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Safety Policy Statement

Penn Installations takes pride in making tomorrow healthier for our people, projects and community. Safety is paramount and it is our goal to instill a culture of safety throughout our corporate structure. It is embedded in our company values to provide the safest workplace for our employees.

It takes the commitment of every employee to make Penn Installations a great place to work. We challenge each and every one of you to work productively safe and are vigilant to safe work practices. Our goal is to send everyone home unharmed.

Thank you for your commitment to building a healthier workplace.

Productively Safe!

Howard Bernstein, President

SAFETY PROGRAM OUTLINE

Injuries and illness arising from the work place are an undesired consequence of work activity that causes personal loss, suffering and financial losses to the Company. It is, therefore, important that every employee understand the Company goal is to continually eliminate potential causes of accidents. Each employee has the right to a safe and healthful work place. With this goal in mind, the Company feels that both employee and employer must make a commitment collectively and individually. We must daily renew our pledge to work in such a way as to assure the safety and wellbeing of those who work around us, and ourselves.

Because it is each person's responsibility to eliminate job hazards or call them to the attention of the person in charge so that hazards will get proper attention, each individual must share equally in the responsibility to be continuously watchful for conditions or situations which violate State or Federal regulations or common sense rules of good safety practice. We must be alert to such conditions and not assume the next person will take care of the problem.

Each person has a responsibility to their self and fellow employees to report to work in a physical and mental condition which will insure their ability to perform the task for which they are employed. You must be capable of performing your work efficiently and be mentally alert to the surroundings to ensure your own safety as well as the safety of those around you. It is the responsibility of each employee to perform their task safely and in compliance with all appropriate rules and regulations.

Everyone has the right to a safe work place and each person has the responsibility to make it safe. The ultimate responsibility for employee safety at each site rests with the Management. Each supervisor at all levels of Penn Installations accepts their responsibility fully and seeks excellence in maintaining our dedication to safety standards. Each employee must realize that any failure to comply with appropriate rules and regulations, or safety instructions given by a representative of supervision may result in reprimand and/or dismissal.

Responsibility

- Management is ultimately responsible and accountable for providing a safe and healthy work site.
- The Safety Director is solely responsible for all facets of the Safety and Health Program and has full authority to make necessary decisions to ensure the success of this program.
- The Safety Director is also qualified, by appropriate training and experience that is commensurate with the complexity of the plan, to administer or oversee our Accident Reporting and Investigation Plan and conduct investigations.

- Supervision shall have the authority and freedom to initiate and maintain a safe and healthy work site.
- Employees designated as “Competent Person” have the authority to inspect the jobsite and direct corrective actions for unsafe conditions, including cease and desist orders in their area of competency.
- Employees shall be responsible for complying with applicable safety requirements, wearing prescribed safety equipment, and preventing avoidable accidents and property damage.

Instruction and Training

- No person shall be required to work in surroundings or under working conditions which are unsafe or dangerous to his/her health.
- All new employees shall be provided a New Hire Orientation and such continued safety training to enable them to perform their work in a safe manner; and all existing employees shall be provided a New Hire Orientation at least annually.
- New Hire Orientation shall be based on the Safety Program and shall include, but not limited to:
    - General safety policy
    - Requirements for employee and project safety
    - Employee’s responsibilities for property and the safety of others
    - Employee’s responsibilities for reporting all accidents and injuries
    - Medical facilities and required treatment
    - Procedures for reporting or correcting unsafe conditions or practices
    - Fire fighting and other emergency procedures
    - Alcohol/drug abuse policy
    - Site cleanliness and trash disposal
- The accident prevention plan shall provide for frequent and regularly scheduled safety inspections of the work sites, material, and equipment by competent persons. Identified safety and occupational health deficiencies and corrective measures shall be recorded.
- The content of the Safety Meeting shall address the immediate work and safety hazards at hand. More than one safety meeting per week shall be conducted on jobs having different safety exposures.
- A least one Safety Meeting shall be conducted weekly by field supervisors or foreman for all workers. An outline report of the meeting giving date, time, attendance, subjects discussed and who conducted it shall be maintained. Discussion points are taken from the Company’s “Safety Tool Box Talks” section of this Plan.

- A “Competent” person means one who can identify existing and predictable hazards in the working environment which are dangerous to personnel and has the authority to promptly eliminate them. A “Qualified” person is one who, by degree, certificate, professional standing, or extensive knowledge, training and experience has demonstrated his/her ability to resolve problems related to the work.

Accident Reporting

- All accidents which occur will be reported, investