIRCUMSTANCES SURROUNDING AN EXPOSURE INCIDENT

A. The evaluation of circumstances surrounding an exposure incident is to be done by the designated safety person. This evaluation will consist of at least:

1. A review of the Exposure Incident Report completed by the Schmid employee.
2. Documentation regarding a plan to reduce the likelihood of a future similar exposure incident.
3. Notification of the Main Office and discussion of any similar incidents and planned precautions.

4. Such reports will be maintained at the Main Office. The Main Office will review these reports on a periodic basis so that reported information can be considered in the review and update of this Plan. In addition, Schmid will issue an alert to the other jobsites should similar incidents or trends among our various work sites be noted so that further incidents can be anticipated and prevented.

APPENDIX A

DECLINATION STATEMENT

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

_____ _____

Employee Signature Date

APPENDIX B

WRITTEN OPINION

To the Evaluating Physician:

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

(A) If vaccine was indicated (B) if vaccine was received

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

Please return this sheet to this employee, _____.
(Name of Employee)

Thank you for your evaluation of this employee.

_____
Physician's Signature

_____ _____
Physician's Name (printed) Date

The rest of the text for Appendix C can be found in the December 6, 1991 issue of the Federal Register. (FR 56:64175-64182)

APPENDIX C

INSTRUCTIONS FOR THE EVALUATING PHYSICIAN

This Schmid employee may have suffered an exposure incident as defined in the Bloodborne Pathogens Standard. In accordance with the standard's provision for post exposure evaluation and follow up, the employee presents to you for evaluation. Included to assist you in this evaluation are:

(A) A copy of OSHA 29 CFR 1910.1030, Occupational Exposure to Bloodborne Pathogens;

(B) A description of the exposed employee's duties as they relate to the exposure incident;

(C) Documentation of the routes of exposure and circumstances under which exposure occurred;

(D) Results of the source individual's blood testing, if available; and

(E) All medical records relevant to this employee's appropriate treatment, including vaccination status.

After completing the evaluation, please:

(A) Inform the employee regarding the evaluation results and any follow up needed;

(B) Complete the attached written opinion form and give it to the employee. (This form will be maintained in the office to which the employee is assigned); and

(C) Send a copy of all evaluation results and records to:

Schmid Pipeline Construction, Inc. at 850 Mallard Drive, Mayville WI 53050

Labeled as follows:

CONFIDENTIAL: MEDICAL RECORDS

These copies will be maintained as part of the employee's confidential medical record.

Should you have any questions regarding the evaluations or medical records, please contact Schmid Office Manager.

EXPOSURE INCIDENT REPORT

(Routes and Circumstances of Exposure Incident)
Please Print

Employee's Name _____ Date _____

Date of Birth _____SS# _____

Telephone (Business) _____ (Home) _____

Job Title _____

Date of Exposure_____ Time of Exposure _____ AM _____ PM _____

Hepatitis B Vaccination Status _____

Location of Incident _____

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

_____

_____

Describe the circumstances under which the exposure incident occurred (what happened that resulted in the incident)

_____

_____

What body fluid(s) were you exposed to?

_____

_____

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

_____

_____

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

Did PPE fail?_____ If yes, how?

Identification of source individual(s) (names)

Other pertinent information

WRITTEN OPINION

To the Evaluating Physician:

After your evaluation of this Schmid employee, please assure that the following information has been furnished to the employee and provide your initials beside the following statements:

(A) _____The employee has been informed of the results of this evaluation.

(B) _____The employee has been told about any medical conditions resulting from exposure to blood or other potentially infectious materials, which require further evaluation and treatment.

No other findings are to be included on this report.

Please return this sheet to this employee: _____.
(Name of employee)

Thank you for your evaluation of this employee.

_____
Physician's signature

_____ _____
Physician's name (printed) Date

APPENDIX D

FIRST AID SUPPLIES

In addition to supplies for rendering First Aid Assistance, First Aid Kits should contain:

1. **Disposable resuscitation mask**

2. **Gloves** of sizes needed by personnel performing First Aid

3. **Bags** (at least 2)

4. **Biohazard labels** (at least 2)

In addition, if First Aid Assistance is expected to be rendered at a site where running water may not be available, **antiseptic wipes** should be included in the First Aid Kit.

SECTION 24

SHORT SERVICE EMPLOYEE PROGRAM

1. This program applies to all Schmid employees or subcontractors brought in to do a specialized job that the regular work force is not trained to do, do not have the specialized equipment required, or not permitted to perform or to assist in a particular task.

2. The length of service required is of very short duration and generally confined to a very specific area of the site, this period is generally determined to be a few hours, a day or several days possibly longer if needed.

3. Schmid has determined that the definition of a Short Service Employee is based on criteria it has determined, or may be established by the host facility. That criteria may be based on the following:

A. Length of employment very limited, less than 6 months with employer.

B. Type of specific job or service being performed.

C. Not part of permanent site work force.

D May not be required to attend full safety training program, may receive a modified version covering basic policies and requirements depending of the job being performed.

E. Shall follow all SSHASP policies and procedures,

F. May not be able to work alone requiring a member of the regular work force or security to be present at all times. A work crew of less than 5 employees may not have more than one Short Service Employee.

G. May be required to wear uniquely colored hard hats or other clothing or some form of identification to be worn such as a badge or hardhat sticker and may include passes for vehicles on site.

4. Schmid shall notify and/or obtain permission from as required by the host facility that Short Service Employees will be working at the site.

A. Provide names of workers and or company as required.

B. Type of work being performed.

C. Location of work.

D. Duration of work, start and end date.

E. Who will be overseeing Short Service Employees?

5. Schmid shall establish a program that outlines the procedures for monitoring the work performed by short service employees.

A. An experienced Supervisor or Forman assigned to monitor the work site.

B. Extra safety audits if it is determined they are required based on the nature of the work, its location to potentially hazardous areas, past performance.

C. Others as may be determined.

D. Short Service Employees shall be monitored for compliance with health, safety, and environmental policies and procedures. Once the Short Service Employee has demonstrated competency and compliance with HSE policies and procedures, the contractor may remove the hi-visibility identifier.

E. A mentoring system shall be implemented to provide guidance to Short Service Employees and assist with their development. A mentor may only be assigned to one crew that includes Short Service Employees, and he/she must remain on site with them.

6. Subcontractors must follow all the requirements for Short Service Employees as outlined in Schmid Site Specific Health and Safety Plan and/or host facilities SSHASP.

SECTION 25
HAZARD COMMUNICATION PROGRAM (GHS)

1. **SCOPE** - This is the Hazard Communication Program concerning the acquisition and dissemination of information for potentially hazardous chemical materials to be used at all Schmid facilities and job sites. This is a mandatory program for Schmid and its affiliated companies. The program is designed to communicate hazards associated with chemical materials that employees may potentially be exposed, by any means, during normal activities, or during foreseeable emergencies.

A. This program has been developed to comply with the following standards:
   1. OSHA Hazard Communication
      a) General Industry 29 CFR 1910.1200
      b) Construction 29 CFR 1926.59

B. The Safety Director will be responsible for ensuring that this program is implemented in accordance with applicable regulations.

2. CHEMICAL HAZARD EVALUATION PROCEDURES

All chemical materials purchased, used, stored, handled, or distributed by Schmid employees will be evaluated for potential hazards in accordance with OSHA requirements. All chemical materials will have their respective safety data sheets (SDS) stored in a binder within easy access for all employees to review. The term chemical material includes, but is not limited to, products, raw materials, maintenance, and custodial/janitorial chemicals, compressed gases, solvents, reagents, packaging support chemicals (i.e., inks, dyes, coatings, wrappings, etc.), reprographic chemicals, and office chemicals; whether in pure form, mixtures of more than one material, or compounds formed by the chemical reaction of more than one chemical.

3. EVALUATING HAZARDS OF MATERIALS RECEIVE FROM AN OUTSIDE SUPPLIER

This section applies to all chemical materials that are received from an outside organization for use by Schmid employees or for reshipment to Schmid work sites. This part also applies to chemicals used by contractors performing work within Schmid facilities, even though Schmid may not have supplied those materials.

Schmid will rely on the hazard evaluations performed by its chemical manufacturers or suppliers. Therefore, all individuals are responsible for obtaining a Safety Data Sheet (SDS) for each new chemical material brought on a site. Normally, additional research on the potential hazards of a chemical will not be performed unless the information presented on the supplier's SDS is questionable.

The Safety Director will ensure that the current chemical inventories for all areas are obtained and updated on a periodic basis. Performing and actual chemical inventory will be the direct responsibility of the project manager, or superintendent, for each facility, work site and/or vessel that obtains or utilizes chemical materials. Each facility's current chemical inventory of hazardous materials will be maintained within the SDS binder(s) for that location. A copy of All SDS's received will be forwarded to the Safety Director for inclusion into Schmid SDS records. When a chemical material is purchased at a retail establishment (i.e., paints, thinners, cleaners, etc.), and when it is used significantly more than the normal consumer would be expected, or when the material is used differently from the intended consumer use, the purchaser will request

an SDS from the retail establishment. If they are unable to provide an SDS for the product purchased, a request for the SDS must be made in writing to the manufacturer. A form letter for requesting an SDS can be found at the end of this program. Forward a copy of any SDS request to the Safety Director.

If a SDS is requested by a purchaser of a chemical and an SDS (or a statement about its non-hazardous nature) is not received within 30 days of a request, or if the received written request to the supplier for additional information.

4. **SAFETY DATA SHEETS**

A Safety Data Sheet (SDS) must be obtained for each chemical material determined to be hazardous by OSHA criteria. The SDS's must be written in English as required by OSHA. All SDS's will be reviewed by the Safety Director for adequacy and completeness under the Hazard Communication Standard.

The Safety Director and Site Supervisors will maintain SDS files. These files will remain accessible to all employees that handle the material during their normal working hours. No employee may be denied access to an SDS or be required to view its information during shifts other than normal for that individual. If an employee desires, viewing of the SDS can be performed without management supervision. However, no SDS may be removed from the file. Copies are permitted after a Supervisor has explained the contents.

SDS’s will be maintained within Hazard Communication binders at each site in a location, which affords all employees easy access.

5. **CONTAINER LABELING** - It is the responsibility of each employee to ensure that, prior to use, all containers of potentially hazardous chemicals used are labeled, tagged, or marked with:

A. The identity of the hazardous material, i.e., common and/or chemical name, and Chemical Abstract Service (CAS) Registry Number, including the name that appears on the SDS.

B. An appropriate hazard warning, which gives an immediate warning and summary of the more important information from the SDS. In those cases where non-English speaking employees are working at jobsites information will be presented in their language also.

C. Note: Chemical materials supplied to outside contractors by Schmid must be labeled, tagged, or marked as identified above.

The outside shipping container label may contain the same information as the immediate chemical container, unless that label conflicts with the label(s) required by the Department of Transportation (DOT) for the transportation of hazardous materials.

An employee may transfer or place a hazardous chemical into another secondary use container and not label that container as long as it intended for immediate use by the employee who performs the transfer. If another employee is also to use the container or it will be used for more

than one shift, then that new chemical container must be labeled, as above, by the employee who transfers the product.

The contents of a chemical container that is not labeled appropriately may not be used or put into service, unless it is relabeled appropriately or the user is given specific approval from a responsible person. Labels already on any chemical container at any location, and used for any purpose, may not be removed, or defaced unless the contents of the container changes.

Signs, placards, standard operating procedures (SOP's), or similar written material may be used instead of actually placing a label on stationary containers, as long as the written document conveys the same information as is required on a label, and is readily accessible to each applicable employee during their normal working shift. This alternate labeling procedure will only be used after review by the Safety Director for each individual situation. Labels shall be legible, in English. However, for non-English speaking employees, information may be presented in their language as well.

The Purchasing Department will request that suppliers comply with all of the labeling and Safety Data Sheet provisions of the Hazard Communication Standard.

6. HAZARD COMMUNICATION TRAINING

The Safety Director will ensure that initial (at the time of assignment) and periodic Hazard Communication Training is provided to all applicable employees regarding the hazardous chemicals in their workplace. However, whenever a chemical that poses a new or different type of hazard enters the workplace, it is the responsibility of each supervisor to ensure employees are trained. This training will include (but is not limited to) Requirements of this program and a review of the SDS for that product for the following information:

A. Methods of detection and monitoring of the compound (including monitoring devices, appearance and odor).

B. Each physical and health hazard that the material presents.

C. Personal protective equipment, work practices, and emergency procedures (i.e. fire, first aid, chemical spill, etc.) to be followed while handling.

D. The labeling system for hazardous materials will be legible and in English, but for non-English speaking employees the information will be presented in their language, as it relates to the material.

E. Location of the hazard communication program, listing of hazardous materials present, SDS’s and hoe employees can obtain and use the appropriate hazard information.

F. Procedures for informing employees of the hazards of non-routine tasks, such as equipment maintenance or trailer pesticide application, etc., will be implemented whenever that task involves a hazardous chemical. Each supervisor is responsible for either training each employee or scheduling such training with a responsible person prior to performing any non-routine task.

G. Training for non-routine tasks will include:
1. Items 1 through 5 above,
2. Special precautions for the non-routine task, and
3. Other company safety procedures which are relevant to the operation, such as Lockout/Tagout and Hot Work Permits, etc.

H. It is the responsibility of the supervisor in charge of a project to ensure that all employees working in the facility are informed of any hazardous chemicals that they may be exposed to while working in the area. This information will include:
1. Existing hazardous chemicals,
2. Hazardous chemical emissions for processes involved in the work, and
3. Precautions and personal protective equipment which must be worn in the area.

I. The Project Manager will be responsible for all actions of the contract employees and will ensure that the outside employees follow all safety precautions that would be used by Schmid industrial employees.

J. Modifications to the content of the training program may be made to best reflect the needs of the needs of the employees at any given facility, or site. Coordination with the Safety Manager is highly recommended to ensure correct and consistent training throughout Schmid.

7. DOCUMENTATION OF TRAINING

Whenever training is provided to employees or contractors in accordance with this policy, the individual(s) responsible for providing this training will collect the names (printed), signatures and Social Security numbers of all attending individuals, and the dates and times of the training. Utilize the training roster located at the end of this program. Note that OSHA requires the employee's SSN.

Equipment operators, general laborers, supervisors and management, etc., must be trained prior to being allowed to participate in or supervise field activities. The training should cover the use of personal protective equipment. The training should also cover work practices which minimize hazardous risks and safe use of engineering controls and equipment.

Upon completion of training, forward a copy of the training roster and copies of any additional training material used to the Safety Director. Certificates of training and/or wallet cards will be produced and sent back to the location where the training was performed. These should be presented to the employees for their personal records. Documentation of all training performed will be submitted to human resources for inclusion into the individual's personnel records. Maintain a copy of all training records and certificates at the facility or job site, as a record that training was performed as required by OSHA.

Hazard Communications Chemical Listing

Below is a listing of the chemical ingredients for materials used by employees at this site:

Chemical product	SDS (Y/N)	SDS Request Letter (Y/N/NA)

Note: 1) Place this sheet(s) in the front of your SDS binder.
2) If an SDS is not available, send a request letter to the manufacturer and put a copy of the letter in the SDS binder.

Hazard Communication Training Sheet

Training Subject:		
Location:		**Date:**
Instructor:		
Student Printed Name	**Signature**	**SS#**

Date: _____

To: _____
_____
_____

RE: Request for Safety Data Sheet

The Occupational Safety and Health Administration (OSHA) require employers to maintain Material Safety Data Sheets (MSDS) for all chemical products used by employees. The employees of Schmid Pipeline Construction, Inc. use the following chemical products. A review of our records shows that we do not have copies of the SDS for these products.

Chemical Product:

Product Name	Product Number (if applicable)	Container Size

Please forward a copy of the MSDS for these products to the following address:

Schmid Pipeline Construction, Inc.
850 Mallard Drive
Mayville, WI 53050

Or fax 920-387-9984

Should you have any questions please contact me at 920-387-9997.

Thank you!

Schmid Pipeline Construction, Inc.
Kim Smith, VP/Controller

SECTION 26

WORKING ON OR NEAR ENERGIZED PARTS

1. WORKING ON OR NEAR EXPOSED ENERGIZED PARTS

A. OSHA References - 29 CFR 1910.269

B. General - Only qualified employees may work in areas containing unguarded, un-insulated energized lines or parts of equipment operating at 50 volts or more. Electric lines and equipment shall be considered and treated as energized. At least two employees shall be present while the following types of work is being performed:

1. Installation, removal, or repair of lines that are energized at more than 600 volts.
2. Installation, removal, or repair of de-energized lines if an employee is exposed to contact with other parts energized at more than 600 volts.
3. Installation, removal, or repair of equipment, such as transformers, capacitors, and regulators, if an employee is exposed to contact with parts energized at more than 600 volts.
4. Work involving the use of mechanical equipment, other than insulated aerial lifts, near parts energized at more than 600 volts.

C. Minimum Approach Distances - The employer shall ensure that no employee approaches or takes any conductive object closer to exposed energized parts than set forth in 29 CFR 1910.269 Tables R-6 through R-10 unless:

1. The employee is insulated from the energized part.
2. The energized part is insulated from the employee and from any other conductive object at a different potential.
3. The employee is insulated from any other exposed conductive object, as during live-line bare hand work.

D. Working Position - The employer shall ensure that each employee, to the extent that other safety related conditions at the worksite permit, works in a position from which a slip or shock will not bring the employee's body into contact with exposed, un-insulated parts energized at a potential different from the employee.

E. Making Connections - The Schmid employees shall ensure connections are made as follows:

1. In connecting de-energized equipment or lines to energize circuit by means of a conducting wire or device, an employee shall first attach the wire to the de-energized part.
2. When disconnecting equipment or lines from the energized circuit by means of a conducting wire or device, an employee shall remove the source first.
3. When lines or equipment are connected to or disconnected from energized circuits, loose conductors shall be kept away from exposed energized parts.

F. Apparel - When work is performed within reaching distance of exposed energized parts of equipment, the employer shall ensure that each employee removes or renders nonconductive all exposed conductive articles, such as key or watch chains, rings, or wrist watches or bands, unless such articles do not increase the hazards associated with contact with energized parts.

G. The employer shall ensure that each employee who is exposed to the hazards of flames or electric arcs does not wear clothing that, when exposed to flames or electric arcs could increase the extent of injury that would be sustained by the employee.

H. Fuse Handling - When fuses must be installed or removed with one or both terminals energized at more than 300 volts or with exposed parts energized at more than 50 volts, the employer shall ensure that tools or gloves rated for the voltage are used. When expulsion-type fuses are installed with one or both terminals energized at more than 300 volts, the employer shall ensure that each employee wears eye protection.

2. **DE-ENERGIZED LINES AND EQUIPMENT**

A. A designated employee shall make a request of the system operator to have the particular section of line or equipment de-energized. The designated employee becomes the employee in charge and is responsible for the clearance.

B. All switches, connectors, jumpers, taps, or other means through which known sources of electric energy may be supplied to the particular lines and equipment to be de-energized shall be opened.

C. Such means shall be rendered inoperable, unless its design does not so permit, and tagged to indicate that employees are at work.

1. Automatically and remotely controlled switches that could cause the opened disconnecting means to close shall also be tagged at the point of control.
2. The automatic and remote control feature shall be rendered inoperable, unless its design does not so permit.
3. Tags shall prohibit operation of the disconnecting means and shall indicate that employees are at work.

D. Protective Grounds shall be installed as required:

1. Only after all protective grounds have been removed, after all crews working on the lines or equipment have released their clearance, after all employees are clear of the lines and equipment, and after all protective tags have been removed from a given point of disconnection may action be initiated to reenergize the lines or equipment at the point disconnection.

E. Grounding for the Protection of Employees - This section applies to the grounding of transmission and distribution lines and equipment for the purpose of protecting employees.

1. General for the employees to work lines of equipment as de-energized, the lines or equipment shall be de-energized and shall be grounded. However, if the employer can demonstrate that installation of a ground impracticable or that conditions resulting from the installation of a ground would present greater hazards than working without grounds, the lines and equipment may be treated as de-energized provided all of the following conditions are met:
    a) The lines and equipment have been de-energized,
    b) There is no possibility of contact with another energized source,
    c) The hazard of induced voltage is present.

2. Equipotential Zone - Temporary protective grounds shall be placed at such locations and arranged in such a manner as to prevent each employee from being exposed to hazardous differences in electric potential.

3. Protective grounding equipment shall be capable of conducting the maximum fault current that could flow at the point of grounding for the time necessary to clear the fault. The equipment shall have a capacity greater than or equal to that No. 2 AWG cooper.

a) Protective grounds shall have an impedance low enough to cause immediate operation of protective devices in case of accidental energized of the lines or equipment

b) Testing - Before any ground is installed, lines and equipment shall be tested and found absent of nominal voltage, unless a previously installed ground is present

c) Order of Connection - When a ground is to be removed, the grounding device shall be removed from the line or equipment using a live-line tool

d) Additional Precautions - When work is performed on a cable at a location remove from the cable terminal, the cable may not be grounded at the cable terminal if there is a possibility of hazardous transfer of potential should a fault occur

F. Safety Reference Points

1. Regardless of how many persons are present, workman or visitors, at a Substation or location of any High Voltage Equipment, one person must be in charge, and only one! This person must be trained and familiar with the equipment, safety requirements, and procedures for energizing/de-energizing.

a) Always wear the proper PPE (Personal Protective Equipment).

b) Always test your testers, before and after, each use.

c) Always remove all grounds from current carrying conductors before energizing. If you put it on take it off.

d) OSHA High Voltage proximity starts at 10 feet.

e) If you don't know, ASK.

SAFETY MUST NEVER BE COMPROMISED!

SECTION 27

ARC FLASH PROTECTION PROGRAM

1. PROTECTION AGAINST ARC FLASH

A. Policy - An arc flash is a dangerous condition associated with the release of energy caused by an electric arc. An arc flash is an explosion causing severe burns, injuries and/or death depending on the severity.

Most workers realize that electrical shock is potentially life threatening, but many do not understand that wearing clothing that is not flame resistant can result in severe harm or death if it is ignited in an electrical arc flash.

B. Purpose - While it is the policy of Schmid to de-energize the power source before performing any work on the system, we understand that at times it is necessary to be exposed to the energy source (i.e. Investigative work). Before the point of exposure, we need to protect the worker from a potential arc flash that is always possible due to the presence of a power source. The means of proper PPE and levels of protection are simplified with the use of fire resistant garments that meet the hazard risks.

Keep in mind that the use of these suits, are only needed when you are being exposed to energy, or you are attempting to tie-in or are making contact with the power source. Once the potential for an arc flash is either removed or isolated, and the worker is protected, the protective suit is no longer needed (i.e. the panel cover is back on).

It is the policy of Schmid that all employees use the following PPE in order to protect themselves against Arc Flash occurrences.

C. Exposure to <u>under</u> 600 volts:
1. Nomex full body jump suit
2. Properly rated gloves
3. Dielectric hard hat
4. Full amber face shield
5. Dielectric booties to slip over work boots

D. Examples of work performed at this level (examples not intended to be all inclusive of every type of work):
1. Removing any panel covers or barriers of energized equipment to perform investigative functions or inspections.
2. Working in a panel with the line side energized and the panel cover removed.
3. Installing a breaker into an energized electrical panel.
4. Pulling cables or wiring into energized panels.
5. Pulling or installing fuses into energized parts.

E. Exposure to <u>over</u> 600 volts:
1. The level of protection for 600 volts and above will be a full body 40cal. High Voltage Suit complete with a full Head Hood, Dielectric booties, and properly ratted High Voltage gloves.
2. Examples - Work performed at this level (examples not intended to be all inclusive of every type of work):

a) Removing any gear covers or barriers of energized equipment to perform investigative functions or inspections.

b) Installing protective blankets or insulating devices on buss work in an active High Voltage Substation.

c) Racking in a breaker into an energized electrical cabinet.

d) Pulling cables or wiring into energized switchgear.

e) Pulling or installing cut-outs on a utility pole.

3. Contact your Foreman or supervisor to obtain a Schmid Arc Flash Protection Kit which will have all of the above mentioned PPE. Check the kits before use to insure that all of the high voltage PPE has a current inspection certification. Do not use if it has expired.

SECTION 28

BENZENE AWARENESS PROGRAM

1. **REGULATORY STANDARD** OSHA - 29 CFR 1910.106 and 29 CFR 1926.55

2. **PURPOSE** - The Benzene Awareness Program is essential to the safety of all Schmid employees and to inform personnel of the dangers of Benzene.

3. **SYNONYMS** - Benzoyl, benzole, coal naphtha, cyclohexatriene, phene, phenyl hydride, pyrobenzol, (benzin, petroleum benzin, and benzene do not contain benzene).

4. **SCOPE -** Schmid has chosen to establish a Benzene Awareness Program for emergencies that could arise from exposure to Benzene.

5. **PHYSICAL AND CHEMICAL CHARACTERISTICS**

A. Benzene is a clear, colorless liquid with a distinctive sweet odor. Its boiling point is 176 degrees F and its flash point is 12 degrees F. The flammable limits in the air are 1.3 percent for the low end and 7.5 percent for the high end. Benzene is a flammable liquid. Its vapors can form explosive mixtures. All ignition sources must be controlled when Benzene is used, handled, or stored. Where liquid or vapor may be released, such areas shall be considered as hazardous locations (commonly found in petroleum refining sites, tank gauging, field maintenance, etc.).

B. Benzene vapors are heavier than air; thus the vapors may travel along the ground and be ignited by open flames or sparks at locations remote from the site at which Benzene is handled.

C. Benzene is classified as a 1 B flammable liquid for the purpose of conforming to the requirements of OSHA 29 CFR 1910.106. A concentration exceeding 3,250 ppm is considered a potential fire explosion hazard. Location where Benzene may be present in quantities sufficient to produce explosive or ignitable mixtures are considered Class I Group D for the purpose of conforming to the requirements of OSHA 29 CFR 1910.309.

6. **HEALTH EFFECTS**

A. Benzene is primarily an inhalation hazard. Systemic absorption may cause depression of the hematopoietic system, pancytopenia, aplastic anemia, and leukemia. Inhalation of high concentrations can affect the central nervous system function. Aspiration of small amounts of liquid Benzene immediately causes pulmonary edema and hemorrhage of pulmonary tissue. There is some absorption through the skin. Absorption may be more rapid in the case of abraded skin, and Benzene may be more readily absorbed if it is present in a mixture or as a contaminant in solvents that are readily absorbed. The defatting action of Benzene may produce primary irritation due to repeated or prolonged contact with the skin. A high concentration is irritating to the eyes and the mucous membranes of the nose, and respiratory tract.

B. Direct skin contact with Benzene may cause erythema. Repeated or prolonged contact may result in drying, scaling dermatitis, or development of secondary skin infections. I addition, there is Benzene absorption through the skin. Local effects of Benzene vapor or liquid on the eye are slight. Only at very high concentrations is there any smarting sensation in the

eye. Inhalation of high concentrations of Benzene may have an initial stimulatory effect on the central nervous system characterized by exhilaration, nervous excitation, and/or giddiness, followed by a period of depression, drowsiness, or fatigue. A sensation of tightness in the chest accompanied by breathlessness may occur and ultimately the victim may lose consciousness. Tremors, convulsions and death may follow from respiratory paralysis or circulatory collapse in a few minutes to several hours following severe exposure.

C. The detrimental effect on the blood forming system of prolonged exposure hematopoietic system is the chief target for Benzene's toxic effects that are manifested by alterations in the levels of formed elements in the peripheral blood. These effects have occurred at concentrations of Benzene that may not cause irritation of mucous membranes, or any morbidity is varied, often not readily noticed and non-specific. Subjective complaints of headache, dizziness, and loss of appetite may precede or follow clinical signs. Rapid pulse and low blood pressure, in addition to a physical appearance of anemia, may accompany a subjective complaint of shortness of breath and excessive tiredness. Bleeding from the nose, gums, or mucous membranes, and the development of purpuric spots (small bruises) may occur as the condition progresses. Clinical evidence of leukemia, anemia, and thrombocytopenia, singly or in combination, has been frequently reported among the first signs.

D. Bone marrow may appear normal, aplastic, or hyperplastic, and may not, in all situations, correlate with peripheral blood forming tissues. Because of variations in the susceptibility to Benzene morbidity. There is no typical blood picture. The onset of effects of Benzene exposure may be delayed for many months or years after the actual exposure has ceased and identification or correlation with Benzene exposure must be sought out in the occupational history.

7. **GENERAL REQUIREMENTS** - Schmid will establish Benzene operational procedures through the use of this document.

A. Facility Evaluation - This employer shall evaluate our facility(s) to determine if any work area meets the criteria for designation as a Regulated Benzene Hazard Area.

B. Regulated Areas - This employer shall establish a regulated area wherever the airborne concentration of benzene exceeds or can reasonably be expected to exceed the permissible exposure limits, either the 8 hour time weighted average exposure of 1 ppm or the short-term exposure limit of 5 ppm for 15 minutes.

C. Benzene liquid is highly flammable and vapors may form explosive mixtures in air. Fire extinguishers must be readily available. Smoking is prohibited in areas where benzene is used or stored.

8. **EMPLOYEE NOTIFICATION AND SIGNAGE -** This employer shall post signs at entrances to regulated areas. The signs shall bear the following legend:

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

9. **CONTAINERS** - This employer shall ensure that labels or other appropriate forms of warning are provided for containers of benzene within the workplace. There is no requirement to label pipes. The labels shall comply with the requirements of OSHA 29 CFR 1910.1200 (Hazard Communication Standard) and in addition shall include the following legend:

DANGER
CONTAINS BENZENE
CANCER HAZARD

10. **TRAINING** - The company will determine whether training required for specific jobs will be conducted in a classroom or on-the-job. The degree of training provided shall be determined by the complexity of the job and the Benzene exposure hazards associated with the individual job.

A. Initial Training Prior to job assignment, this employer shall provide training to ensure that the hazards associated with Benzene are understood by employees and that the knowledge, skills and personal protective equipment required are acquired by employees. The training shall as a minimum include the following:

1. Each authorized employee shall receive training in the recognition of applicable hazards involved with the particular job and job site, as well as the methods and means necessary for safe work.
2. The specific nature of the operation which could result in exposure to Benzene.
3. The purpose, proper selection, fitting, use and limitation of personal protective equipment (PPE).
4. The adverse health effects associated with excessive exposure to Benzene.
5. The engineering controls and work practices associated with the employee's job assignment, including training of employees to follow relevant good work practices.
6. The contents of any compliance plan in effect.
7. The requirements of the Hazard Communication Standard under OSHA 29 CFR 1910.1200.
8. The employee's right of access to records under OSHA 29 CFR 1910.1020.
9. The medical surveillance program in place at this facility used to determine Benzene exposure.
10. Scheduled refresher training will be conducted on a/n _____ basis.

11. **RETRAINING**

A. Retraining shall be provided for all affected employees as a minimum whenever:
1. There is a change in job assignments.
2. There is a change in personal protective equipment.
3. There is a change in equipment that presents a new hazard.
4. There is a change in processes that presents a new hazard.
5. Their work takes them into hazardous or regulated area.
6. There is a change in Benzene safety procedures.
7. Safety procedure fails resulting in a near-miss, illness, or injury.

B. Additional retraining shall also be conducted whenever a periodic inspection reveals, or whenever this employer has reason to believe, that there are deviations from or inadequacies in the employee's knowledge of known hazards, or use of equipment or procedures. The retraining shall reestablish employee proficiency and introduce new equipment, or revised control methods and procedures, as necessary.

C. Certification - This employer shall certify that employee training has been accomplished and is being kept up to date. The certification shall contain a synopsis of the training conducted, each employee's name, and dates of training.

12. **MONITORING AND MEDICAL SURVEILLANCE** - This employer shall monitor our workplace and work operations to determine accurately the airborne concentrations of benzene to which employees may be exposed.

A. Initial monitoring - Initial monitoring will be completed within 30 days of the introduction of benzene into the workplace.

B. Periodic monitoring and monitoring frequency - If the monitoring reveals employee exposure at or above the action level but at or below the TWA, the monitoring will be repeated each such employee at least every year.

C. Exposures above TWA - If the monitoring reveals employee exposure above the TWA, the monitoring will be repeated for each such employee at least every 6 months.

D. Exposures at or below the TWA - The monitoring schedule may be reduced from every 6 months to annually for any employee for whom two consecutive measurements taken at least 7 days apart indicate that the employee exposure has decreased to the TWA or below, but is at or above the action level.

E. Termination of monitoring - If the initial reveals employee exposure to be below the action level, the monitoring may be discontinued for that employee, except as otherwise required.

13. **SPILL AND LEAK PROCEDURES** - Spills and leaks will be under the supervision of the Supervisor. The following apply:

A. Persons not wearing protective equipment and clothing will be restricted from areas of spills or leaks until cleanup has been completed.

B. Emergency Containment - Benzene exposure can be hazardous. Only authorized and trained emergency response personnel should attempt containment. If you are not trained in containment of Benzene, evacuate the area in accordance with established procedures. If Benzene is spilled or leaked the following steps as a minimum should be taken:

1. Remove all ignition sources.
2. Ventilate the area of the spill or leak to disperse vapors.
3. If possible, stop flow of liquid, allow vaporizing.
4. Use containment equipment such as dikes, compatible absorbent materials, etc.
5. Use non-sparking tools and explosion proof equipment at all times in the spill area.
6. Employer should be aware of Owners contingency plan provisions. Employees must be informed where benzene is used in host facility and aware of additional plant safety rules.

14. **EMERGENCY FIRST AID PROCEDURES** - In the event of an emergency, institute first aid procedures and send for first aid or medical assistance in accordance with local procedures. Dial 911 for emergency response personnel.

A. Eye Exposure - Wash immediately with large amounts of water for at least 15 minutes. Lifting the lower and upper lids occasionally, get medical attention as soon as possible.

B. Skin Exposure - Immediately flush with copious amounts of water. Remove any clothing contaminated, and flush exposed skin areas, get medical attention as soon as possible.

C. Swallowing Exposure - If benzene has been swallowed and the patient is conscious, do not induce vomiting. Call for medical assistance or a doctor immediately.

D. Respiratory Exposure - Get the victim to open, fresh air immediately. If breathing has stopped perform CPR. Keep the victim warm and at rest. Get medical attention as soon as possible.

E. Rescue Considerations - Don’t become a second victim. Move the affected person from the hazardous area. If the exposed person has been overcome, initiate local emergency notification procedures. Never enter any vessel or confined space where the benzene concentration might be high enough to displace air or create an explosive atmosphere without proper training, equipment and procedures. Understand the facility’s emergency rescue procedures and know the locations of rescue equipment before the need arises.

15. **PROTECTIVE CLOTHING AND PERSONAL PROTECTIVE EQUIPMENT (PPE)** - Where engineering controls, administrative controls, and job hazard analyses do not eliminate all job hazards, employees will (where appropriate) wear personal protective equipment (PPE).

A. These include items such as caps, hair nets, face shields, safety goggles, glasses, hearing protection, foot guards, gloves, sleeves, aprons, respirators etc. Supervisors will ensure that equipment selected will meet the following requirements:

1. It will be appropriate for the particular hazard.
2. It will be maintained in good condition.
3. It will be properly stored when not in use, to prevent damage or loss.
4. It will be kept clean, fully functional and sanitary.

B. Hazards associated with wear of protective clothing, PPE, personal clothing and jewelry. Protective clothing and PPE can present additional safety hazards. Supervisors will ensure workers wear appropriate clothing and PPE. These items will be worn so as not create additional hazards:

1. Personal clothing and jewelry. Personal clothing and jewelry will be monitored by the immediate supervisor. Clothing or jewelry that could become entangled in tools, equipment or machinery or of an excessively flammable nature will be prohibited

C. Respirators are required for those operations in which engineering controls or work practice controls are not feasible to reduce exposure to the permissible level. If it can be documented that benzene is present in the workplace less than 30 days a year, respirators may be used in lieu of engineering controls. If you experience difficulty breathing while wearing a respirator, you may request a positive pressure respirator. Contact your supervisor immediately.

D. Protective Clothing - You must wear appropriate protective clothing (such as boots, gloves, sleeves, aprons, etc.) over any parts of your body that could be exposed to liquid benzene.

E. Eye and Face Protection - You must wear splash-proof safety goggles if it is possible that benzene may get into your eyes. In addition, you must wear a face shield if your face could be splashed with benzene liquid.

F. Documentation - PPE requirements will be documented on a Protective Measures Determination form and properly filed.

16. **TOOL SELECTION, EVALUATION AND CONDITION** - The greatest hazards posed by tools usually result from misuse and/or improper maintenance. Tool selection sometimes is not considered a priority when arrangements are made to begin work. All employees will consider the following when selecting tools:

A. Is the tool correct for the type work to be performed?

B. Are grounding methods sufficient when working in wet conditions?

C. Does the tool create sparks or heat? Has this been considered when working around flammable substances?

D. Are tools stored properly when not being used?

E. Have tools been modified beyond the manufacturers specification? If so, have the modifications been approved by a competent person?

17. **REGULATORY LIMITS**

A. The permissible exposure limits for Benzene are as follows:

1. Airborne - The maximum time-weighted average (TWA) exposure limit is 1 part of Benzene vapor per million parts of air (1 ppm) for an 8 hour workday and the maximum short-term exposure limit (STEL) is 5 ppm for any 15 minute period

2. An airborne concentration of benzene of 0.5 parts per million (ppm) calculated as an 8 hour time-weighted average.

SECTION 29

HEXAVALENT CHROMIUM – CHROMIUM VI PROGRAM

1. **REGULATORY STANDARD** – OSHA References - 29 CFR 1910.1026 and 29 CFR 1926.1126

The purpose of this program outlines the requirements that Schmid employees and subcontractors must comply with when implementing a program to evaluate and control worker exposure to hexavalent chromium (Cr VI). The program provides information and the process to follow to recognize, evaluate, and control employee exposure to Cr VI at Schmid project locations.

OSHA References

A. Occupational Exposure to Hexavalent Chromium – Federal Register Number 71:10099-10385, U.S. Department of Labor, Final Rule, OSHA 29 CFR 1910.1026 and OSHA 29 CFR 1926.1126.

B. U.S. Department of Labor, Occupational Safety and Health Administration (OSHA), Final Rule, OSHA 29 CFR 1910.1026, and OSHA 29 CFR 1926.1126.

2. **SCOPE AND APPLICATION**

A. This program applies enterprise wide to call Schmid legal entities their employees, subcontractors, and lower-tier subcontractors that operate in the United States.

B. Where states OSHA agencies may have more stringent requirements, contact the appropriate Health and Safety Lead to address these specific requirements.

C. This program applies when employees may be exposed to Cr VI due to the following activities:

1. Schmid employees who may be exposed to Cr VI when performing hot work such as welding on stainless steel or Cr VI painted surfaces, traffic painting or paint removal containing Cr VI, refractory brick restoration, or soil disturbance activities such as drilling or from heavy equipment moving on soils containing Cr VI soils.
2. Schmid workers who may be exposed to Cr VI when working at project sites or in proximity to Cr VI related operations such as electroplating, painting (aerospace and auto body repair), chromate pigment and chemical production, chromium dye and catalyst production, glass manufacturing, or plastic colorant production (Schmid subcontractor, or third-party contractor employees).
3. Schmid provides oversight of subcontractor's activities where worker exposure to Cr VI can occur.

D. Applicable Enterprise Programs Other programs that may be applicable to worker exposure to Cr VI include the following:

1. Abrasive blasting on surfaces containing Chromium VI creating airborne dispersion of Chromium VI compounds and resulting in worker exposure.
2. Contracts, subcontracts, and HSE management practices for subcontractor workers who perform tasks that could result in exposure to Cr VI.
3. Operations or tasks involving exposure to Cr VI in confined spaces.

4. Worker decontamination when Cr VI materials may adhere to workers' skin or clothing or to personal protective equipment worn by them.
5. Disposal of personal protective equipment (PPE) or other debris contaminated by chromium compounds.
6. Demolition where materials containing Cr VI could become airborne and present a potential worker exposure.
7. Exposure assessment for employee exposure to Cr VI.
8. Medical monitoring and access to records for employees exposed to Cr VI.
9. Wearing respiratory protection as a control measure to minimize employee exposure to Cr VI acceptable concentrations.
10. Employee training on the hazards and exposure prevention measures to Cr VI.

3. DEFINITIONS

A. Action Level (AL) - The action level for implementation of this program is a concentration of airborne Cr VI of 2.5 micrograms per cubic meter (2.5µg/m^3) of air calculated as an 8 hour time-weighted average (TWA).

B. Chromium VI or Hexavalent Chrome Chromium with a valence of positive six, in any form and in any compound.

C. Emergency Release - Any activity that results or is likely to result in an uncontrolled release of Cr VI. If an incidental release of Cr VI (measured at or below the Permissible Exposure Limit) can be controlled at the time of release by workers in the immediate release area, it is not an emergency.

D. Worker Exposure - The exposure to airborne Cr VI that would occur if the worker was not using respiratory protection.

E. High-Efficiency Particulate (HEPA) Filter that is at least 99.97 percent efficient in removing mono-dispersed particles of 0.3 micrometers (µg) in diameter or larger.

F. Historical Monitoring Data - Hexavalent chromium exposure assessment monitoring conducted prior to May 30, 2006, obtained during work operations conducted under workplace conditions closely resembling the processes, types of material, control methods, work practices, and environmental conditions in the employer's current operations.

G. Objective Data Information such as air monitoring data from industry wide surveys or calculations based on the composition or chemical and physical properties of a substance demonstrating the worker exposure to Cr VI associated with a particular product or material or a specific process, operation, or activity. The data must reflect workplace conditions closely resembling the processes, types of material, control methods, work practices, and environmental conditions in the employer's current operations.

H. Permissible Exposure Limit (PEL) - The level of worker exposure to an airborne concentration of Cr VI, without regard to the use of respirators, at 5 micrograms per cubic meter of air (5 µg/m^3) calculated as an 8 hour time-weighted average (TWA) that cannot be exceeded.

4. **ROLES AND RESPONSIBILITIES** - The following sections outline the roles and responsibilities for individuals when applying this program.

A. Health and Safety (H&S) Leads are responsible for assisting Project Managers in implementing this program for all projects where there is a potential for worker exposure to Cr VI. The H&S Lead has the authority to approve deviations from this standard to accommodate additional domestic and international requirements.

B. The Schmid Project Manager (PM) is responsible for implementing this procedure and providing adequate resources (budget and staff) for project-specific implementation of the H&S management process on projects where there is a potential for worker exposure to Cr VI. The PM has overall H&S management responsibility, but may delegate specific tasks to other project staff. The PM retains ultimate H&S responsibility for the project.

C. The Schmid On-Site Manager is responsible for all field operations onsite and is typically the Construction Manager (CM), Site Superintendent, Site Supervisor, or Field Team Leader. The Site Manager is directly responsible for implementing all aspects of the project H&S plan and applicable requirements of this program.

D. The Responsible Health and Safety Manager (HSM) is responsible to provide health and safety technical guidance and support to the project. The HSM prepares and /or approves the Schmid project H&S plan, develops the Cr VI sampling plan, conducts the personal protective equipment (PPE) evaluation for skin, eye, and respiratory hazards to Cr VI, reviews subcontractor H&S plans and submittals, conducts project H&S audits, and provides H&S support and guidance to the project.

E. The Site Safety Coordinator (SSC) is either the Site Manager or is someone designated by the Site Manager to implement the project H&S plan. The Site Safety Coordinator ensures that the appropriate elements of this program are implemented.

5. **REQUIREMENTS** - The following requirements outline the mandatory criteria that each Schmid employee must comply with when implementing this program using their policies, procedures, processes, training, and contracting documents.

A. Subcontractor Management:

1. Subcontractor H&S responsibilities are expressly defined through the subcontract terms and conditions. Subcontractors must determine how to conduct their operations, in compliance with applicable H&S regulations and industry standards, and how to correct deficiencies. Schmid employees' shall not direct the means and methods of subcontractor operations.
2. Subcontractors are responsible and accountable for implementing these requirements and any additional requirements established in their own health and safety procedures as described in Schmid Health and Safety Program, Contracts, Subcontracts, and HSE&Q Practices. Subcontractors retain control over their practices, and Schmid oversight does not relieve them of their own responsibility for effective implementation and enforcement of H&S requirements.
3. The Subcontractor Health and Safety Procedure Criteria - Cr VI provides the minimum criteria for these safety procedures. These criteria may be used by the H&S staff to

review submitted subcontractor safety procedures when Schmid is performing oversight of subcontractor's operations.

B. Exposure Determination

1. Initial exposure monitoring must be conducted to document worker breathing-zone exposures over the course of a full shift. A representative 8-hour TWA sample shall be collected to determine employee exposure for each job classification in each work area.
2. Air monitoring will be performed at the beginning of each job task.
3. Exposure determinations must follow the current, accepted sampling and analytical method equivalent to that used by OSHA.
4. Sample media used for Cr VI monitoring will be analyzed using an industrial hygiene laboratory accredited by the American Industrial Hygiene Association (AIHA). An equivalent laboratory accreditation can be substituted in countries that do not have an AIHA-accredited industrial hygiene laboratory.
5. Periodic monitoring of workers is required at least every 6 months when the initial monitoring indicates TWA results are equal to or greater than the Action Level (AL) but below the Permissible Exposure Limit (PEL).
6. When initial monitoring results are greater than the PEL, additional periodic monitoring, at least quarterly, for each worker involved is required.
7. Periodic monitoring every 6 months or quarterly may be halted when two consecutive samples taken at least 7 days apart are equal to or below the AL.
8. When monitoring results fall below the AL, monitoring may be suspended.
9. Additional monitoring is required when there has been a change in production process, control equipment, personnel, or work practices that may result in new or additional exposures.
10. A performance oriented option may be used to determine the initial 8 hour TWA exposure for each worker on the basis of any combination of air monitoring data, historical monitoring data, or objective data sufficient to accurately characterize exposure to Cr VI.
11. Workers shall be informed in writing of exposure monitoring results within 5 working days after receipt of the results.
12. When the PEL has been exceeded, notification to the affected worker shall include the control measures utilized to reduce the exposure to below the PEL.

C. Demarcation of Regulated Areas - Work areas where worker exposure to Cr VI is or can reasonably be expected to exceed the OSHA Permissible Exposure Limits (PEL) must be demarcated and access limited to only workers authorized to enter.

D. Methods of Compliance - Engineering and work practice controls must be applied to reduce the Cr VI worker exposure level to below the OSHA Permissible Exposure Limits (PEL) unless it can be demonstrated that such controls are not feasible. Rotating employees to different jobs shall not be used to achieve compliance with the PEL. Methods of compliance in the hierarchy of controls include the following:

1. Substitution - gas tungsten arc welding (GTAW) instead of shielded metal arc welding (SMAW) or flux cored arc welding (FCAW),
2. Engineering controls - mechanical ventilation to remove fumes from the breathing zone,

3. Administrative controls - safe work practices for the worker on proper positioning to minimize fume trail in their breathing zone, either through positioning upwind in an open area or in proper alignment with ventilation controls,
4. Personal protective equipment (PPE) – use of respiratory protection as the last resort in reducing exposure or as an interim measure until substitution can be applied or engineering controls installed.

E. Respiratory Protection will be provided by the employer and worn by the worker sufficient to reduce the exposure to below the Cr VI action level. Respiratory protection will be used only as a last resort to ensure that worker exposure to Cr VI is maintained below the action level, or as an interim measure while applying substitution of materials or processes, implementation of work practice controls, or installation of mechanical ventilation. When employee exposures are above the PEL for no more than 30 days per year (12 consecutive months) from a particular process or task, respiratory protection can be primarily relied upon to ensure employee exposure is maintained below the PEL. The elements of the respiratory protection program must comply with the Schmid Respiratory Protection, and OSHA 29 CFR 1910.134, Respiratory Protection. Key elements for an appropriate respiratory protection program include the following:

1. Exposure assessment to determine the appropriate respiratory protection to be selected with the required protection factor and fit factor.
2. Medical surveillance for workers to determine their ability to wear respiratory protection.
3. Fit testing of workers to identify which model and type of respiratory protection can be worn.
4. Training workers on the how to wear, use, clean and maintain their respiratory protection equipment.
5. Respirator cartridge change-out guidelines for workers.
6. Periodic evaluation of the respiratory protection program by the assigned H&S representation.

F. Personal Protective Equipment (PPE) and Work Clothing shall be provided to workers where an eye or skin hazard may exist to Cr VI at no cost to them. The elements of the PPE and work clothing program must comply with the Schmid Personal Protective Equipment and OSHA 29 CFR 1910.132, 7 General Requirements for Personal Protective Equipment, and OSHA 29 CFR 1910.133, Eye and Face Protection. Key elements for an appropriate protective work clothing program include the following:

1. Evaluation by the HSM of work tasks to identify the appropriate type of PPE and work clothing.
2. Providing the appropriate PPE and work clothing in a variety of sizes and styles.
3. Training workers on wearing, using, cleaning, and maintaining PPE and work clothing.
4. Ensuring that workers do not remove contaminated PPE or work clothing from the worksite.
5. Providing a service to launder reusable work clothing.
6. Repair or replace as needed.

G. Hygiene Areas and Practices - Where work clothing is required to be worn in place of street clothing to prevent skin exposure to Cr VI, change rooms and washing facilities must be provided. Change rooms must include separate storage facilities for work clothing and for street clothes. Washing facilities must be readily accessible to workers and must be used by them at the end of the work shift and prior to eating, drinking, smoking, chewing tobacco or gum, applying cosmetics, or using the toilet. An area on the worksite must be designated to be free of Cr VI for workers to consume food or beverages.

H. General Work Practices and Housekeeping - Work areas or project sites where Cr VI can potentially expose workers must implement and follow work practices to maintain acceptable housekeeping conditions to minimize contact or exposure. General work practices and housekeeping must include the following.

1. All surfaces must be maintained as clean as practicable to minimize accumulation of Cr VI containing substances, dust or particles.
2. All spills and releases of Cr VI containing material must be cleaned up promptly.
3. Surfaces contaminated with Cr VI must be cleaned with HEPA filter vacuuming or equivalent methods or practices that minimize the potential for worker exposure.
4. Avoid using compressed air, dry shoveling, dry sweeping, or dry brushing, and use only when a HEPA filter vacuum system or equivalent method has been tried and found to be not effective.
5. Collection of waste, scrap, debris, or other materials contaminated or containing Cr VI must be in impermeable containers or bags and labeled meeting hazard communication requirements described in Schmid Hazard Communication, or OSHA 29 CFR 1910.1200, Hazard Communication.
6. Waste containing significant amounts of chromium may be subject to hazardous waste regulations and the corresponding generation, treatment and disposal requirements.

I. Medical Surveillance - Workers who are or will be potentially exposed to airborne Cr VI above the action level for at least 30 days per year, without regard to respirator use, will participate in their employer's Cr VI medical surveillance program. Further participation in periodic Cr VI medical surveillance will be based on exposure conditions (such as an emergency or when a worker shows signs or symptoms of exposure), annually, or within a specified frequency determined by the company consulting physician (or equivalent), and at termination of employment. Subcontractors are responsible for their workers receiving medical surveillance for Cr VI as required by regulatory requirements, contract, or their own company's requirements.

J. Communication of Hazards - Information concerning Cr VI hazards will be communicated according to the requirements of the OSHA Hazard Communications Standard and the OSHA Cr VI Standard including, but not limited to, the requirements concerning warning signs and labels, safety data sheets (SDSs), and employee information and training. The entrance to regulated areas must be posted with signs that read **Chromium VI Regulated Area - Authorized Personnel Only.** In addition to the posting requirements, owners, contractors, and other personnel working in the area must be notified.

All storage or shipping containers shall be labeled with the following **Danger – Contains Cr VI - Cancer Hazard - Harmful if Inhaled or Swallowed - Use Only with Adequate Ventilation or Respiratory Protection**.
A copy of this program and the OSHA Cr VI Standards (General Industry and Construction) will be made available to all affected project workers.

Additional communication requirements are described below in Section 6 Training Requirements.

6. TRAINING REQUIREMENTS

A. Workers who may be exposed to airborne Cr VI above the action level or anticipate working on projects where they could be exposed to airborne Cr VI above the action level, or to soil that contains elevated levels of Cr VI, must complete initial Cr VI exposure training. This training covers the following information:

1. Where Cr VI is typically encountered at Schmid projects.
2. The regulatory requirements, exposure limits, potential hazards including toxicity and physical characteristics, and medical monitoring requirements.
3. For site specific Cr VI hazards, discussion on the location and tasks associated with potential exposure and associated control measures.
4. Information contained in the site specific Health, Safety, and Environmental Protection Plan or Job Hazard Analysis created for the project.
5. Quantity, location, manner of use, storage, sources of exposure, and the specific nature of operations that could result in exposure to Cr VI, as well as any necessary protective steps.
6. Purpose, proper use, and limitation of respirators.
7. Purpose and a description of the medical surveillance program.
8. Engineering controls and work practices associated with the employee's job assignment.
9. A review of this program.

B. Each worker must be provided with a copy of the OSHA Chromium Standard (General Industry and/or Construction) and appendices if requested.

C. Subcontractors are responsible for complying with all applicable training requirements relating to Cr VI exposure and for providing the training necessary to complete their tasks safely.

D. Schmid will provide initial training prior to or at each initial assignment. Schmid will ensure the training is understandable and ensure each employee can demonstrate knowledge of the health hazards associated with Cr VI exposure, location, manner of use, and release of chromium in the workplace; engineering controls and work practice controls; purpose, proper selection, fitting, proper use and limitations of respirators and protective clothing; emergency procedures; measures employees can take to protect themselves from exposure; purpose and description of medical surveillance program; contents of the standard. Schmid will have readily available without cost to all affected employees.

E. Schmid will document all employees training.

7. RECORDKEEPING

A. An accurate record of all worker personal air sampling and other air monitoring related to determining Cr VI exposure for Schmid employees must be completed and maintained that includes the following:

1. Industrial hygiene sampling surveys.
2. Specific information on the sample date, worker(s) sampled, job classification, process or task sampled, materials used, PPE worn, sample duration, air sampling, and analytical method.

B. For historical monitoring data, an accurate record of the determination must include the following information:

1. Confirmation that the data was collected using acceptable sampling and analytical methods.
2. Description of the process that matches the task, conditions, materials, equipment, and process for which the exposure is being determined.

C. For objective data, an accurate record of information that is relied upon to determine worker exposure must include the following information:

1. The type of chromium-containing material.
2. Description of the process, activity or operation.
3. Other relevant information used to support a comparable exposure assessment.

D. Exposure assessment records related to Cr VI, including worker personal air sampling, historical monitoring data, and objective data must be maintained for a minimum of 30 years. Copies of exposure assessment records for Schmid employees are to be forwarded to the Schmid HR Manager.

E. Medical monitoring records related to Cr VI must be maintained for each employee for 30 years beyond their duration of employment. Medical monitoring records will be retained in the employee's medical file and maintained by the Schmid occupational health care provider.

Cr VI FACT SHEET

Uses and Occurrences
Chromium is a naturally occurring element in rocks, animals, plants, soil and volcanic gases. Chromium occurs in the environment predominantly in one of two valence states.

• Trivalent (Cr III), which occurs naturally and is an essential nutrient, and

• Hexavalent chromium (Cr VI), which, along with the less common metallic chromium (Cr 0), is most commonly produced in plating processes

The major industrial sources of Cr VI compounds are chromate pigments in dyes, paints, inks, and plastics; chromates added as anti-corrosive agents to paints, primer, and other surface coatings; chrome plating by depositing chromium metal onto an item's surface using a solution

of chromic acid; particles released during smelting of Ferro-chromium ore; fumes from welding stainless steel or nonferrous chromium alloys; and as an impurity in Portland cement.

Physical Characteristics

Appearance:	Dark red flakes or powder
Odor:	None
Flammable:	Non-combustible, solid, but will accelerate the burning of combustible materials
Flash Point:	None
Flammable Range:	None
Specific Gravity:	2.7 for Cr VI
Stability:	Stable
Incompatibilities:	Reducing and oxidizing agents, acetic acid
Melting point:	1907°C or 3465°F for Cr
Boiling point:	2671°C or 4840°F for Cr

Signs and Symptoms of Exposure

Short term (Acute): Coughing, sneezing, chest pain, breathing difficulty, itching and burning sensation to skin and lungs.

Long term (Chronic): Allergic (asthma like symptoms) respiratory reaction, skin and eye irritation, nosebleeds, contact dermatitis, allergic like skin reaction, ulceration and perforation of the nasal septum

Modes of Exposure

Inhalation:	Dusts and fumes
Skin Absorption:	Liquid
Ingestion:	Dusts and liquids

Exposure Limits

Action level:	2.5 micrograms per cubic meter (µg/m³)
PEL:	5 µg/m³

STEL: None

TLV: 5 µg/m³

Exposure Level vs. Regulatory Requirements

EXPOSURE LEVEL (EL)	REGULATORY REQUIREMENTS
EL < AL	Maintain exposure as low as reasonably achievable
AL > EL, EL < PEL	Implement portions of the OSHA Cr VI standard and Training
EL > PEL	Implement all portions of the OSHA Cr VI Standard including training, medical surveillance, engineering controls, establishment of work areas, etc.

PPE

Eye: Safety glasses

Skin: Chemical protective gloves and body protection

Respiratory: Air-purifying respirators and supplied-air respirators, depending on the exposure, and a PAPR if requested by the worker

First Aid

Inhalation: Move to fresh air; seek medical attention promptly

Skin: Quick drenching with water; wash skin with soap and water; seek medical attention promptly

Eyes: Flush with water for 15 minutes, lifting the lower and upper lids occasionally; seek medical attention promptly

Ingestion: Seek medical attention promptly

SECTION 30

HEAT AND COLD STRESS PROGRAM

1. INTRODUCTION

A. Working in extreme temperatures (hot or cold) can overwhelm the body's internal temperature control system. When the body is unable to warm or cool itself; heat or cold related stress can result. Heat and cold stress can contribute to adverse health effects which range in severity from discomfort to death.

OSHA does not currently have specific standards for heat or cold stress. However, the OSHA Act of 1970 General Duty Clause (Section 5(a)(1)) states that **Each employer shall furnish to each of their employees employment and a place of employment which are free from recognized hazards that are causing or are likely to cause death or serious physical harm to their employees**.

B. Responsibility

1. Schmid Safety Director shall maintain, review and update this program as needed. They shall also provide monitoring (upon request) and assist employees with the development of procedure to minimize the adverse effects of heat and cold stress in the workplace

2. All Schmid Supervisors shall:

a) Review and comply with the provisions outlined in the program.

b) Ensure all employees are properly trained before working in extreme temperature conditions.

c) Assess the day-to-day heat or cold stress on employees.

d) Assess employees work load and assigning work and rest schedules as needed.

e) Ensure all employees have the appropriate personal protective equipment (PPE) prior to working in extreme temperature conditions.

f) Ensure employees are familiar with this safety program.

3. All Schmid Employees shall:

a) Review and comply with the provisions outlined in this program.

b) Complete training before working in extreme temperature conditions.

c) Wear the appropriate PPE.

d) Report heat and cold stress concerns to their supervisor.

C. Heat Related Illnesses - Signs, Treatment and Prevention:

1. While working in hot weather conditions, an employee's body may not be able to maintain a normal temperature just by sweating. If this happens, heat-related illnesses may occur. The most common health problems caused by hot work environments include:

a) Heat Stroke - This is the most serious heat related effect. Heat stroke occurs when the body temperature increases above 140 degrees Fahrenheit. Signs and symptoms of heat stroke are confusion, loss of consciousness and lack of perspiration. This condition must be treated as a medical emergency and the employee must receive immediate medical attention.

b) Heat Exhaustion - Signs and symptoms of heat exhaustion include headache, nausea, dizziness, weakness, irritability, confusion, thirst, heavy perspiration and a body temperature greater than 110.4 degrees Fahrenheit. Employees experiencing heat exhaustion should be moved to a cool area, given fluids to drink and given cold compresses for

their head, face and neck. Employees should also be taken to a clinic or emergency room to be monitored by medical personnel.

c) Heat Cramps - Signs and symptoms of heat cramps include muscle pains usually caused by the loss of body salts/fluids. Employees should replace fluid loss by drinking water every 15 to 20 minutes.

d) Heat rash is caused by excessive perspiration and looks like a read cluster of pimples or small blisters. Heat Rash usually appears on the neck, upper chest, in the groin and in elbow creases.

e) Dehydration is a major factor in most heat disorders. Signs and symptoms of dehydration include increasing thirst, dry mouth, weakness or light-headedness, and darkening of the urine or a decrease in urination. Dehydration can be revered or put back in balance by drinking fluid that contains electrolytes that are lost during work related activities. Avoid caffeinated drinks.

2. While heat related illness are dangerous and potentially lift threatening, they can be prevented. Prevention methods include:

a) Acclimation is a process by which the physical processes of an employee's body adjusts to the environment over a period of time. Based on data obtained from OSHA, this process usually takes five to seven days. According to the AIHA, the process requires a consistent work level for at least two hours each day during the acclimation period in order for an employee to become acclimatized. Employees who are not adequately acclimatized to the heat may experience temporary heat fatigue resulting in decline in performance, coordination or alertness. They may also become irritable or depressed. This can be prevented through gradual adjustment to the hot environment.

b) Engineering Controls - For employees working indoors, the best way to prevent heat-related illness is to make the work environment cooler. Where and if possible, use air conditioning to cool the work area. Alternatively, increase the general ventilation as much as possible by opening windows or doors. When available, use cooling fans to aid in increasing ventilation.

c) Safe Work Practices - For employees working outdoors or working indoors without air conditioning or ventilation, take scheduled breaks in cool areas. Ensure there is plenty of cool water to drink and take water breaks as needed. Immediately report any problems to a supervisor. Supervisors should consider scheduling the hottest work for the coolest part of the day, assigning extra employees to high demand tasks, using work saving devices (e.g. power tools, hoists, or lifting aids) to reduce the body's work load. All employees should watch out for the safety of their coworkers.

d) The heat index is a single numeric value that uses both temperature and humidity to inform the employees on how the weather outdoors "feels". The higher the heat index, the hotter the weather feels.

Heat Index	Risk Level	Protective Measures
<91°F	Lower (Caution)	▪ Provide drinking water ▪ Ensure that adequate medical services are available ▪ Plan ahead for times when heat index is higher, including worker heat safety training ▪ Encourage workers to wear sunscreen **If workers must wear heavy protective clothing, perform strenuous activity or work in the direct sun, additional precautions are recommended to protect workers from heat-related illness.***
91°F to 103°F	Moderate	In addition to the steps listed above: ▪ Remind workers to drink water often (about 4 cups/hour)** ▪ Review heat-related illness topics with workers: how to recognize heat-related illness, how to prevent it, and what to do if someone gets sick ▪ Schedule frequent breaks in cool, shaded area ▪ Acclimatize workers ▪ Set up buddy system/instruct supervisors to watch workers for signs of heat-related illness **If workers must wear heavy protective clothing, perform strenuous activity or work in the direct sun, additional precautions are recommended to protect workers from heat-related illness.*** ▪ **Schedule activities at a time when the heat index is lower** ▪ **Develop work/rest schedules** ▪ **Monitor workers closely**
103°F to 115°F	High	In addition to the steps listed above: ▪ Alert workers of high risk conditions ▪ Actively encourage workers to drink plenty of water (about 4 cups/hour)** ▪ Limit physical exertion (e.g. use mechanical lifts) ▪ Have a knowledgeable person at the worksite who is well-informed about heat-related illness and able to determine appropriate work/rest schedules ▪ Establish and enforce work/rest schedules ▪ Adjust work activities (e.g., reschedule work, pace/rotate jobs) ▪ Use cooling techniques ▪ Watch/communicate with workers at all times **When possible, reschedule activities to a time when heat index is lower**

>115°F	Very High to Extreme	**Reschedule non-essential activity for days with a reduced heat index or to a time when the heat index is lower** **Move essential work tasks to the coolest part of the work shift; consider earlier start times, split shifts, or evening and night shifts. Strenuous work tasks and those requiring the use of heavy or non-breathable clothing or impermeable chemical protective clothing should not be conducted when the heat index is at or above 115°F.** If essential work must be done, in addition to the steps listed above: ▪ Alert workers of extreme heat hazards ▪ Establish water drinking schedule (about 4 cups/hour)** ▪ Develop and enforce protective work/rest schedules ▪ Conduct physiological monitoring (e.g., pulse, temperature, etc) ▪ Stop work if essential control methods are inadequate or unavailable.

*The heat index is a simple tool and a useful guide for employers making decisions about protecting workers in hot weather. It does not account for certain conditions that contribute additional risk, such as physical exertion. Consider taking the steps at the next highest risk level to protect workers from the added risks posed by:

- Working in the direct sun (can add up to 15°F to the heat index value)
- Wearing heavy clothing or protective gear

**Under most circumstances, fluid intake should not exceed 6 cups per hour or 12 quarts per day. This makes it particularly important to reduce work rates, reschedule work, or enforce work/rest schedules.

D. Cold Related Illnesses and Injuries; Signs, Treatment and Prevention:

1. During cold weather, an employee's body will use energy to maintain a normal internal body temperature. This will result in a shift of blood flow from employee's extremities (hands, feet, and legs) and outer skin to the employee's core (chest and abdomen). If this happens, cold-related illnesses and injuries may occur if exposed to cold conditions for an extended period of time. The most common health problems caused by cold work environments include:

a) Hypothermia is a potentially serious health condition. Hypothermia occurs when body heat is lost faster than it can be replaced. When the core body temperature drops to approximately 95 degrees Fahrenheit, the onset of symptoms normally begins. The employee may begin to shiver, lose coordination, have slurred speech, and fumble with items in the hand. The employee's skin will likely be pale and cold. As the body temperature continues to fall these symptoms will worsen and shivering will stop. Once the body temperature falls to around 85 degrees Fahrenheit severe hypothermia will develop and the person may become unconscious, and at 78 degrees Fahrenheit, vital organs may begin to fail. Treatment depends on the severity of the hypothermia. For cases of mild hypothermia move to warm area and stay active. Remove wet clothes and replace with dry clothes or blankets, cover the head. To promote metabolism and assist in raising internal core temperature drink a warm (not hot) sugary drink. Avoid drinks with caffeine. For more severe cases do all the above, plus contact emergency medical personnel (call 911 for an ambulance), cover all extremities completely, place warm objects, such as hot packs or water bottles on the victims head, neck, chest, and groin. Arms and legs should be warmed last. In cases of severe hypothermia, treat the employee very gently and do not apply external heat to re-warm. Hospital treatment is required.

b) Frostbite occurs when the skin actually freezes and loses water. In severe cases, amputation of the frostbitten area may be required. While frostbite actually occurs when the temperatures are 30 degrees Fahrenheit or lower, wind chill factors can allow frostbite to occur in above freezing temperatures. Frostbite typically affects the extremities, particularly the feet and hands. The affected body part will be cold, tingling, stinging or aching followed by numbness. Skin color turns red, then purple, then white, and is cold to the touch. There may be blisters in severe cases. Do not rub the area to warm it. Wrap the area in a soft cloth, move the employee to a warm area, and contact medical personnel. Do not leave the employee alone.

c) Trench foot is caused by having feet exposed to damp, unsanitary and cold conditions including water at temperatures above freezing for long periods of time. It is similar to frost bite, but considered less severe. Symptoms usually consist of tingling, itching or burning sensation. Blisters may be present. For treatment, soak feet in warm water, then wrap with dry cloth bandages. Drink a warm sugary drink. Seek medical attention if necessary.

d) Dehydration - It is easy to become dehydrated during cold weather. Signs and symptoms of dehydration include increasing thirst, dry mouth, weakness or light-headedness, and darkening of the urine or a decrease in urination. Dehydration can be revered or put back in balance by drinking fluid that contains electrolytes that are lost during work related activities. Avoid caffeinated drinks.

2. Just as with heat related illness, cold related illnesses and injuries are dangerous and potentially life threatening, however, they too can be prevented. Prevention methods include:

a) Acclimation - Employees exposed to the cold should be physically fit, without any circulatory, metabolic, or neurologic diseases that may pace them at increased risk to hypothermia. A new employee should not be required to work in the cold full time during the

first days of employment until they become adjusted to the working conditions and required protective clothing.

b) Engineering Controls - For employees working indoors, the best way to prevent cold-related illness is to make the work environment warm. Where and if possible, use heaters to warm the work area. Alternatively, decrease the general ventilation as much as possible by closing windows or doors.

c) Safe Work Practices - For employees working outdoors or working indoors without heat, take scheduled breaks in warm areas. If available, use wind barricades to block the wind from the employees. Ensure there is plenty of water to drink and take water breaks as needed. Immediately report any problems to a supervisor. Supervisors should consider scheduling most of the work for the warmest part of the day, assigning extra employees to high demand tasks. All employees should watch out for the safety of their coworkers.

d) Personal Protective Equipment (PPE) is an important factor in preventing cold stress related illnesses and injuries. Schmid employees shall adhere to the following requirements when dressing for work in a cold environment:

(1) Wear at least three layers of clothing; an inner layer of wool, silk or synthetic to wick moisture away from the body; a middle layer of wool or synthetic to provide insulation even when wet; an outer wind and rain protection layer that allows some ventilation to prevent overheating.

(2) Wear a hat or hood.

(3) Wear insulated boots or other footwear.

(4) Do not wear tight clothing; loose clothing provides better ventilation.

(5) Keep a change of clothing available in case work clothes become wet.

e) The Cold Stress Equation - OSHA has incorporated information obtained for the ACGIH threshold limit values into the Cold Stress Equation.

E. Training

1. Schmid Supervisors shall ensure all employees have received Heat and/or Cold Stress training prior to working in such conditions and on an annual basis.

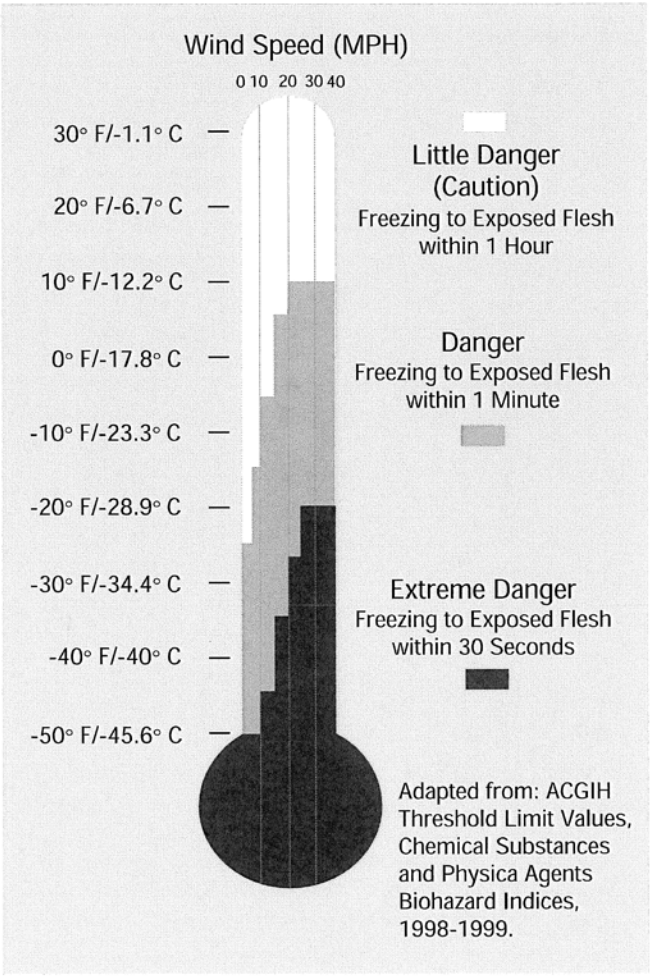
F. Recordkeeping

1. All training records shall be maintained in the employees personnel file and maintained by the supervisor.

THE COLD STRESS EQUATION

LOW TEMPERATURE + WIND SPEED + WETNESS = INJURIES & ILLNESS

When the body is unable to warm itself, serious cold-related illnesses and injuries may occur, and permanent tissue damage and death may result. **Hypothermia** can occur when *land temperatures* are **above** freezing or *water temperatures* are below 98.6°F/ 37°C. Cold-related illnesses can slowly overcome a person who has been chilled by low temperatures, brisk winds, or wet clothing.



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SECTION 31

DRIVING SAFETY PROGRAM

1. GENERAL REQUIREMENTS

A. Only authorized drivers will operate motor vehicles during the scope and course of their work.

B. All drivers operating motor vehicles will have a valid and current driver's license with proper endorsements for the vehicle being operated.

C. All drivers will obey State and Federal laws applicable to the operation of motor vehicles.

D. No driver will operate a motor vehicle while under the influence of alcohol, illegal drugs, prescription or over the counter medications, which could impair their judgment or reaction time while operating the vehicle.

E. While operating a motor vehicle authorized employees will report any traffic violations or motor vehicle accidents to the proper authorities. If involved in the accident the authorized employee will notify their supervisor as soon as possible after the accident.

F. All vehicles operated shall meet the requirements for the job to being performed and or conditions of the area where the work is to be performed. All vehicles shall be of the correct size and designed for its intended use. All vehicles shall be maintained in proper working condition. Any maintenance problems which will reduce the vehicles ability to function safely will be forwarded to a supervisor immediately.

G. All materials carried in or on the vehicle shall be properly secured using the manufacturer's recommendations for proper load weight, size, and securing locations.

H. Should be reviewed with road travelers before they perform any driving on company business. A copy of the plan must be readily available at the workplace. Road travelers should carry a copy of the plan.

I. Road journeys shall only be taken when necessary. Try to complete multiple tasks in single trips to reduce the amount of driving for improved safety and efficiency. If the trip is being taken to meet with someone, determine if the meeting can be done over the phone instead. Consider safer methods of travel (air, train, etc.) where practicable.

J. Driving shall be done during daylight hours rather than after dark whenever possible. Reduce speed when driving at night. Be aware of the potential for wildlife to be on the road, especially when driving at dusk or dawn.

K. Employees should notify their supervisor or another individual who is not traveling with them of their travel plans. This includes where they are going, when they should be getting there, and when they plan to return.

2. DRIVING HAZARDS

A. A good driver is someone who recognizes real and potential hazards, including:

1. Reckless driving, such as speeding, weaving through traffic, ignoring signs and signals, tailgating, and dangerous passing, is a real hazard.
    a) Schmid employees will follow all traffic safety signs and posted speed limits.
2. Drivers must not become distracted by using cell phones, putting on make-up, shaving, eating or drinking, writing or reading, and having conversations with passengers in their vehicle.
    a) Use of cell phones is prohibited while operating a company vehicle.
3. Driver fatigue is a problem for people driving for long periods, resulting in poor judgment and slow reaction times.
    a) Plan long trips ahead of time; make sure there are scheduled rest breaks.
4. Vehicles in poor operating condition also present a hazard. These include brakes that are not working effectively, lights that are out, and tires that are bald.
    a) Inspect the vehicles before each use and report any problems to Schmid immediately.
    b) Never use a vehicle in poor operating condition.
5. Other drivers that are under the influence of alcohol or drugs, including prescription or over-the-counter drugs, present a danger. Drivers impaired by drugs or alcohol cause about one third of all traffic accidents.
6. Before leaving on a trip, ensure that weather conditions are safe for driving. Ensure the vehicle used is adequate for the weather conditions. Make sure emergency supplies are in the vehicle, and the driver has a cell phone in case of emergency. In particularly harsh conditions, consider canceling or rescheduling the trip.

3. DANGEROUS CONDITIONS

A. Bad weather conditions:
    1. Rain
    2. Snow
    3. Sleet
    4. Ice
    5. Fog
    6. Severe winds

B. Roads themselves can present challenges:
    1. Sharp curves
    2. Railroad tracks
    3. Hills
    4. Narrow or overly wide roads
    5. Uneven surfaces
        a) Roads in disrepair
        b) Roads under construction
    6. Obstacles on the road
        a) Debris from storms
        b) Yard debris from home owners
        c) Children’s toys
        d) Construction equipment
        e) Items fallen off of other vehicles

7. When encountering such conditions slow the vehicle down.

C. Lighting
   1. No lighting at night
   2. Glaring sunlight
      a) Especially during sunrise or sunset
      b) Use sun visors or sun glasses.

D. Heavy traffic
   1. Close location of the other cars
   2. Cars that are switching lane
   3. Cars trying to pass each other

E. Oncoming traffic

F. Accidents caused by other vehicles can create extremely dangerous conditions for drivers approaching or involved in the accident.

G. Cargo that shifts or moves during transport can cause loads to unbalance the vehicle.

4. **BE A DEFENSIVE DRIVER**

A. Recognize potentially hazardous situations in advance.

B. Allow time to safely maneuver around hazards.

C. The defensive driver assumes that other drivers may make mistakes and is on guard in the event an error occurs.

D. Adjust speed, position, direction, and attention to be able to maneuver safely if a hazard develops.

E. The defensive driver searches ahead of what is immediately in front:
   1. Have advance warning of approaching hazards.
   2. Scan far enough ahead to be able to react safely to approaching situations.
   3. Watch for cars passing, merging, changing lanes, putting on their brakes.

F. Scan frequently to the side and rear for passing or approaching vehicles.

G. Avoid sudden stops.

H. Give the vehicles behind you a warning by tapping quickly on your brakes once or twice.

I. Use turn signals and brakes well in advance:

1. Give drivers behind you plenty of opportunity to see your warning lights so they can begin to slow down.
2. Give them the opportunity to avoid stopping suddenly.

J. Scan the road and the vehicles around you thoroughly before changing speed or direction.

5. GET REST AND AVOID FATIGUE

A. Avoid fatigue, which results in a trance-like state known as highway hypnosis. Fatigue deadens a driver's senses and slows reactions.

B. Take plenty of breaks. Every 2 hours, stop at a rest stop, gas station, restaurant, etc. Walk around, stretch, go for a jog, or get something to eat or drink.

C. Adjust your vehicle's environment. Open a window, change the radio station, and avoid the use of cruise control.

6. AVOID ROAD RAGE

A. Road rage, a violent anger caused by the stress and frustration of driving, seems to be more and more common in the news today.
1. In extreme cases, road rage has turned into fights, shootings, or even intentional crashes. Some common signs of a driver with road rage include aggressive driving, such as weaving in and out of traffic. The driver is usually distracted because they are yelling or swearing at other drivers, maybe pounding the steering wheel in frustration, or attempting to get the attention of other drivers.
2. Avoid road rage by steering clear of aggressive drivers who exhibit this behavior.

B. Be a courteous driver by allowing other vehicles to merge.

C. Maintain a safe distance from cars in front of you.

D. Smile at other drivers.

E. Focus on the road instead of on other drivers.

F. Avoid eye contact with drivers who are exhibiting signs of road rage.

7. SEATBELTS SAVE LIVES

A. According to the National Highway Traffic Safety Administration, an estimated 112,086 lives have been saved by seatbelts in the past 25 years.

B. A properly worn seatbelt will prevent you from hitting the dashboard, steering wheel, and windshield if you are involved in an accident.

C. A seatbelt will keep you inside the vehicle, which increases the chances of survival.

D. You are 25 times more likely to be killed when thrown from the vehicle during an accident.

E. The seatbelt is designed to use your body's strong bones to absorb the shock, rather than damaging delicate internal organs.

F. Wearing a seatbelt increases your chance of remaining conscious after a crash.
1. When conscious, you will be able to help others get out of the vehicle, if necessary.

G. A seatbelt also keeps you in control of the vehicle if you are forced to swerve or brake suddenly. Instead of being tossed out of the seat and no longer in control of the vehicle, you are in place and in control in case more action is necessary.

H. Seatbelts shall be worn by all occupants at all times whenever a vehicle is in motion.

8. **CELL PHONE USAGE**

A. The use of a hand held cellular telephone while driving a vehicle is forbidden at all times.

B. The use of a hand held cell phone is unsafe, and against the law in many states.

C. The above also applies to the sending and receiving of text messages and e-mails while operating a motor vehicle.

D. Drivers should always carry a cell phone, especially when traveling in rural areas. Consider subscribing to an in-vehicle communication/remote diagnostic service if your vehicle is equipped with one.

9. **PRE-DRIVE INSPECTION**

A. Once you are ready to get on the road, first inspect the operating condition of your vehicle.

B. Test your horn to make sure it works correctly.

C. Check your lights (both front and rear).
1. Brake lights and turn signals to make sure they are all operating correctly.

D. Vision is a vital part of safe driving.
1. Make sure your windows, mirrors, and lights are clean.

E. Check your brakes by stopping quickly while going only a few miles an hour. The vehicle should respond by stopping right away.

F. Steering wheel play.
   1. Make sure that when the steering wheel turns the wheels turn.

G. Inspect your tire tread.
   1. Look for any signs of damage.
   2. Make sure tires have adequate pressure.
      a) Keep a tire gauge in the vehicle to check the tire pressure on a regular basis.

H. Look for any fluid (oil, antifreeze) leaks under the vehicle.

10. **FOLLOW THE MAINTENANCE PROCEDURES AND TIME LINES DESCRIBED IN THE VEHICLE'S OWNER'S MANUAL**

A. Regular tune-ups should be performed.
   1. Change spark plugs
   2. Change wires
   3. Inspect and change belts and hoses

B. The oil should be changed on a regular basis.
   1. Typically every 3 months or 3,000 miles
   2. Check the owner's manual

C. Antifreeze or coolant levels need to be maintained and checked.
   1. Both winter and summer driving conditions

D. Have brakes inspected and replaced per the requirements of the owner's manual.

E. Make sure the battery is in good condition and maintains a good charge.

F. Tires should be changed per the tire manufacturer's recommendations.
   1. Change the tires more often:
      a) Snow
      b) Lots of rain
      c) During adverse weather

11. **CONDUCT START-UP/BACK-UP CHECK**

A. Before start-up or back-up:
   1. Walk around vehicle and look underneath.
   2. Check blind areas on right and in front.
   3. Check mirrors for proper adjustment.

B. Do not allow time for another hazard to approach.
   1. Start up slowly.
   2. Allow other vehicles and pedestrians to move away safely.

C. Tap horn in congested areas or recruit a signal person.

12. **RIGHT OF WAY**

A. Generally the driver who arrives last gives right-of-way.

B. You give right-of-way:
   1. When entering traffic
   2. When turning left in front of approaching traffic
   3. When changing lanes

C. Do not force other drivers to brake or steer because of your obstructive maneuver into their path.

D. Assume other drivers will not see you and avoid you when you maneuver into their path.

E. Move into your intended path or direction only after you are assured that you have been given the right-of-way and you will not conflict with other traffic.

13. **USING AND CHANGING LANES**

A. Maintain a safe following distance.

B. Stay in your lane.

C. Scan ahead of what is immediately in front of you.
   1. If you can't see passed the vehicle in front of you, you are too close.

D. If you see trouble ahead, flash your brake lights to alert drivers following you.

E. Scan to the right thoroughly before steering into the next lane.

F. Give right-of-way; do not take it.

14. **CROSSING RAILROAD TRACKS**

A. Stop and look both ways before crossing railroad tracks.

B. Do not shift gears while crossing the railroad tracks.

15. **PASSING**

A. Safe passing maneuvers require well-developed skills and judgment.

B. Passing tasks include:
   1. Checking sight
   2. Distance ahead
   3. Checking mirrors for rear traffic
   4. Checking for traffic passing you

5. Estimating speed and position of approaching vehicles
6. Estimating time you need to safely pass
    a) Accelerating
    b) Steering
    c) Checking for traffic entering from side roads

C. Before you pass, check to be certain no one is passing you.

D. Signal your intentions to pass.

E. Assume the driver in front of you does not know you are passing.

F. Watch carefully for vehicles that may be entering the roadway.

G. Assume vehicles approaching from the opposite direction will not see you or slow down.

H. Watch for vehicles passing other vehicles from the opposite direction.

I. If the vehicle you are trying to pass speeds up, let it go.

J. Don't get into a dangerous race.

K. Don't take risks.

L. If in doubt, don't pass.

16. **PEDESTRIANS**

A. Most pedestrian accidents occur when the pedestrian walks into the path of an approaching vehicle.

B. Pedestrians often misjudge the speed and closeness of a vehicle and assume you can and will slow down for them.

C. They think that because they can see you, you can see them.

D. Anticipate pedestrians making such errors and be prepared to compensate.

E. When maneuvering close to pedestrians, anticipate the unexpected.

F. It is difficult for pedestrians to judge how fast you are approaching.

G. Pedestrians will often assume that you see them and that you will slow down for them to complete their crossing.

H. At night especially, pedestrians assume you can see them because they can see your headlights.

I. Don't assume they will give you the right-of-way.

J. Improper trailer tracking in turns may trailers to run onto the sidewalk. Turn wide enough to avoid this and go very slowly.

K. Pedestrians all too often walk or stand in the blind spots in front and to the right of your vehicle.

L. Scan around vehicle thoroughly when pedestrians are present.

17. **ICE, SLUSH, AND GRAVEL**

A. Increase following distance enough to avoid a rear-end collision if another driver brakes hard.

B. Use moderation in judging safe speed. To maintain a safe stopping distance, slow down, but not so much that you become a hazard to drivers behind you.

C. Apply brakes gently and steer without jerky movements.

D. Beware, lightly loaded wheels lock up easily during braking, this induces jack-knifing.

E. Beware of traveling too slowly on slick, banked curves. The vehicle might slide sideways into opposing traffic or off the road.

18. **REDUCED VISIBILITY IN FOG, DARKNESS, RAIN, AND SNOW**

A. Reduced visibility conditions include twilight, darkness, rain, snow, and fog.

B. Use moderation in judging safe speed.

C. To maintain a safe stopping distance during reduced visibility, slow down, but not so much that you become a hazard to drivers behind you.

D. When encountering any fog, slow down.
   1. There may be a stalled or slow vehicle hidden in the fog.
   2. Turn on your headlamps (low beam) or fog lamps to increase your visibility and your chances of being seen by other motorists.
   3. Use emergency flashers in extreme conditions.

E. Keep vehicle clean, especially headlights, windshield, and taillights.

F. Be prepared to get off road and wait for conditions to improve if necessary.

19. **CARRY EMERGENCY SUPPLIES**

A. Tire jack and spare tire

B. Flares or other emergency signal devices

C. Flashlight

D. First-aid and tool kits

E. Jumper cables

F. Fire extinguisher

G. Spare fuses

20. **EMERGENCY STOPPING**

A. If you stall while driving, turn on emergency flashers immediately and try to coast to the shoulder if safe to do so.

B. If you stall and stop on the roadway, turn on emergency flashers immediately.
   1. Then set up reflective triangles.

C. If you have a CB radio or cell phone, call for help.

D. Controlling and extinguishing fires safely requires special knowledge. If you do not know how to handle a fire emergency, **do not handle it**.
   1. Use your vehicle's fire extinguisher on the fire.
   2. Get away, if the fire is not out, after the extinguisher has been used up.

E. Replace the fuses or bulbs, if you have the tools and the knowledge, to safely perform this task. If not, call for help.

F. Roadside emergency kits shall be kept in all vehicles used for highway travel. These kits shall include equipment to assist in a roadside emergency such as water, booster cables, first aid supplies, warning triangles, flashlights, etc. If there is a potential for snow and ice, carry sandbags and a shovel.

21. **EMERGENCY SIGNALS**

A. When you stop your vehicle on a highway or shoulder, the vehicle's flashers must be activated.
   1. Flashers must remain on, until other warning devices are activated. Flashers must be activated, while warning devices are being picked up.

B. The first warning device must be placed on the traffic side of the vehicle, within 10 feet, in the direction of approaching traffic.

C. A second warning device must be placed facing approaching traffic (behind your vehicle) about 100 feet away in the center of the lane/shoulder where the vehicle is stopped.

D. The third device must be placed about 100 feet away from the stopped vehicle away from approaching traffic (in front of your vehicle).

E. Never attach any flame-producing emergency signal (such as a flare) to any part of the vehicle.

22. RESPOND SAFELY TO A VEHICLE CRASH

A. Remain calm.

B. Move the cars off to the side of the road. Have all the cars turn off their ignition.

C. Do a first aid check on all drivers and passengers.

D. Call police and medical services, if necessary.

E. Collect information.

F. Draw picture of accident scene.

G. Do not point blame or discuss fault.

H. Get a copy of the police report.

I. Collect information:
   1. Names
   2. Insurance information
   3. Drivers' license numbers

J. Draw a picture of the accident scene or take pictures. Consider carrying a disposable camera in your vehicle.

K. Do not point blame or discuss fault.

L. Get the police officer's information so you can request a copy of the police report.

23. LONG DISTANCES

A. When driving long distances, sufficient breaks should be taken to prevent fatigue. When driving alone and having trouble staying awake, pull off the road and get out of the vehicle for fresh air, or take a power nap. If driving late at night, consider getting a hotel room and starting fresh the next day. If two licensed drivers are in the vehicle, take turns driving. Get plenty of rest before beginning your journey.

24. KEY POINTS

A. Inspect and maintain your vehicle

B. Know driving hazards and dangerous

C. Conditions

D. Become a proud defensive driver

E. Wear your seatbelt

F. Follow safe driving practices in all driving

G. Know how to respond to emergencies

H. Before taking a trip to an unfamiliar location ensure that you have printed driving directions available. Do not plan to read directions from a smartphone while driving. A GPS device may be used, but printed directions should be kept as a back-up.

SECTION 32

RADIATION SAFETY PROGRAM

1. GENERAL REQUIREMENTS

A. Schmid radiation safety program along with OSHA 29 CFR 1910.1096 include provisions for project sites to keep radiation doses to workers as low as reasonably achievable (ALARA).

B. To satisfy this requirement Schmid requires that all project sites participate in the ALARA program.

C. All workers will be advised of ALARA program and it is the project sites responsibility to help keep dose equivalents ALARA.

D. Once a year, the site will review the summaries of the types and amounts of by-product material used, occupation doses, changes in radiation safety procedures, safety measures and continuing education and training of all personnel who work with or near the by-product material.

E. The project proponent will conduct all of these tasks in order to ensure that Schmid personnel are assured with reasonable level of safety and collective occupational doses ALARA.

F. If the reviews of performance indicate that the goals of ALARA are not met, the project proponent will take steps to reach those goals.

2. DEFINITIONS

A. Radiation includes alpha rays, beta rays, gamma rays, X-rays, neutrons, high-speed electrons, high-speed protons, and other atomic particles; but such term does not include sound or radio waves, or visible light, or infrared or ultraviolet light.

B. Radioactive material is any material that emits, by spontaneous nuclear disintegration, corpuscular or electromagnetic emanations.

C. Restricted area - any area access to which is controlled by the employer for purposes of protection of individuals from exposure to radiation or radioactive material.

D. Unrestricted area - any area access to which is not controlled by the employer for purposes of protection of individuals from exposure to radiation or radioactive materials.

E. Dose is a quantity of ionizing radiation absorbed, per unit of mass, by the body or by any portion of the body. When the provisions in this section specify a dose during a period of time, the dose is the total quantity of radiation absorbed, per unit of mass, by the body or by any portion of the body during such period of time.

F. Rad is a measure of the dose of any ionizing radiation to body tissues in terms of the energy absorbed per unit of mass of the tissue. One rad is the dose corresponding to the absorption of 100 ergs per gram of tissue (1 millirad (mrad) = 0.001 rad).

G. Rem is a measure of the dose of any ionizing radiation to body tissue in terms of its estimated biological effect relative to a dose of 1 roentgen (r) of X-rays (1 millirem (mrem) = 0.001 rem). The relation of the rem to other dose units depends upon the biological effect under consideration and upon the conditions for irradiation. Each of the following is considered to be equivalent to a dose of 1 rem:

1. A dose of 1 roentgen due to X- or gamma radiation
2. A dose of 1 rad due to X-, gamma, or beta radiation
3. A dose of 0.1 rad due to neutrons or high energy protons
4. A dose of 0.05 rad due to particles heavier that protons and with sufficient energy to reach the lens of the eye.
5. If it is more convenient to measure the neutron flux or equivalent, than to determine the neutron dose in rads, as provided in above paragraph (3)(G)(3), 1 rem of neutron radiation ay, for purposes of the provisions in this section be assumed to be equivalent to 14 million neutrons per square centimeter incident upon the body; or, if there is sufficient information to estimate with reasonable accuracy the approximate distribution in energy of the neutrons, the incident number of neutrons per square centimeter equivalent to 1 rem may be estimated from the table below:

Neutron Flux Dose Equivalents

Neutron energy (million electron volts (Mev)	Number of neutrons per square centimeter equivalent to a dose of 1 rem (neutrons/cm^2)	Average flux to deliver 100 millirem in 40 hours (neutrons/cm^2 per sec.)
Thermal	**970×10^6**	**670**
0.0001	**720×10^6**	**500**
0.005	**820×10^6**	**570**
0.02	**400×10^6**	**280**
0.1	**120×10^6**	**80**
0.5	**43×10^6**	**30**
1.0	**26×10^6**	**18**
2.5	**29×10^6**	**20**
5.0	**26×10^6**	**18**
7.5	**24×10^6**	**17**
10	**24×10^6**	**17**
10 – 30	**14×10^6**	**10**

H. For determining exposures to X- or gamma rays up to 3 Mev. The dose limits specified in this section may be assumed to be equivalent to the air dose. For the purpose of this section air dose means that the dose is measured by a properly calibrated appropriate instrument in air at or near the body surface in the region of the highest dosage rate.

3. SIGNS AND LABELS

A. All areas where work is conducted using radioactive materials or radiation shall be properly labeled using appropriate signs and symbols.

B. The symbol used shall be the conventional radiation caution colors (magenta or purple on yellow background and of the conventional three bladed design.

C. All radiation signs shall be posted in a conspicuous location and be visible to all workers and visitors.

D. The sign shall bear the standard radiation symbol with the word **Caution** and proper phrasing for the type or level of radiation in the area (i.e. Radiation Area, High Radiation Area, Airborne Radioactivity Area, Radioactive Materials, etc.).

4. **EXPOSURE**

A. Ionizing Radiation

1. Restricted Areas

a) Schmid shall not poses, use, or transfer sources of ionizing radiation in such a manner as to cause any employee or individual in a restricted area to receive in any period of one calendar quarter (3 month period) a dose of radiation in excess of those listed below.

	Rems per Calendar Quarter
Whole body: Head and Trunk; active blood-forming organs; lens of eyes; or gonads	1 ¼
Hands and forearms; feet and ankles	18 ¾
Skin of whole body	7 ½

5. AIR AND PERSONNEL MONITORING

A. Personnel Monitoring

1. Occupational exposure to radiation must be monitored by external devices and or bioassay when an adult is likely to receive, in one year from sources external to the body, a dose in excess of 10 percent of the limits given in the permissible exposure to radiation.
2. Minors and declared pregnant women likely to receive, in one year from sources external to the body, an dose in excess of 10 percent of any of the applicable limits. These limits must be a summation of external and internal doses.
3. Schmid will follow the occupational dose limits requiring personnel monitoring as outlined in the Federal guidelines. When volatile materials are used for research purposes the RSO will also ask that personal monitoring be conducted.
4. The use of individual monitoring devices for external dose is required for:
   a) Adults who are likely to receive an annual dose in excess of any of the following (each evaluated separately):
      (1) 0.5 rem (0.005Sv) deep dose equivalent.
      (2) 1.5 rems (0.015 Sv) eye dose equivalent.
      (3) 5 rems (0.05 Sv) shallow dose equivalent to the skin.
      (4) 5 rems (0.05 Sv) shallow dose equivalent to any extremity.
   b) Minors who are likely to receive an annual dose in excess of any of the following (each evaluated separately):
      (1) 0.05 rem (0.5 mSv) deep dose equivalent.
      (2) 0.15 rem (1.5 mSv) eye dose equivalent.
      (3) 0.5 rem (0.005 Sv) shallow dose equivalent to the skin, or;
      (4) 0.5 rem (0.005 Sv) shallow dose equivalent to any extremity
   c) Declared pregnant women who are likely to receive an annual dose from occupational exposure in excess of 0.05 rem (0.5 mSv) deep dose equivalent, although the dose limit applies to the entire gestation period.
   d) Individuals entering a high or a very high radiation area. Internal exposure monitoring (not necessarily individual monitoring devices) is required. There are no such designated areas at Schmid.
   e) Adults likely to receive in one year an intake in excess of 10 percent of the applicable ALI's for ingestion and inhalation.
   f) For minors and declared pregnant women likely to receive in one year a committed effective dose equivalent in excess of 0.05 rem (0.5 mSv).

B. Monitoring of External Exposures

1. The personnel monitoring devices level depending on the area working and exposure level this will be determined by the RSO and Project Proponent.
2. All necessary monitoring devices and medical surveillance will be provided by the project site and/or project proponent. MDH forms and NRC Forms 4 and 5 will be kept and filed, if this monitoring demonstrates that personnel were exposed to detectable levels of radiation. These forms are required only if recommended doses be exceeded by calculation or by demonstration through monitoring.

C. Placement of Personnel Monitoring Devices

1. If individual dosimeters are used, the monitoring device should be placed near the location expected to receive the highest dose during the year. For example, the badge should usually be worn on the lapel of the shirt. The finger-badge dosimeters should be worn on the index finger of the hand most likely to contact the radioactive material (Example: right hand index finger of right handed person) under the disposable glove which must be worn whenever working with radioactive materials.
2. Individual personal dosimeters should be removed and stored in a dark area away from extremes of sunlight, temperature or humidity at the end of the workday. Personal dosimeters should not be worn home or worn at any time outside of the work area. If inadvertent wearing of dosimeters outside of the work area occurs, notify the RSO summarizing any activities conducted during that time which might cause erroneous dosimeter results for that month. If work no longer requires a personnel-monitoring device, notify the RSO immediately so that ordering of dosimeters can be discontinued.

D. Occupational Exposure Limits

Part of Body	Adult Yearly (mrem)	Minors Yearly (< 18 yrs. age) (mrem)	Adult ALARA Yearly (mrem)
Whole Body, Head and Trunk, Active Blood Forming Organs (TEDE)	5,000	500	500
Lens of Eye (LDE)	15,000	1,500	1,500
Extremities (SDE) (Elbows, Forearms, Hands, Knees, Lower Legs, Feet)	50,000	5,000	5,000
Single Organ Dose (TODE)	50,000	5,000	5,000
Skin of Whole Body (SDE)	50,000	5,000	5,000

6. PREVENTING PERSONNEL AND FACILITY CONTAMINATION

A. Schmid management, the RSO, the RSC and all contractors must participate in the ALARA program. The initial training, refresher courses, individual training will be provided by the proponent and/or project site, which will also give the guidelines and the workers' responsibilities for maintaining ALARA. In addition to the attention to permissible levels and

personnel monitoring requirements, the following guidelines are some of which will be used at Schmid to keep exposure levels ALARA.

B. Work areas must be labeled with the **Caution Radioactive Materials** sign, or marked off with the radioactive warning label tape. If the area is seldom used for radioactive materials, the area may be labeled only for the duration of the use, providing that it is surveyed for contamination and is free of contamination before the labels are removed. If the work area is frequently used, it is best to label the area permanently.

7. EMERGENCY SIGNALS

A. All personnel working in areas where radioactive materials are used or stored shall be familiar with the emergency signals in use by the facility to order and evacuation.

B. All personnel shall also be trained on proper emergency procedures for evacuation and isolation of the incident to assist in the prevention of contamination to personnel and the environment.

8. TRAINING

A. Schmid will ensure that all employees and personnel working in or visiting an area with a radioactive hazard have received proper training as prescribed by the Nuclear Regulatory Commission (NRC) as well as any applicable OSHA requirements or requirements set for by other governing agencies.

B. Postings will be maintained and copies of documentation shall be made available to the employees for review.

9. RECORDKEEPING

A. Schmid will maintain records of the radiation exposure of all employees for whom personnel monitoring is required by the OSHA standard and advise each of his or her employees of their individual exposure at least annually.

SECTION 33

PANDEMIC PREPAREDNESS PROGRAM

1. **PANDEMIC PREPAREDNESS PLAN**

A. Schmid has adopted this plan to prepare for and respond to a threat of influenza or other pandemic that causes serious widespread illness. Management has appointed the Safety Director as the Coordinator for the pandemic response plan.

2. **THE PURPOSE** of this plan is to address the following issues related to pandemics:

A. Creating a culture of infection control in the workplace that is reinforced during the annual influenza season, to include, if possible, options for working offsite while ill, systems to reduce infection transmission, and worker education.

B. Establishing contingency plans to maintain delivery of services during times of significant and sustained worker absenteeism.

C. Where possible, establishing mechanisms to allow workers to provide services from home if public health officials advise against non-essential travel outside of the home.

D. Establishing partnerships with other members of the financial community to provide mutual support and maintenance of essential services during a pandemic.

3. **MANAGEMENT** also appoints a team of management level and other appropriate staff to assist the Coordinator known as the Pandemic Response Team. The members of this team must include at least one person from each department of our agency, including at least one person from each branch. The Coordinator and each Pandemic Response Team member will select a back-up employee to assume their duties in case of their own illness. This person will be kept current on all emergency procedures and this list will be kept with this plan and updated as needed.

A. Members of this team are:
   1. Area supervisors
   2. Pandemic response coordinator
   3. Safety coordinator

B. It is the duty of the Coordinator to:
   1. Monitor issues and information related to pandemics to keep our plan up to date.
   2. Recommend any changes to the plan as circumstances warrant.
   3. Conduct employee training.
   4. Communicate with public health agencies, emergency responders and others regarding out plan, and understand their capabilities should and outbreak occurs.
   5. Attend external training/seminars about pandemic influenza outbreaks in order to remain current about the pandemic threat in our community.
   6. Implement this plan should it become necessary.
   7. Share all information with management staff and response team members through redundant means such as e-mail, job site posting, and telephone.
   8. Coordinating with maintenance personnel to ensure that all common surface areas are cleaned on a routine basis with antiseptic cleaning materials.

C. Pandemic Response Team members will have the following responsibilities:

1. Identify and communicate to the Coordinator which employees, vendors, suppliers and systems are essential to maintaining operations at their locations.
2. Identify and communicate to the Coordinator the names of possible ancillary employees who could perform certain job duties in the case of a pandemic (e.g. consultants, temporary work services, retired employees).
3. Develop and communicate to the Coordinator an emergency communications plan for their departments / locations, including identification of key personnel, vendors, and customers.
4. Develop and submit a plan to continue operations at their locations with the least possible number of staff.
5. Ensure that all employees in their departments are adequately trained on emergency procedures in the case of a pandemic and in the prevention of illness on an annual basis and prior to any changes in work assignments or locations.
6. Encourage all employees to be vaccinated annually for influenza.
7. Encourage all employees to utilize hand sanitizers and antimicrobial soaps when washing hands and sanitizers when cleaning surfaces.
8. Ensure that hand sanitizers, wipes, and other prevention products are kept full and in a ready state.
9. Assist the Coordinator in the implementation of this plan, if necessary, at their locations.

4. PREPARATION

A. The coordinator will maintain a list of contacts in the health profession to provide consultation and advice regarding this plan and its implementation.

B. The Coordinator will, at least annually prior to the influenza season, provide information to all employees regarding those practices that are recommended by public health officials that will reduce the spread of the infection. The Coordinator will also develop a list of recommended infection control supplies (hand soaps, tissues, and so on) and ensure that each location has a sufficient supply of them.

C. The Coordinator will maintain a list of duties and positions for which individual employees are cross-trained within the bank. Should staffing levels drop due to an outbreak, supervisors can use this list to fill in positions where needed.

D. The Coordinator will maintain a list of duties that employees can perform from home, as well as any equipment (such as computers) that may be necessary to perform those duties. Supervisors can then draw on this list to have those duties performed by employees from home should it become necessary.

E. The Coordinator shall recommend to Management an emergency sick leave policy to be adopted in the event of a pandemic. The policy is to be non-punitive and require employees who have been exposed or who exhibit symptoms of the illness to remain at home.

F. The Coordinator and the Information Technology Director will ensure that the agency has sufficient IT infrastructures to support employee telecommuting and remote access to agency services.

G. The Coordinator and the Human Resource Director will establish the following policies and procedures:

1. Flexible work hours, including staggered work hours and telecommuting.
2. Restricted employee travel to affected areas.
3. Guidance for employees returning to the United States from affected areas.
4. Counseling services for all employees and their families, particularly those affected by illness.
5. Special procedures/accommodations for employees and customers with special needs or disabilities.

H. The Coordinator shall develop a plan to keep employees informed of developments as they occur, including those employees who remain at home. This could include plans to obtain home e-mail addresses, telephone numbers for employees to call to receive recorded messages, pages on the website for employees, and so on. The plan must also include procedures for responding promptly to employees' questions about such issues as whether to report for work and special hours of operations during a flu outbreak.

I. The Coordinator and Pandemic Response Team will conduct random drills at all locations to test the effectiveness of our plan.

J. Periodic routine cleaning/disinfection of surfaces that are likely to have frequent hand contact and when visibly soiled.

5. SHOULD A PANDEMIC OCCUR

A. Should a pandemic occur, the Coordinator will, after consultation with knowledgeable health officials, implement the following steps (as deemed necessary):

1. Encourage customers and potential customers to use remote facilities. The staffing these services it to be increased as necessary to ensure that individuals using them receive prompt service and response so their will continue to use them.
2. Employees with job duties that can be accomplished by telecommuting will be encourage to work from home unless they have been cross-trained to work in place of an employee who is ill.
3. The emergency sick leave policy shall be implemented. Supervisors will be instructed to send and keep employees home if they exhibit symptoms of the illness, working from home if practical.
4. Team members will contact their key vendors to determine the impact of the outbreak on their operations and its effects on our ability to perform our daily functions, and they will communicate the results to the coordinator. The Coordinator will see to it that we obtain extra quantities of any necessary supplies that may be threatened due to the outbreak.
5. The Coordinator, with the assistance of team members, will monitor staffing levels at all locations and assist supervisors in finding ways to maintain critical operations in light of any staffing shortage. Should the closing of any locations be a consideration due to inadequate staffing availability, the Coordinator will first contact the Health Officer to obtain their

advice and consent prior to any closing. Should an office be closed, notices shall be posted prominently at the location informing customers of the situation and telling them where and how they can transact business. Telephone and other lines of communication must be routed to a location where they will be staffed by employees so customers' attempts to reach us do not go unanswered.

6. The Coordinator is to ensure that the public is kept informed of any changes that affect their transaction of business with us. This information is to be included on the home page of our website, in the lobbies of our locations, and in other media as appropriate.

7. The Coordinator shall establish social distancing including increasing the space between employee work areas and decreasing the possibility of contact by limiting large or close contact gatherings.

B. The Coordinator is to implement the employee contact plan to ensure that all employees are kept informed of developments as they occur, including employees who remain at home.

6. TESTING THE PLAN

A. Management directs the Emergency Preparedness Coordinator to conduct an annual assessment of our Pandemic Response Plan and submit its findings to the board with the Pandemic Coordinator's and individual managers' responses to exceptions.

SECTION 34

SUBCONTRACTOR MANAGEMENT PLAN

1. GENERAL REQUIREMENTS

A. All tier subcontractors wishing to perform work for Schmid is required to be pre-qualified prior to bid award and re-qualify every 3 years thereafter. The pre-qualification/requalification process is performed by Schmid utilizing data provided directly to Schmid by the subcontractors. Subcontractors/potential bidders will submit the required documents to the appropriate Schmid contact(s) as instructed. Both Schmid Safety Director and Procurement Department will evaluated submitted documents and notify the subcontractor of the results. The following documentation will be required to be submitted by each contractor for the pre-qualification/requalification process.

1. Experience Modification Rate (EMR) letter from their insurance carrier for the last three years.
2. Last three years OSHA 300 and 300A logs or loss runs.
3. Copy of their company Health and Safety Program.
4. Current copy of Certificate of Insurance.

B. Schmid recognizes that there may some variability in the recording of OSHA related injuries by contractors. As such, Experience Modification Rate (EMR) will be given more weight with regard to statistical qualification. A subcontractor with an EMR below 1.05 will be allowed to bid on Schmid projects. If the contractor's EMR is above 1.05, but below 1.25, bidding is allowed provided that OSHA Recordable Rate and OSHA Days Away from Work Rate are below 125 percent of the national averages, and both the EMR and OSHA rates show an improving trend over the last three years. A subcontractor not meeting the statistical limits may submit a written action plan as to how their organization plans to improve safety and performance. That plan must be reviewed by the Schmid Safety Director. A subcontractor with OSHA or equivalent ratings at or below the National Average will be considered to have an acceptable safety performance.

C. Every subcontractor shall submit a copy of their health and safety program for review. The program shall include specific details of:

1. Fire Prevention
2. Hazard Communication
3. Substance Abuse
4. Accident Management
5. Employee Safety Training
6. New Employee Orientation
7. Hazardous Energy Control
8. Fall Protection
9. Employee Discipline and Management Commitment to Safety

D. Schmid shall determine that selected bidders are qualified. Schmid shall notify the subcontractors of when the pre-bid meeting is being held and that their attendance is mandatory. All subcontractors shall be thoroughly familiar with the contents of the Schmid safety expectations. A pre-construction meeting shall be held for every project. Subcontractors awarded the bid will be required to have their Project Manager and/or Supervisor attend the preconstruction meeting. The subcontractor shall present their site-specific safety plan, job hazard analysis JHA), and site logistics plan for the project at this meeting. The meeting shall be held at least two weeks prior to the project when feasible at a location identified by Schmid. A

review of project guidelines shall be performed at this meeting along with specific project related requirements.

E. All subcontractors shall incorporate a written Job Hazard Analysis (JHA) process. The JHA process shall address all anticipated or scheduled work activities anticipating potential hazards and unsafe conditions **before the work begins**, and will develop, communicate and implement appropriate precautions that could prevent accidents and avoid injuries.

F. All subcontractors are required to attend Schmid safety orientation prior to working on the project. Schmid client may require an additional orientation. Safety orientation shall be scheduled through Schmid.

G. All subcontractors shall be required to conduct toolbox talks on a weekly basis on a topic specific to work activities. All subcontractors are also required to conduct document audits of the project on a daily basis and provide the results of those audits to Schmid Project Manager by the end of each day. Included in the audit shall be specific measures instituted to remedy any safety violation. Site safety walks are required periodic throughout the day.

H. Schmid shall complete a subcontractor evaluation scorecard for each subcontractor when the subcontractor has completed their work on the project. The evaluation will assist Schmid to determine future subcontractor and/or employee work on Schmid projects.

SECTION 35

GAS HAZARDS PROGRAM

1. GENERAL REQUIREMENTS

A. Schmid shall ensure all employees are aware of the Owners contingency plan provisions including evacuation routes and alarms. Employees should participate in emergency evacuation drills and practice rescue procedures.

2. GENERAL TRAINING REQUIREMENTS

A. Schmid shall assure that their employees are trained in Gas Hazards before initial assignment and annually thereafter.

B. Gas Hazard Awareness training should include at a minimum:

1. Locations of alarm stations
2. Gas Monitoring Equipment - Portable and Fixed Detection
3. Gas Alarms
4. Gas Hazards - Characteristics of gases, to include oxygen deficiency, oxygen or nitrogen enrichment, carbon monoxide and hydrogen sulfide at a minimum. Hazard training must also include any plant or department specific gases of concern. Training must include signs and symptoms of overexposure,
5. Personnel Rescue Procedures
6. Use and care of Self-Contained Breathing Apparatus (SCBA) - includes donning and emergency procedures (if applicable)
7. Evacuation Procedures
8. Staging Areas - Primary and Secondary
9. Gas Hazard Awareness training should be documented and available for review.

3. MONITORING REQUIREMENTS

A. Each employee shall use a portable gas detector as required in all high gas hazard areas.

B. The gas monitor equipment must be calibrated per manufacturer's recommendations prior to each use and documented.

C. Bump test are required to be completed at the beginning of each day the monitor is in use per the requesting owner client and manufacturer's guidelines to ensure the monitor is functioning correctly.

D. The gas monitor equipment must be calibrated per manufacturer's recommendations by the manufacturer or authorized service provider and contain a current calibration sticker on the monitor providing the date of calibration.

4. RESPIRATORY PROTECTION REQUIREMENTS

A. Schmid respiratory protection program shall be established in accordance with OSHA 29 CFR 1910.134 and followed by all employees based on monitoring results.

SECTION 36

STOP WORK PROGRAM

1. PURPOSE

A. The purpose of this plan and procedure is to ensure that all employees are given the responsibility and authority to stop work when employees believe that a situation exists that places them, their coworker(s), contracted personnel, or the public at risk or in danger; could adversely affect the safe operation or cause damage to the facility; or result in a release of chemicals into the environment, and to provide methods to resolve the issue.

B. Maintaining a diligent questioning attitude is vital to safe execution of work and is a cornerstone to effective safety management.

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

2. SCOPE

A. This procedure is applicable to all contractors and subcontract personnel working on Schmid projects and sites.

3. RESPONSIBILITIES

A. Employees

1. In supporting safe execution of work, all personnel, have the following responsibilities:

a) The responsibility and authority to stop work or decline to perform an assigned task without fear of reprisal, to discuss and resolve work and safety concerns. The Stop Work may include discussions with co-workers, supervision, or a safety representative to resolve work related issues, address potential unsafe conditions, clarify work instructions, propose additional controls, etc.

b) The responsibility and authority to initiate a Stop Work **immediately**, without fear of reprisal, when the employee believes a situation exists which places himself/herself, a coworker(s), or the environment in danger or at risk.

c) The responsibility to report any activity or condition that the employee believes is unsafe or for which they have initiated a Stop Work. Notification should be made to the affected worker(s) and to the supervisor or their supervisor's designee at the location where the activity or condition exists.

d) The responsibility to notify their supervisor if a raised Stop Work issue has not been resolved to their satisfaction through established channels prior to the resumption of work.

e) Employee can contact their safety representative or union safety representative with a concern or to initiate a stop work, if the employee prefers to remain anonymous.

B. Management/Supervisor

1. Management and supervision are committed to promptly resolve issues resulting from an employee-raised Stop Work. Management (e.g., Directors, Managers, Supervisors') responsibilities are to:

a) Resolve any issues that have resulted in an individual stopping a specific task(s) or activity.

b) Provide feedback to individuals and the affected work group who have exercised their Stop Work responsibility on the resolution of their concern prior to resuming work. If the employee that issued a stop work is not available due to reasons such as vacation, shift change, or training then the supervisor provides the feedback to the safety representative and union safety representative, prior to resuming work.

c) Notify the employer's safety representative and the union safety representative, when bargaining unit personnel are affected, if a raised stop work issue has not been resolved.

d) Notify the facility representative if the contractor's Stop Work action affects their operations.

e) Ensure no actions are taken as reprisal or retribution against individuals who raise safety concerns or stop an activity they believe is unsafe.

f) If a stop work is not brought up by a bargaining unit employee, but does affect bargaining unit personnel, then also notify the union safety representative.

g) Review all Stop Work intervention reports for causes of the Stop Work intervention, steps taken to correct concerns, and develop plans to eliminate future occurrences of similar health and safety concerns through training, engineering, and administrative controls.

C. Safety Representative

1. The Safety Representative is responsible to:

a) Assist employees, supervision and management in the resolution of safety issues and concerns.

b) Immediately contact management and work to resolve issues when an employee has called a situation to their attention and has not been resolved. Discuss resolution with employees involved in a work stoppage where resolution was completed after their shift or when they were unavailable, or where he/she acted as their representative in reaching resolution.

c) Work as the agent of an employee that prefers to remain anonymous to work directly in the resolution to the stop work.

d) Document all Stop Work interventions including the reasons why the Stop Work was issued and all steps taken to rectify the concern.

4. **TRAINING**

A. All supervisors and employees will be trained on the Stop Work Program and Policies prior to being assigned to any project. The training must be documented including the employee name, the dates of training and subject.

SECTION 37

COMPRESSED GAS CYLINDERS

1. INTRODUCTION

Compressed and liquefied gases have the potential for creating hazardous working environments. This document contains information on the proper storage, handling, use and disposal of compressed and liquefied gas cylinders. Most of the information is general and applies to all compressed and liquefied gases. Specific information on selected hazard classes is contained in Number 6 Gases with Specific Hazards of this section.

2. PURPOSE AND SCOPE

Compressed and liquefied gases are routinely used in various construction and industrial work sites. This Gas Cylinder Safety Guideline applies to all company employees and subcontractors who use or otherwise handle compressed or liquefied gases or systems that use compressed or liquefied gases. It is the intent of this guideline to provide information on the safe usage of compressed and liquefied gases at work locations and afford employee protection from potential health and physical hazards associated with gas and cylinder usage. Schmid promotes the safe use of gases by offering training and information on the proper storage, handling, usage and disposal of gases and gas cylinders. Only trained and qualified personnel shall be allowed to use compressed and liquefied gases. Training should include the associated hazards of the materials, necessary safety precautions, personal protective equipment (PPE) and emergency response procedures. Appropriate safety data sheets (SDS's), associated Safetygrams™, or other gas supplier product information shall be made accessible to compressed gas users.

3. STORAGE OF COMPRESSED AND LIQUEFIED GAS

Proper storage is critical for the safe usage of compressed and liquefied gases. Cylinder storage areas should be prominently posted with hazard information regarding the gases stored. The NFPA 704 diamond with a cylinder indicated in the specific hazard (white) section of the diamond and the corresponding 2 flammability, health and reactivity hazard sections also marked is an accepted method of signage. Other storage requirements are outlined below.

A. Storage Requirements: All gas cylinders
   1. Shall not be stored in exits or egress routes.
   2. Shall be stored within a well-ventilated area.
   3. Shall not be stored in damp areas, near salt or corrosive chemicals, fumes, heat or where exposed to the weather.
   4. Shall be stored in an upright position.
   5. Shall be secured with a chain or appropriate belt above the midpoint, but below the shoulder. Laboratory cylinders less than 18 inches tall may be secured by approved stands or wall brackets.
   6. Shall be properly supported with two metal chains or the equivalent to prevent it from falling. The cylinder should be upright, properly supported, and stored outdoors or in a well-ventilated area.
   7. Shall have the cylinder valve closed or capped. When a cylinder is not connected to a pressure regulator or a manifold, or is otherwise not in use, it is extremely important that the cylinder valve be kept closed and the safety cap be kept in place. The cap protects the cylinder valve, and a cylinder should not be lifted by its cap.

8. Shall be kept at least 20 feet away from all flammable, combustible or incompatible substances. Storage areas that have a noncombustible wall at least 5 feet in height and with a fire resistance rating of at least 30 minutes may be used to segregate gases of different hazard classes in close proximity to each other.

9. Shall be stored so that cylinders are used in the order in which they are received.

10. Shall be stored so that gases with the same hazard class are stored in the same area. Inert gases are compatible with all other gases and may be stored together.

11. Shall not be stored longer than one year without use.

12. Shall be stored so that full cylinders remain separate from empty cylinders.

4. COMPRESSED AND LIQUEFIED GAS HANDLING

Employees must be trained on the proper use, handling and storage of compressed gas cylinders. The Following requirements shall apply to the handling of gas cylinders.

A. Compressed gases shall be handled only by properly trained persons. Training must include the contents of this guideline as well as any specific information relevant to the gas being used and emergency information outlined in Schmid HASP, available at the construction site office.

B. Safety shoes are required when moving cylinders.

C. Cylinders should not be dragged or physically carried. Transport cylinders with a hand truck designed for the transport of cylinders. Cylinder caps shall be secured during transport. Cylinders must be transported in a vertical secured position using a cylinder basket or cart, and must not be rolled. Regulators should be removed and cylinders capped before movement. Cylinders should not be dropped or permitted to strike violently and protective caps are not used to lift cylinders.

D. Prevent damage to cylinders. Locate cylinders where they will be protected from physical damage by striking or falling objects, corrosion or damage from public tampering.

E. No person other than the gas supplier shall attempt to mix gases in a cylinder.

F. Cylinders shall not be subjected to artificially create low temperatures without approval from the supplier.

G. Containers shall not be used for any other purpose than holding the contents as received.

H. Damaged or leaking cylinders must be reported to the project manager or local safety office immediately for proper disposal. See disposal information in Number 7 of this section.

I. Cylinders shall not be picked up by the cap.

J. Ropes, chains and slings shall not be used to suspend cylinders, unless cylinder was designed for such.

K. Magnets shall not be used for lifting cylinders.

L. Where appropriate lifting attachments have not been provided on the cylinder/container, suitable cradles or platforms to hold the containers shall be used for lifting.

M. The user shall not paint cylinders.

N. Leaking, defective, fire burned and corroded containers shall not be shipped without the approval of the supplier.

O. Visual and other inspections shall be conducted to determine that compressed gas cylinders are in a safe condition.

5. COMPRESSED AND LIQUEFIED GAS USE

The following are general good practices guidelines to follow when using gas cylinders and compressed gases.

A. General Requirements - Cylinders must be equipped with the correct regulators. Regulators and cylinder valves should be inspected for grease, oil, dirt and solvents.

1. Ensure that regulator pressure control valve is relieved (i.e. closed) before attaching to tanks.
2. Close valves on gas cylinders when a system is not in use.
3. Remove all pressure from regulators not currently used (by opening equipment valves downstream after the regulators are closed).
4. Shut-off valves must not be installed between pressure relief devices and the equipment they are to protect.
5 Use pressure relief valves in downstream lines to prevent high pressure buildup in the event that a regulator valve does not seat properly and a tank valve is left on.
6. Relief valves should be vented to prevent potential buildup of explosive or toxic gases.
7. Never allow flames or concentrated heat sources to come in contact with a gas cylinder.
8. Never allow a gas cylinder to become part of an electrical circuit.
9. Never partially open a tank valve to remove dust or debris from the cylinder inlet.
10. Never use cylinder gas as compressed air such as dusting off clothing. This may cause serious injury or create a fire hazard.
11. Nitrogen must not be used to power pneumatic tools or blowers except when they are used in an inert atmosphere.
12. Pressurize regulators slowly and ensure that valve outlets and regulators are pointed away from all personnel when cylinder valves are opened.
13. Cylinders which require a wrench to open the main valve shall have the wrench left in place on the cylinder valve while it is open. Use adequately sized wrenches (12 inches long) to minimize ergonomic stress when turning tight tank valves. Never apply excessive force

when trying to open valves. Cylinders with stuck valves should be returned to suppliers to have valves repaired.

14. Do not attempt to open a corroded valve, it may be impossible to reseal.
15. Valves should only be opened to the point where gas can flow into the system at the necessary pressure. This will allow for quicker shutoff in the event of a failure or emergency.
16. Use a cylinder cap hook to loosen tight cylinder caps. Never apply excessive force or pry off caps. Return to supplier to remove stuck caps.
17. Keep piping, regulators and other apparatus gas tight to prevent gas leakage.
18. Confirm gas tightness by using compatible leak test solutions (e.g. soap and water) or leak test instruments.
19. Release pressure from systems before connections are tightened or loosened and before any repairs.
20. Do not use Teflon tape on CGA fittings (straight thread) where the seal is made by metal-to-metal contact. Use of Teflon tape causes the threads to spread and weaken, increasing the likelihood of leaks.
21. Never use adapters or exchange fittings between tanks and regulators.
22. Fluorescent light can be used to check for grease or oil in regulators and valves.

B. The following labeling requirements shall apply to all gas cylinders.

1. Know the contents of each cylinder you are using.
2. Use only the vendor label for positive identification of contents of the cylinder. Be aware that color coding may be inconsistent from vendor to vendor.
3. Mixed gases shall be clearly labeled with the contents of the cylinder.
4. Empty cylinders shall be labeled with the word empty or the abbreviation MT.
5. Always identify the contents of a gas cylinder before using it. Nitrogen cylinders should contain an identifying label UN1066.

Preferred labeling includes the identity of the material, statement of hazard and the associated signal word. For example, the preferred label for nitrogen would be:

Nitrogen
CAUTION: HIGH PRESSURE GAS
CAN CAUSE RAPID SUFFOCATION

Excellent sources of information for the warning and hazard information that should be contained on cylinders are the Air Products, Matheson and other gas company catalogs, the CGA Pamphlet C-7: Precautionary Labeling and Marking of Compressed Gas Cylinders, as well as the manufacturer or distributor of the gas.

C. Signage – Appropriate signage will include adequate warning by stating “Danger, Inert Gas Present, Possible Oxygen Deficient Environment”.

1. Temporary warning signs must be located wherever potential personnel exposure to nitrogen exists due to the temporary use of nitrogen, i.e. during vessel or line venting or purging with nitrogen.
2. As determined by the hazard assessment, nitrogen vent/purge points will be labeled and barricaded.

a) Nitrogen can create an oxygen deficient atmosphere inside and around a vessel or tank that has been inerted. Working inside a vessel that contains an oxygen-deficient atmosphere is considered Immediately Dangerous to Life and Health (IDLH).

b) Reasonable alternatives to this option must be discussed before this options is selected. The alternatives and discussion must be documented before any work can proceed.

c) As determined by the hazard assessment, nitrogen vent/purge points will be labeled and barricaded with a three foot diameter or as determined by oxygen monitoring (must be > 19.5 outside of the barrier).

D. Manifolds, Valves and Regulators - The following information applies to the use of manifolds, valves and/or regulators.

1. Where compressed gas containers are connected to a manifold, the manifold and its related equipment, such as regulators, shall be of proper design for the product(s) they are to contain at the appropriate temperatures, pressures and flows.

2. Use only approved valves, regulators, manifolds, piping and other associated equipment in any system that requires compressed gas. Care must be taken to ensure that pressure gauges on regulators are correct for the pressure of the gas cylinder used. With the exception of lecture bottles, threads, configurations and valve outlets are different for each class of gases to prevent mixing of incompatible gases.

3. CGA Pamphlet V-1: Standard for Compressed Gas Cylinder Valves, lists the appropriate valve for each gas. Manufacturers and distributors should also be able to identify the valves and associated equipment required for each gas.

4. Lecture bottles use universal threads and valves, some of which are interchangeable. Label all associated equipment with the gas name to prevent unintentional mixing of incompatible materials.

5. Valves and regulators should undergo periodic maintenance and repair. A visual inspection should be performed before each usage to detect any damage, cracks, corrosion or other defects. Long term maintenance or replacement periods vary with the types of gases used, the length of use, and conditions of usage. Consult the cylinder, regulator or gas supplier for recommended valve and regulator maintenance schedules.

6. Valves and regulator maintenance histories should be known before usage. Valves that pass visual inspection are still subject to failure, therefore it is critical that toxic or poisonous gases are used in ventilated enclosures and have local exhaust ventilation in place for downstream pressure relief valves, etc.

7. Valves and regulators should only be repaired by qualified individuals. Valve and regulator manufacturers, gas supply companies, or valve and regulator specialty shops should be consulted for any repair needs.

6. GASES WITH SPECIFIC HAZARD CLASSES

A. The following information regarding specific classes of gases is offered as additional guidance to be used in conjunction with the general usage requirements listed number 5 in this section.

1. Corrosive Gases - The following information is provided for corrosive gases. Examples include chlorine, hydrogen chloride, fluorine, hydrogen fluoride, hydrogen sulfide, carbon monoxide and carbon dioxide.

a) Metals become brittle when used in corrosive gas service, check equipment and lines frequently for leaks.

b) A diaphragm gauge should be used with corrosive gases that would destroy a steel or bronze gauge. Check with gas supplier for recommended equipment.

c) Remove regulators after use and flush with dry air or nitrogen.

2. Cryogenic Liquids and Gases - Cryogenic liquids and their boil-off vapors rapidly freeze human tissue and cause many common materials which may crack or fracture under stress. All cryogenic liquids produce large volumes of gas when they vaporize (at ratios of 600:1 to 1440:1, gas to liquid) and may create oxygen-deficient conditions. Examples of common cryogenic liquids include liquid oxygen, hydrogen, helium, and liquid neon. The following information applies to the use and handling of cryogenics.

a) Use appropriate personal protective equipment (PPE) including insulated gloves and eye protection (goggles and a face shield) during any transfer of cryogenic liquid.

b) In the event of skin contact with a cryogenic liquid, do not rub skin, place the affected part of the body in a warm water bath not to exceed 40°C (105°F).

c) Use only equipment, valves and containers designed for the intended product and service pressure and temperature.

d) Inspect containers for loss of insulating vacuum. If the outside jacket on a container is cold or has frost spots, some vacuum has been lost. Empty the contents into another cryogenic container and remove the damaged unit from service. Repairs should be made by the manufacturer or an authorized company.

e) Transfer operations involving open cryogenic containers such as dewars must be conducted slowly to minimize boiling and splashing of the cryogenic fluid.

f) Ice or other foreign matter should not be allowed to accumulate beneath the vaporizer or the tank. Excessive ice buildup could result in the discharge of excessively cold gas or structural damage to the cryogenic container or surroundings.

g) All cryogenic systems including piping must be equipped with pressure relief devices to prevent excessive pressure build-up. Pressure reliefs must be directed to a safe location. Do not tamper with pressure relief valves or the settings for the valves.

h) Hot air, steam or hot water should be used to thaw frozen equipment. Do not use water to thaw liquid helium equipment.

3. Flammable Gases - The following information applies to the use and handling of flammable gases. Some common examples of flammable gases include acetylene, hydrogen, methane, propane and iso-butane.

a) Flammable gases, except for protected fuel gases, shall not be used near ignition sources. Ignition sources include open flames and sparks, sources of heat, oxidizing agents and ungrounded or non-intrinsically safe electrical or electronic equipment.

b) Portable fire extinguishers shall be available for fire emergencies. The fire extinguisher must be compatible with the apparatus and the materials in use.

c) Flames shall not be used for detecting leaks. A compatible leak detection solution shall be used for leak detection.

d) Spark proof tools shall be used when working with or on a flammable compressed gas cylinder or system.

e) Access doors to areas which use or store flammable gases shall be posted **No Open Flames**.

f) Manifold systems shall be designed and constructed by competent personnel who are thoroughly familiar with the requirements for piping of flammable gases. Manifolds should comply with the standards of a recognized safety authority such as

Underwriters Laboratories, Inc. Federal, State, Local or insurance company specifications must be identified before starting design and construction. Consultation with the gas supplier before installation of manifolds is recommended.

4. Fuel, High Pressure and Oxidizing Gases - The following information applies to the use and handling of fuel, high pressure and oxidizing gases.

a) Fuel gases often use a combination of flammable and oxidizing gases. Use of fuel gases must comply with: Oxygen-Fuel Gas Welding and Cutting OSHA 29 CFR 1910.253, Acetylene OSHA 29 CFR 1910.102 Hydrogen OSHA 29 CFR 1910.103. Additionally, adherence to the requirements of the Compressed Gas Association as defined in Pamphlet G-1: Acetylene, Pamphlet SB-8: Use of Oxy-fuel Gas Welding and Cutting Apparatus, and the requirements of the National Fire Protection Association Standard 51: Standard for the Design and Installation of Oxygen-Fuel Gas Systems for Welding, Cutting and Allied Processes are required.

b) High pressure gases can be rated up to 3000 pounds per square inch (psi). Typical uses include MIG welding gas mixtures, cryogenics, non-toxic gas distribution, medical gas distribution, and emergency oxygen services. In addition to any gas specific hazards, high pressure gases should carry the following hazard label. **Caution: High Pressure Gas.**

c) Oxidizing gases are non-flammable gases (e.g., oxygen chlorine, fluorine and nitrous oxide), but in the presence of an ignition source and fuel can support and vigorously accelerate combustion. Do not use oil in any apparatus where oxygen will be used. Gauges and regulators for oxygen shall bear the warning, **Oxygen - Use No Oil**.

5. Toxic and Highly Toxic Gases - The following information applies to the use of toxic and highly toxic gases.

a) All gases with a NFPA Health Hazard rating of 3 or 4 must be stored and used in accordance to applicable regulations.

b) Unless otherwise indicated, all gases must be stored in a continuously mechanically ventilated gas cabinet, fume hood or other enclosure.

c) Small quantities (e.g. lecture cylinders) or dilute concentrations of these gases may be stored outside of a ventilated enclosure with the approval of site management and the safety officer.

d) Audible alarms should be utilized in ventilated hoods that are dedicated to toxic gas usage or storage.

e) Standard Operating Procedures (SOP's) for processes or procedures which use corrosive, toxic or highly toxic gases shall be developed that include emergency response actions. All affected employees shall be trained on the contents of these procedures.

6. Nitrogen (N2) – As a gas is colorless and odorless. When nitrogen concentration increases, the oxygen concentration decreases and the atmosphere may contain less than 19.5% oxygen. Breathing atmospheres of less than 19.5% oxygen can lead to progressively more adverse health effects, including death. Nitrogen displaces carbon dioxide in the lungs, which tells the body to stop breathing. Nitrogen is typically used to displace air to create an oxygen deficient atmosphere. Schmid shall provide training for all affected employees.

a) The use of nitrogen can be harmful. Due to the hazards of working in nitrogen atmospheres, alternative processes not requiring entry into an inert atmosphere must be considered and, when appropriate, become the preferred alternative.

b) Documented planning will be conducted for those operations involving potential nitrogen exposure, which includes anytime an active purge is being applied to a system in or around equipment associated with work.

7. GAS CYLINDER DISPOSAL

The following information applies to the disposal of compressed gas cylinders.

A. If possible, purchase compressed gas only from manufacturers that will agree to take back the empty cylinder.

B. A cylinder is considered empty when the container pressure is at atmospheric pressure.

C. Refillable cylinders should be returned to materials handling personnel or directly to the vendor.

D. If a refillable cylinder is encountered that does not have a manufacturer label, contact materials handling personnel to see if they can identify the manufacturer through stamp marks on the cylinder.

E. Maintain manufacturer labels and label the cylinder with an **Empty** or **MT** tag.

F. Materials handling personnel or the vendor should be contacted for disposal of partially full cylinders.

G. Proper identification of the contents of all cylinders is required and is the responsibility of the cylinder owner.

H. Disposal fees for unknown cylinders is the contractor's expense.

8. HANDLING COMPRESSED GAS CYLINDER LEAKS AND EMERGENCIES

A. Preplanning - Despite strict adherence to safety practices, accidents involving gases may occur in the work site. The amount of damage sustained by personnel and property from these accidents will be directly related to the quality of the sites emergency plan and procedures. Users of compressed gas cylinders must be familiar with necessary safety precautions. Standard Operating Procedures (SOP's) for using compressed gases shall include a discussion of possible accident scenarios, appropriate employee responses and should take into account the following factors:

1. The nature of the operation (e.g. equipment used and type of injury that might be inflicted).
2. The potential location of a release or spill (e.g. outdoors versus indoors, in a laboratory, corridor or storage area, on a table, in a hood or on the floor).
3. The quantities of material that might be released and the type of containment (i.e. compressed gas tank size, manifold systems, etc.).
4. The chemical and physical properties of the compressed gas (e.g. its physical state, vapor pressure and air or water reactivity).
5. The hazardous properties of the compressed gas (e.g. its toxicity, corrosive and flammability).
6. The availability and locations of emergency supplies and equipment.

7. A contingency plan which identifies building evacuation routes, emergency telephone numbers, chemical containment procedures, fire extinguisher usage, etc., should be posted in the worksite.

B. Minor Leaks - Occasionally a gas cylinder or one of its component parts may develop a leak. Most of these leaks occur at the top of the cylinder in areas such as the valve threads, pressure safety device, valve stem and valve outlet. The following information applies to the remediation of minor leaks.

1. If possible, verify suspected leaks using a flammable gas detector or soapy water solution (a flame should not be used for detection). If the leak cannot be stopped by tightening a valve gland or packing nut, emergency action procedures should be initiated and site safety and management should be notified.
2. For flammable, inert or oxidizing gases, move the cylinder to an isolated, well-ventilated area away from combustible materials. Post signs that describe the hazard.
3. For corrosive and toxic gases, move the cylinder to an isolated, well-ventilated area and use suitable means to direct the gas into an appropriate chemical neutralizer. Post signs that describe the hazards.
4. If it is necessary to move a leaking cylinder through populated portions of the building, place a plastic bag, rubber shroud or similar device over the top and tape it (duct tape preferred) to the cylinder to confine the leaking gas.

C. Major Leaks - In the event of a large gas release or if an accident takes place in which readily available personal protective equipment (PPE) is inadequate to ensure worker safety, activate the following Emergency Procedures:

1. Immediately call 911 and report the incident.
2. Activate building and area fire alarms (or chemical safety alarms if applicable).
3. Evacuate the area, securing entrances and providing assistance to others on the way out.
4. Provide emergency response officials with details of the problem upon their arrival.

D. Accidents Involving Personnel Injury

1. For medical emergencies, call the site emergency response number or 911.

2. Assist persons involved and administer immediate first aid which may include:
3. Washing under a safety shower (in case of burning clothing or chemical exposures).
4. Removing contaminated clothing.
5. Irrigating the eyes at an eyewash station.
6. Administering artificial respiration.
7. Notify personnel in adjacent areas of any potential hazards (e.g. activate building or area alarms).
8. Move injured personnel only if necessary to prevent their exposure to further harm.

E. Fire and Fire Related Emergencies

1. For all fires, immediately call the site emergency response number or 911. Small isolated fires within the laboratory may be extinguished using the appropriate portable fire

extinguisher if personnel are confident that they can safely extinguish the fire. Additional information on fire extinguisher use is contained in the site safety plan. For large or rapidly spreading fires, the following procedures should be followed:

a) Call the site emergency response number or 911 to report the fire.
b) Activate building and area alarms.
c) Evacuate the building, shutting doors and providing assistance to others on the way out.
d) Provide fire or police officials with the details of the problem upon their arrival.

SECTION 38

FATIGUE MANAGEMENT

1. INTRODUCTION

A. The fatigue management plan must be properly implemented. Without adequate risk controls being put in place, the work that has gone into preparing the fatigue management plan will not be useful. Key issues to consider when implementing the plan include timeframes, training, roles and responsibilities, communication and participation.

2. TIMEFRAMES/POLICY

A. The fatigue management plan must be properly implemented. Without adequate risk controls being put in place, the work that has gone into preparing the fatigue management plan will not be useful. Key issues to consider when implementing the plan include timeframes, training, roles and responsibilities, communication and participation.

B. Work hours including overtime shall be limited to allow for adequate rest periods between working shifts. This may be accomplished through rotating shift scheduling.

C. Equipment shall be provided to the employees to assist in the movement of large items and for repetitive tasks to reduce the impact on the employee.

D. Anti-fatigue mats and other ergonomic equipment shall be provided for employees who are working at a static location during their shift.

E. Workers will be allowed to take breaks during their work shift on a periodic basis and or allowed to change working position to reduce fatigue.

F. The use of over the counter drugs, prescription medication, and or other stimulants used to stay awake during a normal work shift shall be used sparingly and in accordance with drug manufacturer or doctor's orders. Chronically using these products in such a manner may result in unsafe actions when the effects wear off and as such this practice shall be discouraged.

3. TRAINING

A. Many of the new risk control measures will involve training. Training is not a suitable control measure in itself, but training is essential to good risk control. Training gives the workforce the skills and knowledge they need to work with risk controls for fatigue. It also provides appropriate information about the fatigue hazards and risks in the workplace. All site personnel, including contractors, must be informed about the fatigue management plan and have the skills and knowledge they need to fulfill their roles and responsibilities. In addition, operators/employers must provide education and awareness about the site's fatigue policy and procedures whenever:

1. New employees/workers are appointed (i.e. Initial Training)
2. Induction or refresher training is provided annually and on an as needed basis
3. Contractors are engaged (as part of the contractor management plan)
4. Managers or supervisors are appointed or promoted, and
5. Changes are made to the fatigue management plan

B. The education and awareness training should include coverage of issues such as
1. The nature of fatigue
2. Recognizing the warning signals of fatigue
3. Possible effects of fatigue
4. Factors that decrease or exacerbate the likelihood or effects of fatigue
5. Control measures through appropriate work and personal habits including the fatigue management plan and
6. Reporting of fatigue to supervisor.

C. Training must be arranged so it is available to all employees/workers on all shifts during work hours.

4. COMMUNICATION

A. The entire workforce, including contractors, needs to know about the fatigue management plan. As with any important workplace communication, when communicating the requirements of the plan, the different needs of various groups on the mine site should be taken into account. These needs include that some employees/workers may not be able to read English very well; night shift employees/workers may not get the informal communication that day shift employees/workers receive; and some employees/workers may have difficulties attending information meetings because they work away from a central workplace. As a result, different communication methods may be needed for different groups.

5. PARTICIPATION

A. All employees/workers on site, including contractors, must be involved in implementing the fatigue management plan and in making sure it is followed.

B. When available job appropriate ergonomic equipment will be used to improve workstation conditions to help reduce employee fatigue.

C. Periodically scheduled rest breaks with access to chairs for workers to sit to control fatigue and increase mental fitness will be provided.

D. All employees must not chronically use or abuse over the counter, prescription drugs or any other product which may affect their ability to perform work safely.

6. SUPERVISION

A. All employees/workers on site, including contractors, must be involved in implementing the fatigue management plan and in making sure it is followed.

B. Supervision will evaluate working locations to address possible worker fatigue issues and re-evaluate current controls to ensure their effectiveness in reducing worker fatigue such as maximum hour limitations and rotating schedules.

C. Supervision will set work hour limitations and will control job rotation schedules to control fatigue, allow for sufficient sleep and increase mental fitness in an effort to control employee turnover and absenteeism.

D. Supervision is responsible to analyze and periodically evaluate work tasks to control fatigue.

7. **REPORTING**

A. It is essential that employees/workers (including contractors) are able to report fatigue problems affecting themselves or others without attracting criticism. This will require understanding and support from supervisors and colleagues. Reporting is more likely in a working environment where fatigue is recognized by all levels of the organization as being an important health and safety issue that should be properly managed. Supervisors are to make safety critical decisions and take the appropriate actions to prevent loss.

SECTION 39

MANUAL LIFTING PROGRAM

1. MANUAL LIFTING PROGRAM (GENERAL)

Manual lifting or manual material handling contributes to a large percentage of musculoskeletal disorders that often involve strains and sprains to the lower back, shoulders and limbs that can result in pain, disability, medical treatment and financial stress.

These intentions of these guidelines are to help Schmid employees recognize and minimize the risk associated with manual lifting by using proper lifting techniques and procedures.

Before manual lifting is performed, a hazard assessment must be completed. The assessment must consider size, bulk, and weight of the object(s), if mechanical lifting equipment is required, if two-man lift is required, whether vision is obscured while carrying and the walking surface and path where the object is to be carried.

A. Factors Associated with Back Disorders - Back disorders result from exceeding the capability of the muscles, tendons, discs, or the cumulative effect of several contributors:

1. Reaching while lifting
2. Poor posture, how one sits or stands
3. Stressful living and working activities, staying in one position for too long
4. Bad body mechanics, how one lifts, pushes, pulls, or carries objects
5. Poor physical condition, losing the strength and endurance to perform physical tasks without strain
6. Poor design of job or work station
7. Repetitive lifting of awkward items, equipment, or (in health-care facilities) patients
8. Twisting while lifting
9. Bending while lifting
10. Maintaining bent postures
11. Heavy lifting
12. Fatigue
13 Poor footing such as slippery floors or constrained posture
14. Lifting with forceful movement
15. Vibration, such as with lift truck drivers, delivery drivers, etc.

B. Signs and symptoms include pain when attempting to assume normal posture, decreased mobility, and pain when standing or rising from a seated position.

2. PREVENTION AND CONTROL

A. Engineering Controls

1. General

a) Alter the task to eliminate the hazardous motion and/or change the position of the object in relation to the employee's body; such as adjusting the height of a pallet or shelf.

b) Supervision must periodically evaluate work areas and employees' work techniques to assess the potential for and prevention of injuries. New operations should be evaluated to engineer out hazards before work processes are implemented.

c) Musculoskeletal injuries caused by improper lifting must be investigated and documented. Incorporation of investigation findings into work procedures must be accomplished to prevent future injuries.

d) Use of provided manual lifting equipment by employees must be enforced.

2. Training

a) Should include general principles of ergonomics, recognition of hazards and injuries, procedures for reporting hazardous conditions, and methods and procedures for early reporting of injuries. Additionally, job specific training should be given on safe lifting and work practices, hazards, and controls.

b) Supervision must periodically evaluate work areas and employees' work techniques to assess the potential for and prevention of injuries. New operations should be evaluated to engineer out hazards before work processes are implemented.

3. Manual Handling Tasks

a) Material handling tasks should be designed to minimize the weight, range of motion, and frequency of the activity.

b) Work methods and stations should be designed to minimize the distance between the person and the object being handled.

c) Platforms and conveyors should be built at about waist height to minimize awkward postures. Conveyors or carts should be used for horizontal motion whenever possible. Reduce the size or weight of the object(s) lifted.

(1) High strength push/pull requirements are undesirable, but pushing is better than pulling. Material handling equipment should be easy to move, with handles that can be easily grasped in an upright posture.

(2) Workbench or workstation configurations can force people to bend over. Corrections should emphasize adjustments necessary for the employee to remain in a relaxed upright stance or fully supported, seated posture. Bending the upper body and spine to reach into a bin or container is highly undesirable. The bins should be elevated, tilted or equipped with collapsible sides to improve access.

(3) Repetitive or sustained twisting, stretching, or leaning to one side are undesirable. Corrections could include repositioning bins and moving employees closer to parts and conveyors.

(4) Store heavy objects at waist level.

(5) Provide lift assist devices, and lift tables.

(6) Musculoskeletal injuries caused by improper lifting must be investigated and documented. Incorporation of investigation findings into work procedures must be accomplished to prevent future injuries.

4. Survey the work area, set yourself up to succeed.

a) Whenever possible utilize mechanical aids for lifting: forklifts, pallet jacks, a dolly, hand trucks, cranes, back brace, etc.

b) Whenever handling rough or sharp edge materials you need to utilize proper work gloves.

c) Make sure the work area and travel zone is free and clear of any oil, water, mud, debris, rubble, ropes, cords, holes or other tripping/falling hazards.

d) Make sure there is adequate lighting.

5. Performing a Manual Lift

a) Size up the load and check overall conditions. Do not attempt the lift by yourself if the load appears to be too heavy or awkward. Check that there is enough space for

movement, and that the footing is good. Good housekeeping ensures that you will not trip or stumble over an obstacle.

b) Make certain that your balance is good. Feet should be shoulder width apart, with one foot beside and the other foot behind the object, that is to be lifted.

c) Bend the knees; do not stoop. Keep the back straight, but not vertical. (There is a difference. Tucking in the chin straightens the back.)

d) Grip the load with the palms of your hands and your fingers. The palm grip is much more secure. Tuck in the chin again to make certain your back is straight before starting to lift.

e) Use your body weight to start the load moving, and then lift by pushing up with the legs. This makes full use of the strongest set of muscles.

f) Keep the arms and elbows close to the body while lifting.

g) Carry the load close to the body. Do not twist your body while carrying the load. To change direction, shift your foot position and turn your whole body.

h) Watch where you are going!

i) To lower the object, bend the knees. Do not stoop. To deposit the load on a bench or shelf, place it on the edge and push it into position. Make sure your hands and feet are clear when placing the load.

6. Team lifting must be coordinated

a) If the weight, shape, or size of an object makes the job too much for one person, ask for help.

b) Ideally, workers should be of approximately the same size for team lifting.

c) One individual needs to be responsible for control of the action to ensure proper coordination. If one worker lifts too soon, shifts the load, or lowers it improperly, they or the person working with them may be injured.

d) Do not walk out of step.

7. Lifting heavy objects

a) Safe lifting of heavy items requires training and practice. For example, we have probably all seen a small person move heavy sacks with apparent ease.

b) The secret lies in taking the proper stance and grip.

c) When equipment is available, it should be used to lift and carry heavy objects.

d) Loaders, forklifts, hoists, etc. are made for this purpose.

e) Where use of lifting equipment is impractical or not possible, two man lifts must be used.

8. Lifting objects to another level

a) Utilize a rope and tool bag for transporting small tools and parts to another level.

(1) Never carry tools or materials up a ladder or carry tools in your pockets.

(2) Do not use common utility buckets to lift tools or parts to another level.

SECTION 40

HAZARD IDENTIFICATION AND RISK ASSESSMENT PROGRAM

1. GENERAL REQUIREMENTS

A. All employees, sub-contractors, or others conducting work shall conduct a risk assessment prior to starting any task. Supervisors and workers shall all participate in the identifying of hazards and the implementation of controls to eliminate or reduce these hazards.

B. The identification of hazards and the controls used shall be documented on a Job Hazard Analysis form.

2. HAZARD/RISK IDENTIFICATION

A. The hazard identification process should be used for routine and non-routine activities as well as new processes, changes in operation, products or services as applicable.

B. Supervisors shall develop a list of all potential workplace hazards. The following sources are some examples of resources which can be used to identify the hazards present on a worksite:

1. Direct reports from workers/Incident Reports
2. Previous Job Hazard Analysis
3. Jobsite inspections/observations
4. Instructional documentation on equipment

3. HAZARD/RISK ASSESSMENT

A. When a potential hazard has been identified, the supervisor will work with employees to conduct a hazard analysis.

1. The hazard analysis should:

a) Consist of a least two employees conducting the analysis, who are trained in the recognition of hazards and the implementation of control measures.

b) Consult with all other affected employees who are not conducting the analysis.

c) Determine whether a hazard exists and if so should assess the risk through utilizing a JHA form.

4. HAZARD/RISK CONTROL

A. All hazards identified shall be ranked based on the severity or potential to cause bodily harm to a worker or damage to the facility.

B. All hazards identified shall be controlled to the greatest extent possible by implementing the following controls in the order listed below:

1. Engineer out the hazard through guarding, isolation, removal, etc.
2. Administratively remove the hazard by instituting work practice controls, placing signage, employee training, work rotations, etc.
3. Have all effective workers utilize Personal Protective Equipment (PPE) such as safety glasses, fall protection harness, hard hat, safety vest, etc.

C. The utilization of PPE shall be a last resort if all other methods of controlling the hazard are not effective.

D. Assignment, methods of addressing and mitigation of the identified hazard must be properly documented with confirmation of completion and implemented controls.

5. EVALUATION

A. The site safety representative shall review all Job Hazard Analysis conducted and work locations affected to ensure that protective measures are appropriately implemented, and enforced for all workers.

6. TRAINING

A. All supervisors and employees shall be trained on the identification and mitigation of job site hazards.

B. All supervisors and employees shall be trained on the proper use and care of PPE relevant to their job duties.

SECTION 41

JOB COMPETENCY PROGRAM

1. Schmid shall provide an organizational chart listing job title responsibilities and accountability of:

   A. Schmid top management, middle management supervisors, field management personnel.

   B. Field jobs - project managers, general foremen, foremen and crafts.

2. Job descriptions for each position with minimum requirements listed:

   A. Education required

   B. Training

   C. Work experience

   D. Physical requirements

   E. Certifications

   F. Union membership if applicable

3. Training/experience crafts - Schmid will document what level an apprentice has achieved, a journeyman years of experience, has performing this or similar work.

4. Schmid shall obtain and maintain documentation of including expiration dates if applicable of job specific training: for example:

   A. Certified welder of stainless steel

   B. Operation of specific types and models of cranes

   C. Confined space entry training

   D. Fire watch

   E. Crane signaling

   F. Haz-Mat

5. Schmid will obtain and provide when required documentation that the individuals hired are able to perform task independently meeting site requirements.

   A. This may include being able to speak and understand English.

   B. They have completed the site safety training as required.

   C. They have passed all background and alcohol and drug testing that may be required

D. Their level of training and or experience allows them to work independently.

6. Job specific training must be provided for new or transferred employees. All employees must be trained on the tasks they perform on a regular basis.

7. A competent person (Supervisor, Lead Hand, etc.) must verify that an employee is competent to perform their roles and responsibilities before being allowed to work independently.

SECTION 42

FIT FOR DUTY PROGRAM

1. GENERAL REQUIREMENTS

A. Schmid is committed to providing a drug-free workplace and a safe work environment for employees. Schmid shall ensure that all employees are physically capable of performing their assigned work.

B. The physical requirements of the job will be made available to the contractors and or subcontractors prior to the start of the job, covering areas such a climbing, entering confined space, wearing a respirator, heat or cold stress, heavy lifting etc.

C. Pre-employment physicals should be included in the hiring process, and when changing into certain job functions and different environments.

D. All employees may be required to provide a pre-employment drug and alcohol screening, and be subject to random or post-accident screening as prescribed by Schmid or the host facility. The drug and alcohol screening must be performed by a DOT or host facilities.

2. TRAINING

A. All employees shall provide proof that they have received the minimum training required to perform the work they are hired to perform. Employees must receive training specific to their assigned task.

1. Examples might be welding, instrumentation, scaffold building, equipment operator qualifications, respirator fit test, etc. This will include safety training OSHA 10hr or 30hr or equivalent.
2. Certifications such a crane operator, certified welder
3. Craft level journeyman or apprentice
4. Craft may be required to attend a pre-work safety training program provided by the general contractor, contractor or host facility.

3. SAFE WORK PRACTICES AND PROCEDURES

A. All employees are expected and required to follow all safe work policies and procedures as listed in this Corporate Health and Safety Plan and the General Contractor and/or host facilities SSHASP. Failure to do so may result in disciplinary action up to and including termination.

B. Safe work procedures must be in place. Examples might include, Hot Work Permitting, Confined Space, LO/TO, PSM, Electrical Safety, Operator Safety, etc.

4. RESPONSIBILITY

A. Each employee is expected to report to work physically and mentally able to safely perform all aspects of his/her job. Employee's activities and behaviors should be monitored to determine if employee should be removed from the work site.

1. Any employee who is unable to perform his or her job because of a physical or mental condition shall notify his or her supervisor.

a) This shall include notifying their employer when they are taking prescription or over the counter drugs that could impair his/her ability to work safely.

b) This also includes but not limited to being fatigued to the point of not being able to perform their duties safely due to the nature and/or duration of the work performed.

2. All employees are responsible for notifying their supervisor when they observe a co-worker acting in a manner that indicates the coworker may not be fit for duty. If the supervisor's behavior is the focus of concern, an employee may inform the upper level manager.

a) Any supervisor believing an employee might be unfit for duty must follow the procedure outlined in this policy for referral.

b) When an employee reports for duty, or is on duty, and appears to be unfit (including but not limited to attendance issues, poor work performance, behavioral issues or a workplace accident) the employee may be subject to:

(1) Coaching

(2) Safety retraining

(3) Or appears to be under the influence of drugs and/or alcohol, the supervisor may send the employee to drug/alcohol screening

(4) The Companies Wellness program if provided

c) Failure to follow safety procedures and work requirements including failing an alcohol/drug screening may result in disciplinary action up to and including termination.

d) 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.

3. Foremen are responsible for the performance of employees under their direction. It is a requirement of their position to ensure that all health and safety policies and procedures are followed. It is required that they notify the appropriate parties (Supervisors, Human Resources, Safety) based on the level performance or behavior observed for further action concerning the employees continued employment at the site.

4. Employees must be responsible for ensuring they are physically and mentally fit to perform their job functions safely. Employees must take responsibility for their own safety as well as not reporting to work in a condition as to endanger the safety of their fellow workers.

SECTION 43

EMERGENCY ACTION PLAN

1. **GENERAL REQUIREMENTS** - Schmid has established this written emergency action plan to notify all employees for procedures to take in the event of an emergency. A copy of this plan shall be maintained in all work locations to include off-site project locations and shall be available to all employees of Schmid

All Schmid employees shall receive training on this plan on an annual basis at a minimum.

Fire Emergency

When fire is discovered:
Activate the nearest fire alarm (if installed) or sound the emergency signal on the project by three long blasts of the air horn.
Notify your supervisor immediately.
Notify the Local Fire Department by calling 911.
If the fire alarm is not available, notify the site personnel about the fire emergency by the following means (check applicable).

Fight the fire ONLY if:
The Fire Department has been notified.
The fire is small and is not spreading to other areas.
Escaping the area is possible by backing up to the nearest exit.
The fire extinguisher is in working condition and personnel have been trained to use it.

Upon being notified about the fire emergency, employees must:
Leave the building and/or project site using the designated escape routes.
Assemble in the designated area established in advance
Remain outside until the supervisor and or designated authority announces that it is safe to reenter.
The supervisor or foreman shall account for all employees using the projects employee roster or attendance record to ensure all employees evacuated the facility. In the event an employee is unaccounted for, the emergency response agency will be notified of the missing employee.

All Schmid employees shall be provided the name and contact information to report all emergencies at the beginning of each shift and shall contact the Safety Director.

Plan Review:
The emergency action plan shall be reviewed with all employees outside of annual when:

1. When the plan is developed or the employee is assigned initially to a job.
2. When the employee's responsibilities under the plan change.
3. When the plan is changed.

SECTION 44

NFPA 70E POLICY

1. PROTECTION AGAINST ARC FLASH

A. Policy - An arc flash is a dangerous condition associated with the release of energy caused by an electric arc. An arc flash is an explosion causing severe burns, injuries and/or death depending on the severity.

Most workers realize that electrical shock is potentially life threatening, but many do not understand that wearing clothing that is not flame resistant can result in severe harm or death if it is ignited in an electrical arc flash.

B. Purpose - While it is the policy of Schmid to de-energize the power source before performing any work on the system, we understand that at times it is necessary to be exposed to the energy source (i.e. Investigative work). Before the point of exposure, we need to protect the worker from a potential arc flash that is always possible due to the presence of a power source. The means of proper PPE and levels of protection are simplified with the use of fire resistant garments that meet the hazard risks.

Keep in mind that the use of these suits, are only needed when you are being exposed to energy, or you are attempting to tie-in or are making contact with the power source. Once the potential for an arc flash is either removed or isolated, and the worker is protected, the protective suit is no longer needed (i.e. the panel cover is back on).

It is the policy of Schmid that all employees use the following PPE in order to protect themselves against Arc Flash occurrences.

C. Exposure - to <u>under</u> 600 volts:
1. Nomex full body jump suit
2. Properly rated gloves
3. Dielectric hard hat
4. Full amber face shield
5. Dielectric booties to slip over work boots

D. Examples of work performed at this level (examples not intended to be all inclusive of every type of work!):
1. Removing any panel covers or barriers of energized equipment to perform investigative functions or inspections.
2. Working in a panel with the line side energized and the panel cover removed.
3. Installing a breaker into an energized electrical panel.
4. Pulling cables or wiring into energized panels
5. Pulling or installing fuses into energized parts.

E. Exposure to <u>over</u> 600 volts
1. The level of protection for 600 volts and above will be a full body 40cal. High Voltage Suit complete with a full Head Hood, Dielectric booties, and properly ratted High Voltage gloves.
2. Examples - Work performed at this level (examples not intended to be all inclusive of every type of work!):

a) Removing any gear covers or barriers of energized equipment to perform investigative functions or inspections.

b) Installing protective blankets or insulating devices on Buss work in an active High Voltage Substation.

c) Racking in a breaker into an energized electrical cabinet.

d) Pulling cables or wiring into energized switchgear.

e) Pulling or installing cut-outs on a utility pole.

3. Contact your Foreman or supervisor to obtain a Schmid Arc Flash Protection Kit which will have all of the above mentioned PPE. Check the kits before use to insure that all of the high voltage PPE has a current inspection certification. Do not use if it has expired!

F. Employees shall be trained in safety related work practices and procedural requirements as necessary to provide protection from the electrical hazards associated with their respective jobs. Employees shall be trained to identify and understand the relationship between electrical hazards and possible injury. Documentation shall be made when the employee demonstrates proficiency, be maintained for the duration of the employee's employment, and contain each employee's name and date of training.

1. An employee shall receive additional training (or retraining) under any of the following conditions:

a) If the supervision or annual inspections indicate that the employee is not complying with the safety related work practices.

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

c) If he or she must employ safety related work practices that are not normally used during his or her regular job duties.

2. Retraining should be conducted within 3 years.

G. The contract employer shall advise the host employer of:

1. Any unique hazards presented by the contract employer’s work.

2. Any unanticipated hazards found during the contract employer’s work that the host employer did not mention.

3. The measures the contractor took to correct any hazards reported by the host employer to prevent such hazards from recurring in the future.

H. Unqualified persons shall not be permitted to enter spaces that are required to be accessible to qualified employees only, unless the electric conductors and equipment involved are in an electrically safe work condition.

I. Qualified personnel permitted to work within the Limited Approach Boundary of exposed energized electrical conductors and circuit parts operating at 50 volts or more shall, at a minimum, be additionally trained in all of the following:

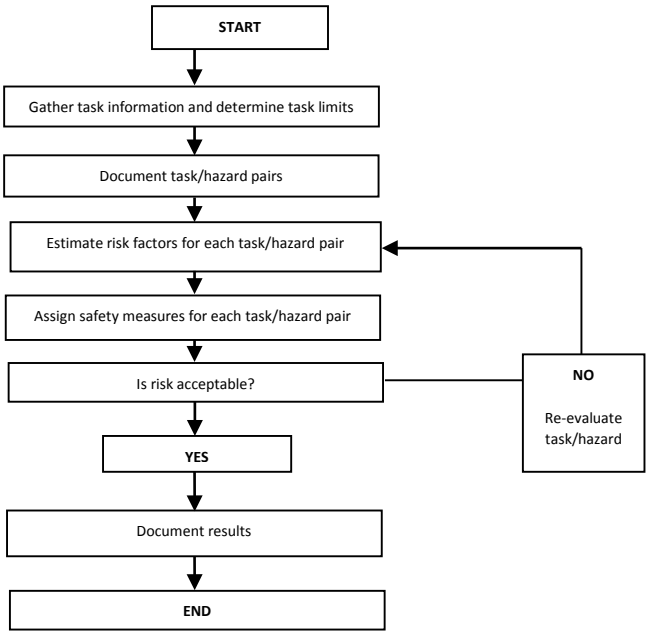
1. The skills and techniques necessary to distinguish exposed energized electrical conductors and circuit parts from other parts of electrical equipment.

2. The skills and techniques necessary to determine the nominal voltage of exposed energized electrical conductors and circuit parts.

3. Only qualified persons shall perform tasks such as testing, troubleshooting, and voltage measuring within the limited approach boundary of energized electrical conductors or circuit parts operating at 50 volts or more or where an electrical hazard exists.
4. The approach distances specified in Table 130.2 C and the corresponding voltages to which the qualified person will be exposed.
5. The decision-making process necessary to determine the degree and extent of the hazard and the personal protective equipment and job planning necessary to perform the task safely.

J. Schmid safety related work practices for working within the Limited Approach Boundary are the following:
1. Conduct daily evaluations and safety inspections through the shifts.
2. Anticipating unexpected events and conduct a job hazard analysis.
3. All electrical parts are considered live until zero energy is verified.
4. Work permits shall be utilized and posted on site (i.e. Lockout/Tagout and hot work).
5. Electrical flash arc hazard analysis will be conducted and the appropriate personal protective equipment identified.

K. Hazard Analysis should contain event severity, frequency, probability and avoidance to determine the level of safe practices employed. A hazard/risk evaluation shall be completed before work is started within the Limited Approach Boundary of energized electrical conductors and circuit parts operating at 50 volts or more or where an electrical hazard exists.



L. A job briefing should be held before starting each job and include all employees involved. The briefing should cover hazards associated with the job, work procedures involved, special precautions, energy source controls, and PPE requirements.

M. Test instruments, equipment, and their accessories shall meet the requirements of ANSI/ISA 61010-1, Safety Requirements for Electrical Equipment for Measurement, Control, and Laboratory Use -Part 1 General Requirements, for rating and design requirements for voltage measurement and test instruments intended for use on electrical systems 1000 Volts and below. When test instruments are used for the testing for the absence of voltage on conductors or circuit parts operating at 50 volts or more, the operation of the test instrument shall be verified before and after an absence of voltage test is performed.

N. All insulating PPE must be inspected before each day's use and immediately following any incident that can reasonably be suspected of having caused damage. Insulating gloves shall be given an air test, along with the inspection.

O. Such tests include:

1. Blankets, before first issue/every 12 months thereafter,
2. Gloves, before first issue and every 6 months,
3. Sleeves before first issue and every 12 months. Covers and Line hose shall be testing if insulating value is suspect.

P. Work on energized electrical conductors or circuit parts that are not placed in an electrically safe work condition, shall be considered energized electrical work and shall be performed by written permit only.

Q. Employees shall not enter spaces containing electrical hazards 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 shall not perform any task within the Limited Approach Boundary of energized electrical conductors or circuit parts operating at 50 volts or more or where an electrical hazard exists.

SECTION 45

BEHAVIOR BASED SAFETY PROGRAM

1. GENERAL REQUIREMENTS

A. Schmid has adopted this behavior based safety program for all projects and office locations. The program applies to all Schmid employees and their sub-contractors.

2. OBSERVATIONS

A. Observations provide direct, measurable information on employees' work practices identifying both safe and unsafe behaviors.

B. Upon completion of an observation, the observer is expected to have a discussion with the observed to get feedback. **The observer will:**

1. Review the observation with observed employee,
2. Start with a positive comments,
3. Reinforce safe behaviors observed first,
4. Describe and discuss unsafe behaviors observed,
5. Solicit from observed employee explanation of his/her unsafe behavior with open-ended questions,
6. Re-emphasize no consequence to observed employee.

3. TREND ANALYSIS

A. Schmid will compare these measurements and track these results by an acceptable method so that numerical and statistical comparisons can be made over time.

B. Once trend analysis is complete, appropriate action plans must be developed to address unsafe behaviors. **Action planning will include:**

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

4. TRAINING

A. All Schmid employees shall receive training upon initial hire or at any other time deemed necessary by Schmid Safety Director.

B. This training will include:

1. Program objectives and incident metrics reviewed,
2. How to conduct the observation,
3. How to complete the observation form,
4. What do the behaviors mean,
5. Feedback training and role play (mentoring and coaching),
6. Employees should be aware they may be observed at any time.

SECTION 46

SPILL PREVENTION/RESPONSE PROGRAM

These Guidelines aim to provide a tool for spill prevention/response and promote the development of more coherent and appropriate planning throughout Schmid. When implementing this spill prevention/response program it is the responsibility of each individual to follow Schmid policies and procedures. Schmid must have an inventory of all chemicals, evaluate chemical hazards and institute safeguards. Most importantly, SDS and HSFS binders must be maintained and readily available.

1. GENERAL REQUIREMENTS

A. Chemical substances will be labeled and stored in proper containers to minimize the potential for a spill. Whenever possible, chemicals should be kept in closed containers and stored so they are not exposed to storm water.

B. Facility inspections are to be conducted, (daily, weekly and monthly) documented and filed. Areas where chemicals may be used or stored must be maintained using good housekeeping best management practices. This includes, but is not limited to, clean and organized storage, labeling, and secondary containment where necessary.

C. Schmid will provide a proper spill kit that contains the appropriate supplies for materials that may be spilled. Supplies must be easily accessible when required, and considerations will be made for both the type and quantity of materials prior to the start of work.

D. All Schmid employees will be instructed on the proper response procedures for spilled materials. The training will include materials available for use, proper waste disposal, and communication procedures.

E. Schmid employees shall report all spills no matter how small to their supervisor immediately. Our method for immediate notification of any spill can have the appropriate measures taken and proper emergency response teams notified if required. Furthermore, required internal reporting and project recordkeeping help the re-evaluation of Schmid existing spill procedures.

F. Schmid has made a commitment to maintain a safe and environmentally sound habitat. This requires preparedness and continuous improvement in all phases of spill prevention/ response. Prevention however is not just the job of Schmid but of each individual employed by Schmid to be responsible in keeping chemicals safe on the job site, during storage and disposed of when required. Employees must follow the rules, understand each chemical’s hazards, and report unsafe conditions to their supervisor and ask if unsure of policy and procedures.

SECTION 47

MOBILE EQUIPMENT PROGRAM

1. GENERAL REQUIREMENTS

A. Only authorized employees shall be allowed to operate any mobile equipment as specified in the Training Requirements below.

B. At the beginning of each shift, the operator shall inspect and check the assigned equipment, any malfunctions in the equipment's operations shall be reported immediately to his/her supervisor and the equipment shall be locked/tagged out if necessary.

C. The operator shall make sure the warning signal (visual and or audible) is operating when the equipment is backing up and in operation as specified by the equipment manufacturer.

D. No personnel shall not be permitted to ride on equipment unless it is equipped to accommodate riders safely and they are authorized to be on the equipment.

E. The operator and passenger shall use access provided to get on or off of equipment. Do not jump to the ground.

F. No operator shall operate mobile equipment without the protection of an enclosed cab or approved eye protection.

G. Before starting the engine, the driver shall fasten seat belts and adjust them for a proper fit.

H. The operator shall not use, or attempt to use any vehicle in any manner or for any purpose other than for which it is designated and approved by the manufacturer.

I. The operator shall not load the vehicle/equipment beyond its established load limit and shall not move loads which because of the length, width, or height that have not been centered and secured for safe transportation.

J. The operator of a gasoline or diesel vehicle shall shut off the engine before filling the fuel tank and shall see that the nozzle of the filling hose makes contact with the filling neck of the tank.

K. No one shall be on the vehicle during fueling operations except as specifically required by design.

L. There shall be no smoking or open flames in the immediate area during fueling operation.

2. GENERAL TRAINING REQUIREMENTS

A. Authorization to operate mobile equipment shall be issued to employees after qualifying to operate the specific equipment through approved training by the following means:

1. Attending an approved operator training course
2. Successful passing of a written examination

3. Successful completion of a practical examination testing the individual's ability to competently operate the specified equipment.

B. Retraining shall be required for unsatisfactory/unsafe performance of job assignments.

SECTION 48

SILICA PROGRAM

1. OCCUPATIONAL EXPOSURE TO SILICA

A. General - Schmid will ensure that all potential sources of silica dust within our facility(s) or host employers are evaluated.

1. Evaluating and identifying potential sources of Silica, evaluating the associated potential hazards, communicating information concerning these hazards, and establishing appropriate procedures, and protective measures for employees.

B. Definition - Silica may be of several distinct types. For example, quartz is a crystalline form of silica and is the most common mineral in the earth's crust. When rock containing quartz is chipped, hammered, drilled, crushed, loaded, hauled, or dumped, small particles of silica are released into the air and can be inhaled by workers.

1. The silica sand used in sandblasting breaks into fine particles that stay in the air. If these particles are small enough to be inhaled deeply into the lungs, they are known as irrespirable crystalline silica. Inhaling these fine silica particles causes more lung damage than inhaling larger particles. This process causes rapid and severe forms of silicosis in sandblasters.

2. Silicosis - When workers inhale crystalline silica, the lung develops scar tissue around the silica particles. This process results in a lung disease known as silicosis. As more lung tissue is damaged by silica dust, breathing becomes more difficult, chest pain occurs, and death may result. Silicosis patients suffer shortness of breath, fever, and cyanosis. Some patients are diagnosed incorrectly as having pulmonary edema, pneumonia, or other lung diseases. The three types of silicosis are as follows:

a) Chronic silicosis, which occurs after 10 or more years of exposure to low concentrations of crystalline silica.

b) Accelerated silicosis, which occurs 5 to 10 years after exposure to high concentrations of crystalline silica.

c) Acute silicosis, which occurs a few weeks to 5 years after exposure to very high concentrations of crystalline silica.

C. Responsibility - Schmid Safety Director is solely responsible for all facets of this program and has full authority to make necessary decisions to ensure success of the program. The Safety Officer is the sole person authorized to amend these instructions and is authorized to halt any operation of the company where there is danger of serious personal injury.

1. Superintendent/General Supervisor - Monitors procedure to ensure compliance with this work practice.

a) Ensures that the initial determination for potential exposure has been accomplished before work begins.

b) Supervises the safe performance of work in accordance with this and other related work practices.

c) Assigns jobs only to qualified employees.

d) Use abrasive blasting materials that are less hazardous than those containing more than 1 percent crystalline silica. Because substitute abrasives may also have toxic effects, NIOSH recommends the use of engineering controls, work practices, and respiratory protection for all abrasive blasting, regardless of the type of abrasive used.

e) Recognize situations in which silica dust may be generated; plan to eliminate or control dust at its source.

f) Inform workers about their exposures to crystalline silica dust, the possible health effects of this dust, and the risk of silicosis.

g) Establish effective programs for monitoring the exposure of workers to crystalline silica dust. Conduct air monitoring to measure worker exposure and check that controls are working properly.

h) Train workers about safe work practices to reduce exposure to crystalline silica. For example, workers should remove dust from equipment with a water hose instead of compressed air. Use vacuums with high-efficiency particulate air filters (HEPA filters). Use wet sweeping instead of dry sweeping.

i) Post warning signs to mark the boundaries of work areas that may be contaminated with respirable crystalline silica.

j) Provide workers with material safety data sheets (MSDSs) for silica, masonry products, alternative abrasives, and other hazardous materials to which they may be exposed.

k) Provide workers with information about safe handling, labeling, and storage of toxic materials.

l) Write all signs, labels, instructions, and other material for workers in easy-to-read English and in any other languages needed for workers' understanding of the material.

m) Provide engineering controls such as containment methods (enclosed blast-cleaning machines and cabinets). Provide equipment for wet drilling or wet sawing of silica-containing materials. Make sure workers use tools with dust collection systems. Use local exhaust ventilation to prevent release of dust into the air.

n) Provide appropriate respiratory protection for workers, including NIOSH certified respirators and a respiratory protection program to ensure proper use and maintenance of respirators.

o) Provide regular medical exams for workers who may be exposed to respirable crystalline silica.

p) Provide either disposable protective clothes or protective clothes that are laundered at the workplace.

q) Provide areas for workers to shower and change into clean clothes before leaving the worksite. This practice prevents contamination of other work areas, cars, and homes.

r) Report all cases of silicosis to State health departments and to OSHA (1–800–321–6742) or MSHA (1–800–746–1553).

2. Employees - Uses the protective and safety equipment as assigned and directed.

a) Abides by the requirements of this and site specific work practices.

b) Use proper respiratory protection when engineering controls cannot keep silica exposures at or below safe limits.

c) Remove dust from equipment with a water hose instead of compressed air. Use vacuums with HEPA filters. Use wet sweeping instead of dry sweeping.

d) Change into disposable protective clothes at the worksite.

e) Shower and change into clean clothes before leaving the worksite to prevent contamination of other work areas, cars, and homes.

f) Do not eat, drink, use tobacco products, or apply cosmetics in dusty areas.

g) Wash hands and face before eating, drinking, or smoking outside dusty areas.

h) Do not park cars where they can be contaminated with silica or other pollutants.

The personal hygiene habits mentioned above are important because workers may take home silica and other harmful substances on their clothes, skin, hair, and automobiles. Exposure to these substances may make other household members sick.

D. Written Program - Schmid will review and evaluate this standard practice instruction in accordance with the following:

1. On an annual basis
2. When changes occur to governing regulatory sources that require revision
3. When changes occur to related company procedures that require a revision
4. When facility operational changes occur that require a revision
5. When there is an accident or close-call that relates to this area of safety
6. Anytime the procedures fail

E. Effective implementation of this program requires support from all levels of management. This written program will be communicated to all personnel that are affected by it. It encompasses the total workplace, regardless of the number of workers employed or the number of work shifts. It is designed to establish clear goals and objectives.

1. Related programs - The following safety programs are used in consonance with this program:

a) Ventilation Safety Program
b) Confined Space Entry Program
c) Respiratory Protection Program
d) Hazard Communication Program
e) Air Contaminants Safety Program

F. Hazard Overview - Crystalline silica has been classified as a human lung carcinogen.

1. The silica sand used in sandblasting breaks into fine particles that stay in the air. If these particles are small enough to be inhaled deeply into the lungs, they are known as respirable crystalline silica. Inhaling these fine silica particles causes more lung damage than inhaling larger particles. This process causes rapid and severe forms of silicosis in sandblasters.

2. Abrasive blasting involves forcefully projecting a stream of abrasive particles onto a surface, usually with compressed air or steam. Because silica sand is commonly used in this process, workers who perform abrasive blasting are often known as sandblasters.

G. Health Effects - The silica sand used in abrasive blasting typically fractures into fine particles and becomes airborne. Inhalation of such silica appears to produce a more severe lung reaction than silica that is not freshly fractured. This factor may contribute to the development of acute and accelerated forms of silicosis among sandblasters.

1. Sandblaster working in the dusty atmosphere created by airborne particles of silica sand without proper personal protective equipment and who remain in an atmosphere containing these particles may inhale dangerous or lethal amounts unknowingly.

H. Engineering Controls - Schmid will install and maintain engineering controls where possible to eliminate or reduce the amount of silica in the work area and to reduce build-up of

dust on equipment and machinery surfaces. Preventative maintenance will be conducted as a high priority to ensure effectiveness of the Engineering Controls. In the event that wet controls are not feasible, the law requires the use of engineering or administrative controls to prevent silica exposures. These include:

1. Vacuum ventilation
2. The designation of cutting areas isolated from other workers
3. The provision of a complete respiratory program for any workers who perform dry operations.
4. General exhaust ventilation system
5. Local ventilation systems
6. Dust collection systems
7. Enclosed cabs for workers
8. Water sprays for dust reduction
    a) In December 2006, Acting Governor Richard Codey signed a law that bans the dry cutting and dry grinding of masonry materials on construction worksites. The law requires the use of wet methods to dampen dust and prevent exposures to silica. It appears to be the first such law in the nation.
9. Wet Drilling when drilling operations are in effect
10. Drill platform skirts when drilling operations are in effect

I. Administrative Controls - Where Engineering Controls are not feasible Administrative Controls will be attempted where possible to eliminate or reduce the amount of silica or environmental dusts each worker is exposed to. Where possible controls will include, but are not limited to:

1. Job-specific training programs
2. Job rotation
3. Job enlargement
4. Job pacing variations
5. Checklists for job improvement
6. Policies and procedure development
7. Regular job inspections and review
8. Employee feedback surveys

J. Personal Protective Equipment (PPE) - Where Administrative Controls are not feasible PPE will be selected and used through the Job Hazard Analysis Program. Supervisors will ensure that equipment selected will meet the following requirements:

1. It will be appropriate for the particular hazard
2. It will be maintained in good condition
3. It will be properly stored when not in use, to prevent damage or loss
4. It will be kept clean, fully functional and sanitary
5. Hazards associated with wear of protective clothing, PPE, personal clothing and jewelry. Protective clothing and PPE can present additional safety hazards. Supervisors will ensure workers wear appropriate clothing and PPE. These items will be worn so as not create additional hazards.
6. Personal clothing and jewelry will be monitored by the immediate supervisor. Clothing or jewelry that could become entangled in tools, equipment or machinery or of an excessively flammable nature will be prohibited.

7. Documentation - PPE requirements will be documented on a Protective Measures Determination form (Job Hazard Analysis Program) and properly filed.

8. Types of PPE. Where required, PPE will include, but are not limited to:
   a) Abrasive blasting gloves
   b) Appropriate respirators
   c) Body shields
   d) Aprons
   e) Non-slip and steel-toed shoes
   f) Full eye protection
   g) Full-body jump suits for dust protection
   h) Hard hats
   i) Caps
   j) Hair net
   k) Foot guards
   l) Respirators

9. Respirator Program - Prevents workers from inhaling pollutants. Appropriate respiratory protection equipment and programs should be provided whenever engineering controls and work practices cannot keep concentrations of airborne silica at or below safe limits.
   a) Workers' who perform sandblasting must use the type of respirator recommended by NIOSH for their particular job. Regardless of the abrasive used, NIOSH recommends a respirator that provides a constant supply of clean air through a line that connects to a hood or helmet worn by the worker. The respirator airline must be separate from the line that supplies air for blasting. This device is known as a type CE abrasive-blasting respirator operated in the continuous-flow mode.
   b) Periodic air monitoring must be done.
   c) Regular training of workers in respirator use.
   d) Selection of proper NIOSH-approved respirators.
   e) A medical determination of the worker's ability to perform the work while using a respirator.
   f) Respirator fit testing.
   g) Maintenance, inspection, cleaning, and storage of respirators.
   h) The respiratory protection program should be evaluated regularly by the employer.

K. Procedures for Atmospheric Testing - Atmospheric testing for Silica Dust is required for two distinct purposes evaluation of the hazards of the work area and verification that acceptable particulate levels exist in that area.

1. Evaluation testing - Schmid will ensure that the atmosphere is analyzed using equipment of sufficient sensitivity and specificity to identify and evaluate any hazardous particulate levels that may exist or arise.

2. Evaluation and interpretation of these data, and development work procedures, will be done by, or reviewed by, a technically qualified professional (e.g., OSHA consultation service, or certified industrial hygienist, registered safety engineer, certified safety professional, etc.) based on evaluation of all serious hazards.

L. Training - Schmid will determine whether training required for specific jobs will be conducted in a classroom or on-the-job. The degree of training provided shall be determined by the complexity of the job and exposure hazards associated with the individual job.

1. Initial Training - Prior to job assignment, this employer shall provide training to ensure that the hazards associated with silica are understood by employees and that the knowledge, skills and personal protective equipment required are acquired by employees. The training shall as a minimum include the following:

a) Each authorized employee shall receive training in the recognition of applicable hazards involved with the particular job and job site, as well as the methods and means necessary for safe work.

b) The specific nature of the operation which could result in exposure to Silica dust.

c) The purpose, proper selection, fitting, use and limitation of personal protective equipment (PPE).

d) The adverse health effects associated with excessive exposure to Abrasive Blasting materials.

e) The engineering controls, administrative controls and work practices associated with the employee's job assignment, including training of employees to follow relevant good work practices.

f) The contents of any compliance plan in effect.

g) The employee's right of access to records under OSHA 29 CFR 1910.1020.

M. Retraining shall be provided for all affected employees as a minimum under the following conditions:

1. Whenever there is a change in job assignments
2. Whenever there is a change in personal protective equipment
3. Whenever there is a change in equipment that presents a new hazard
4. Whenever there is a change in processes that presents a new hazard
5. Whenever their work takes them into hazardous areas
6. Whenever there is a change in Abrasive Blasting safety procedures
7. Whenever safety procedure fails resulting in a near-miss, illness, or injury
8. Additional retraining shall also be conducted whenever a periodic inspection reveals, or whenever this employer has reason to believe, that there are deviations from or inadequacies in the employee's knowledge of known hazards, or use of equipment or procedures.
9. The retraining shall reestablish employee proficiency and introduce new equipment, or revised control methods and procedures, as necessary.
10. Certification - This employer shall certify that employee training has been accomplished and is being kept up to date. The certification shall contain a synopsis of the training conducted, each employee's name, and dates of training.

N. Monitoring and Measurement Procedures

1. The results of air monitoring for crystalline silica will be used to select and evaluate engineering controls and respiratory protection.
2. Eight Hour Time Weighted Average (TWA) Evaluations. Where possible 8 hour TWAs will be taken so that the average eight-hour exposure is based on a single 8 hour sample. Air samples will be taken in the employee’s breathing zone. Only qualified personnel will be selected to conduct evaluations.

3. Ceiling Evaluations - Where possible, measurements to determine employee ceiling exposure will be taken during periods of maximum expected airborne concentrations of particulates. Each measurement will consist of a 15 minute sample or series of consecutive samples totaling 15 minutes. Air samples will be taken in the employee's breathing zone and only by qualified personnel.

4. Peak and Above Ceiling Evaluations. Measurements to determine employee peak exposure will be taken during periods of maximum expected airborne concentrations of particulates. Each measurement will consist of a 10 minute sample or series of consecutive samples totaling 10 minutes. A minimum of three measurements will be taken on one work shift and the highest of all measurements taken will be assumed to be an estimate of the employee's exposure. Air samples will be taken in the employee's breathing zone and only by qualified personnel.

5. Sampling Methods - Sampling and analysis will be conducted in accordance with acceptable industrial hygiene practices. Sampling data will be maintained for the duration of employment of the affected employee plus 30 years.

O. Emergency First Aid Procedures - In the event of an emergency, institute first aid procedures and send for first aid or medical assistance in accordance with local procedures.

1. Eye Exposure - Wash immediately with large amounts of water. Lifting the lower and upper lids occasionally, get medical attention as soon as possible.

2. Skin Exposure (imbedded particulates) - Immediately flush with copious amounts of water. Remove any clothing blocking exposed skin areas and flush exposed skin areas, get medical attention as soon as possible.

3. Respiratory Exposure - Get the victim to open, fresh air immediately. If breathing has stopped perform CPR. Keep the victim warm and at rest. Get medical attention as soon as possible.

4. Rescue Considerations - Don't become a second victim. Move the affected person from the hazardous area. If the exposed person has been overcome, initiate local emergency notification procedures. Understand the facility's emergency rescue procedures and know the locations of rescue equipment before the need arises.

P. The medical surveillance provisions of this standard practice instruction are intended to provide our employees with a comprehensive approach to prevention of Silicosis. The primary purpose is to supplement the OSHA standard's primary mechanisms of disease and illness prevention, the elimination or reduction of airborne concentrations particulates and sources of ingestion, by facilitating the early detection of medical effects associated with exposure to Silica particulates. The ultimate goal will be to develop a plan for reducing exposures of employees whose X-rays show changes consistent with silicosis.

1. All medical examinations and procedures will be performed by or under the supervision of a licensed physician and are to be provided without cost to employees at a reasonable time and place.

2. The medical surveillance provisions contemplate two phases of medical surveillance; one is initial medical surveillance, the other is a medical surveillance program.

3. Initial medical surveillance consists of X-rays read by a specialist in dust diseases. It will be provided to our employees occupationally exposed to airborne concentrations of Silica particulates on any one day at or above the action level as well as to employees performing high exposure trigger tasks during initial exposure assessment.

4. Routine and follow-up level medical surveillance - If an employee's airborne particulates exposure is of concern (based on healthcare provider recommendation) this employer shall provide a medical surveillance program to the employee consisting of routine monitoring as recommended by a healthcare provider. If a routine and follow-up test for Abrasive Blasting Materials or particulates exceed recommended exposure criteria the employee will be removed from exposure. Employees will be notified in writing of any medical monitoring results within five working days after the receipt of monitoring results.

5. This employer will provide a full medical surveillance initiation program to any employee, including periodic medical exams (based on healthcare provider recommendation), when it is determined that the employee's exposure to Silica particulates is detrimental to his or health.

6. Examination criteria - The content and frequency will be at the discretion of the attending physician. Each examination as a minimum will include:

a) A work and medical history
b) A physical examination
c) Appropriate X-rays
d) As required by the healthcare provider

7. Medical consultations will be provided upon notification by an employee under the following conditions:

a) The employee has developed symptoms commonly associated with Silicosis.

b) The employee has demonstrated difficulty in breathing during fit testing or use of a respirator.

8. Cost - This employer will bear the expense of the medical surveillance program.

9. Medical Removal Protection - This employer will remove an employee from work having an exposure to Abrasive Blasting Materials or particulates under the following conditions:

a) Exposure limit exceedance - When it is determined from workplace monitoring that airborne particulates exceed OSHA or NIOSH recommended exposure limits.

b) Evidence of silicosis - When it is suspected from any source that an employee has any evidence of silicosis.

c) Medical determination - On each occasion that a final medical determination results in a medical finding, determination, or opinion that the employee has a detected medical condition which places the employee at increased risk of impairment to health from exposure to Abrasive Blasting Materials or particulates.

10. Return to work

a) Any employee removed from exposure to Silica may return to former job status when approved by their healthcare provider. A Written recommendation that the employee no longer has a detected medical condition which places the employee at increased risk of impairment of health will be required by this company before return to work is authorized.

Q. Entry Control - Those work areas meeting the criteria for delineation as an Abrasive Hazards Work Area will be restricted only to trained and authorized employees. Physical barriers, ropes, fencing or any other equally effective means of entry control may be used to control entry.

R. Hazard Marking - Abrasive Hazards Work Areas will be identified by signage and color coding as needed. A sign reading **Danger Abrasive Hazards Work Area** or similar language will be used to satisfy the requirement for a sign.

S. Hazard Notification - This employer shall inform employees working near Silica and/or Abrasive Hazards Work Areas, by posting danger signs, conducting awareness training, or by any other equally effective means, of the existence and location of and the danger posed by abrasive blasting.

T. Definitions

1. Abrasive - A solid substance used in an abrasive blasting operation.
2. Abrasive blasting respirator - A continuous flow air-line respirator constructed so that it will cover the wearer's head, neck, and shoulders to protect him from rebounding abrasive.
3. Blast cleaning barrel - A complete enclosure which rotates on an axis, or which has an internal moving tread to tumble the parts, in order to expose various surfaces of the parts to the action of an automatic blast spray.
4. Blast cleaning room - A complete enclosure in which blasting operations are performed and where the operator works inside of the room to operate the blasting nozzle and direct the flow of the abrasive material.
5. Blasting cabinet - An enclosure where the operator stands outside and operates the blasting nozzle through an opening or openings in the enclosure.
6. Clean air - Air of such purity that it will not cause harm or discomfort to an individual if it is inhaled for extended periods of time.
7. Dust collector - A device or combination of devices for separating dust from the air handled by an exhaust ventilation system.
8. Exhaust ventilation system - A system for removing contaminated air from a space, comprising two or more of the following elements:
    (a) Enclosure or hood,
    (b) Duct work,
    (c) Dust collecting equipment,
    (d) Exhauster, and
    (e) Discharge stack.
9. Particulate filter respirator - An air purifying respirator commonly referred to as a dust or a fume respirator, which removes most of the dust or fume from the air passing through the device.
10. Respirable dust - Airborne dust in sizes capable of passing through the upper respiratory system to reach the lower lung passages.
11. Rotary blast cleaning table - An enclosure where the pieces to be cleaned are positioned on a rotating table and are passed automatically through a series of blast sprays.
12. Abrasive blasting - The forcible application of an abrasive to a surface by pneumatic pressure, hydraulic pressure, or centrifugal force.

SECTION 49

GENERAL WASTE MANAGEMENT PROGRAM

1. GENERAL WASTE MANAGEMENT PLAN

These Guidelines aim to provide a tool for waste management planning and promote the development of more coherent and appropriate planning throughout Schmid. When implementing waste management planning it is the responsibility of each individual to follow Schmid policies and procedures.

Waste management plans have a key role to play in achieving sustainable waste management. Their purpose is to give an outline of waste streams and treatment options. More specifically, they aim to provide a planning framework for the following:

A. Schmid shall estimate the waste that will be generated prior to work being performed so that the need for containers and waste removal can be determined. Trash and scrap materials will be considered waste.

B. Waste materials shall be properly stored and handled to minimize the potential for a spill or impact to the environment. During outdoor activities, receptacles will be covered with a tarp to prevent dispersion of waste materials and to control the potential for run-off.

C. Schmid will properly segregate waste materials to ensure opportunities for reuse or recycling.

D. All Schmid employees will be instructed on the proper disposal method for wastes. This will include general instruction on disposal of non-hazardous wastes, trash, and scrap materials. If wastes generated are classified as hazardous, employees will be trained to ensure proper disposal. This training will be conducted at the beginning of each shift and conducted by the supervisor.

2. **WASTE MANAGEMENT PLANNING** is continuously reviewed and revised at Schmid to match increasing complexity of waste issues and sustainability standards. The solution for many waste management problems require the involvement of several participants/ authorities and coherent planning to help avoid the unnecessary duplication effort and thus benefits all participants to work together.

SECTION 50

RETURN TO WORK PROGRAM

1. RETURN TO WORK

A. Statement – Schmid is committed to providing a healthy and safe workplace for our workers. Preventing work-related injuries and illnesses is our primary goal.

The Return To Work (RTW) Program provides opportunities for a worker who is injured on the job to return to work at full duty. If the worker is not physically capable of returning to full duty, the program provides opportunities to perform the regular job with modifications or, when available, to perform alternate temporary work that meets the worker's physical capabilities.

Schmid and its workers are committed to cooperating and participating in their RTW Program.

B. Scope - The RTW Program applies to all workers of the company, both unionized and non-unionized, and management. The program covers both work and non-work related injuries and illnesses.

C. Objectives

1. To reduce the number of days lost to injury or illness.
2. To lessen the financial and emotional impact of the injury or illness on the worker by intervening for an early and safe RTW.
3. To reduce the costs related to work and non-work-related injury or illness.
4. To educate workers on disability management.
5. To comply with all legislation, including the *Workplace Safety and Insurance Act* and *Human Rights Code.*
6. To reduce the number of future injuries and illnesses through a healthy and safe workplace.

2. ROLES AND RESPONSIBILITIES

A. Schmid/Employer

1. Provide a safe work environment.
2. Promptly report work-related injuries/illnesses to management when they occur.
3. Develop written return to work policies and procedures that are fair and consistently applied to all workers covered by the program.
4. Educate all workers about the RTW Program.
5. Train all supervisors in effective return to work strategies.
6. Train workers on proper reporting of incidents and incident investigation.
7. Communicate regularly with workers during their time away from work, and monitor their progress when they return.
8. Work with the worker and treating health professional to identify suitable work.
9. Modify the workplace as required to accommodate workers who are disabled due to illness or injury.
10. Monitor the progress of workers in modified work programs and meet with them regularly to ensure they will be successful in achieving their return to work goal.

B. Worker

1. Know and follow safety policies and procedures.

2. Report any injury/illness immediately to your supervisor and Safety Representative.
3. If medical attention is necessary, inform the treating health professional that return to work opportunities are available in the workplace to accommodate their physical abilities. Keep the treating health professional informed about return to work options and injury/illness symptoms.
4. Communicate with the employer through the recovery period, and cooperate with the employer in finding suitable employment for return to work.
5. Inform the Safety Representative or other workplace representative(s) about any concerns with treatment, benefits, work duties, changes in circumstances, etc.
6. Comply with the recommendations of treating health professionals; attend all medical or rehabilitation appointments regularly; attend independent assessments as requested.
7. Take an active role in developing their return to work plan.
8. Obtain the necessary documentation from the treating health professional as may be required by the employer (for example, functional abilities information).
9. Report any concerns with the return to work to their supervisor so the problems can be addressed promptly.
10. Attend scheduled return to work progress meetings with Schmid management.

C. Supervisor/Safety Representative
1. Take appropriate action when an injury or illness is reported.
2. Participate in return to work planning.
3. Identify appropriate work duties, transitional work options and temporary or permanent job accommodations for employees with disabilities.
4. Know who to refer a worker with a disability to if the worker is having difficulties before, during or after they return to work. For example, the RTW Safety Representative.
5. Monitor safe work practices of workers who are returning to work.
6. Answer questions and concerns about workers with disabilities, job modifications, job restructuring, etc., while maintaining the confidentiality of the worker's situation.
7. Notify the Safety Representative about potential candidates for the disability management or RTW Program.
8. Promote safe work practices and support the efforts of the company's health and safety program.

D. Health Care Professionals
1. Provide appropriate, effective health care that facilitates recovery and expedites return to productive work.
2. Provide information on the worker's functional abilities when requested by Schmid or the worker.
3. Complete functional assessment forms thoroughly, being alert to job demands that might cause re-injury or aggravation of an existing condition, (see copy of Return to Work Agreement at the end of this section).
4. Suggest ways in which tasks could be modified to place less strain on existing injuries or conditions.
5. Establish and maintain open communication with the workplace, having regard for patient confidentiality.
6. Provide timely information to Schmid.

3. PROCEDURES AND PROCESS

A. A worker who is injured at work must immediately report the incident to their supervisor**.**

B. The supervisor is required to:

1. Obtain immediate medical attention for the worker who is injured or ill.
2. Arrange for transportation to get medical care, if needed.
3. Follow company requirements for reporting work-related injuries and illnesses.

a) Complete a written incident investigation report after a thorough investigation.

b) Incident reports will include all pertinent information that address the specifics of the incident, including the who, what, where, why and how the incident occurred. Incident reports are important for the injured employee, medical professionals and insurance, if a workers compensation claim were made.

c) Witness statements that are written and signed by those who can verify the incident, if applicable.

d) All reports, medical records and documentation will be maintained by Schmid's corporate office per its recordkeeping standards.

4. Maintain contact with the worker through the recovery period.

a) All records and communications with the worker will be maintained and kept by Schmid. These records may include communications with medical representatives, claim representatives, medical records etc.

b) All records, conversations and correspondence will take into consideration the rights to confidentiality of the worker.

C. The employer and worker will work together for the RTW Program.

D**.** The worker is responsible for following medical restrictions on the job.

E. Following the worker's return to work, the Safety Representative will monitor the worker's progress to help resolve any difficulties and ensure that restrictions are carefully followed.

F. The worker must immediately report any difficulties performing assigned work, at which point, the supervisor and worker will work to address the problem.

4. COMMUNICATION AND TRAINING

The success of our RTW Program depends on everyone involved in the process being informed of the program.

The initial communication to all workers is through an information package created and distributed to all workers and management covered by the program. All new workers will receive the information package within five business days of starting with the company. This will be followed by training so they understand how the program works. Additional sessions will be regularly scheduled.

The information package will be reviewed each year and any changes will be communicated by the supervisor or Safety Representative to workers immediately, or as soon as possible, after the changes are made.

In addition to communication to all workers and management, all managers will receive training when the program is first implemented and will receive follow-up training each year after that.

Schmid will communicate with all treating health professionals by sending them a letter advising them that we have a RTW Program. We will also communicate with them as needed to let them know about changes and to clarify any issues.

5. **EVALUATION**

An evaluation of the Schmid RTW Program will be completed at the end of each year. The Safety Representative for Schmid will complete the evaluation and present it to senior management. The purpose of the evaluation is to determine if Schmid is meeting the objectives of the program.

We are committed to using the results of our evaluation to improve our program.

Return to Work Agreement

Employee Name:_____

Signature:_____

Date:_____

Supervisor Name:_____

Signature:_____

Date:_____

Modified Duty Period to _____ (not to exceed 120 days)

Medically Appropriate Modified Duty Period Extension to_____

Employee's essential job functions prior to the injury/illness:_____

_____

Description of required work modification:_____

_____

_____

Medical restrictions as submitted by employee's physician:_____

_____

_____

Adjust job functions accordingly as limits are removed by physician.
Employee initials each update.

Date employee returned to regular job without restrictions:_____

SECTION 51

VACUUM TRUCKS PROGRAM

1. VACUUM TRUCKS

A. Hazards - Vacuum truck owners and operators, as well as facility personnel, should be aware of the numerous potential hazards associated with vacuum truck operations in petroleum facilities, including but not limited to:

1. Sources of ignition.
2. Flammable atmospheres.
3. Potential hazards associated with the surrounding area.
4. Toxic vapors and their PEL's and STEL's.
5. Additional hazards such as slips and falls, spills and releases, fires and explosions, and accidents within the facility or on the highway.

B. Vacuum truck personnel working in petroleum facilities shall be:

1. Trained in the safe operation of the vacuum equipment.
2. Familiar with hazards of petroleum products, by-products, wastes and materials being transferred.
3. Aware of relevant government and facility safety procedures and emergency response requirement.
4. Aware of MSDS and appropriate PPE.

C. All personnel shall leave the vacuum truck cab during loading and off-loading operations and when transferring flammable liquids or hazardous materials.

D. Vacuum truck operators shall:

1. Remain positioned between the vacuum truck and the source or receiving tank, vessel, or container and within twenty-five (25) feet of the vacuum truck throughout the duration.
2. Monitor the transfer operation and be ready to quickly close the product valve and stop the pump in the event of a blocked line or release of material through a broken hose or connection.

E. Smoking, or any other source of ignition, shall not be permitted within at least one hundred feet (depending on local procedures and atmospheric conditions) of the truck, the discharge of the vacuum pump or any other vapor source.

F. Training Requirements - Vacuum truck operators shall be trained and properly licensed in accordance with applicable regulations.

1. Vacuum trucks shall not enter into tank dike areas until such areas have been checked and/or monitored and rendered safe.
2. Vacuum trucks cargo tanks shall be depressurized.
3. Vacuum truck operators must be aware of the effect of speeds, turns and the changing center of gravity.
4. Vacuum truck operators shall maintain proper distances when operating vacuum trucks inside facilities with restricted clearances.

G. Under normal conditions, the absence of oxygen minimizes the risk of ignition in a vacuum truck. However, operating rotary lobe blowers and vacuum pumps at high speeds creates high air movement and high vacuum levels, resulting in high discharge air temperatures and high discharge vapor concentrations that can present potentially ignitable conditions.

2. SAFE OPERATING PROCEDURES

A. Pre-Evacuation - Before beginning operations, vacuum truck operators shall obtain any required permits and inspect vacuum trucks, equipment and loading/off-loading sites to assure safe operations.

1. The vacuum truck service technician shall:

a) Measure and record product thickness in all the wells.

b) Determine the wells to vacuum based on free product thickness (the wells with the most free product should be evacuated first). If additional wells contain product (other than the proposed wells to be vacuumed), the procedures shall be altered to include the evacuation of all wells containing at least two inches of free product.

c) Ensure that the truck has a RPM gauge on the pump.

d) Confirm that the vacuum truck is empty and clean. Confirm presence of a check valve between truck and well. The check valve may be located on the evacuation apparatus or on the inlet side of the vacuum truck pump.

e) Confirm that the vacuum truck has been grounded in accordance with Section 5.4.2 of API Publication No. 2219 - Safe Operation of Vacuum Trucks in Petroleum Service. The areas where vacuum trucks will operate must be free of hydrocarbon vapors in the flammable range. The areas where the vacuum truck operator and others work without respirators must also be at or below air-contaminant PEL's/STEL's. If there is any question whether the area is vapor-or toxic gas-free, atmospheric testing shall be performed by a qualified person using properly calibrated and adjusted detectors. Testing shall be conducted prior to starting any operations, and if necessary, during operations, including but not limited to the following:

(1) When operations in the area are subject to change such as automatic pump start-up or product receipt into, or transfer out of, a tank located in the vicinity of the transfer operations.

(2) When off-loading.

(3) When atmospheric conditions change such as wind direction.

(4) When an emergency situation, such as product release, occurs in within the facility that may affect atmospheric conditions in the transfer area.

B. While Vacuuming

1. The vacuum truck service technician shall:

a) Install the well evacuation apparatus. The drop tube should be set one foot below the groundwater/ free product interface. However, vacuuming from a hydropunch well does not require a drop tube.

b) Connect vacuum truck hose to apparatus prior to application of vacuum. Vacuum hose constructed of conductive material or thick walled hose with imbedded conductive wiring, shall be used when transferring flammable and combustible liquids when the potential for a flammable atmosphere exists in the area of operations. Conductive hose shall provide suitable electrical conductance less than or equal to one mega ohm per one hundred feet (as determined by the hose manufacturer). Thin walled metallic spiral-wound conductive hoses should not be used because of the potential for electrical discharge through the thin plastic that covers the metal spiral.

c) A number of methods can be used by vacuum truck operators to safely vent vacuum pump exhaust vapors, including but not limited to the following:

(1) Operators can prevent dieseling by locating the vacuum truck upwind of vapor sources and by extending the vacuum pump discharge away from the diesel engine air intake.

(2) Vapors may be returned to the source container using conductive and closed connections.

(3) Vapors may be vented into the atmosphere to a safe location using a safety venture.

(4) Vacuum truck operators may provide vertical exhaust stacks, extending approximately twelve feet above the vacuum truck (or higher if necessary), to dissipate the vapors before they reach ignition sources or other potential hazards and personnel.

(5) Vacuum truck operators may attach a length of exhaust hose to the vacuum exhaust that is long enough to reach an area that is free from potential hazards, sources of ignition, and personnel. The hose should be preferably extended fifty feet downwind of the truck and away from the source of the liquids.

d) Commence evacuation activities. In order to confirm that the vacuum pump is operating at or near manufacturer's recommended RPM, read the vacuum gauge on the truck vacuum pump and compare to the RPM noted on the pump curve for the truck. The operator should adjust the RPM if necessary. Maintain the recommended RPM for the duration of the vacuuming. If tank bed wells and non-tank bed wells are manifolded together, take necessary steps to reduce vacuum on the tank bed (i.e. install valve to control vacuum). If only tank bed wells are vacuumed, use the minimum vacuum necessary to recover free product.

e) The complete vacuum transfer system needs to be bonded so that there is a continuous conductive path from the vacuum truck through the hose and nozzle to the tank or source container and grounded to dissipate stray currents to earth (ground). Prior to starting transfer operations, vacuum truck need to be grounded directly to the earth or bonded to another object that is inherently grounded (due to proper contact with the earth) such as a large storage tank or underground piping. A safe and proper ground to earth may be achieved by connecting to any properly grounded object including but not limited to any one or more of the following examples:

(1) A metal frame of a building, tank, or equipment that is grounded.

(2) An existing facility grounding system such as that installed at a loading rack.

(3) Fire hydrants, metal light posts, or underground metal piping with at least ten feet of contact with earth.

(4) A corrosion free metal ground rod of suitable length and diameter (approximately nine feet long and 5/8 inch in diameter), driven eight feet into the earth (or to the water table, if less).

C. After Vacuuming

1. The vacuum truck service technician shall:

a) Move truck to level ground, gauge fluid levels in truck, and convert the fluid level measurement to volume.

b) Record free product thickness for all the wells specified by the ERAC.

c) Sign and complete field copy of the waste manifests.

d) For precautions for travel and off-loading for the vacuum truck, refer to the API Publication No. 2219.

3. REPORTING

A. Field Report - Individual field reports shall be submitted after each vacuuming event. If free product does not exist at the location for two consecutive vacuuming events, the automotive maintenance manager shall be notified by the Schmid Project Manager prior to any additional vacuuming events in order to discuss if the continuation of the vacuuming is necessary.

B. Final Report - A final report must be completed and submitted to the office by the due date established in the approval letter.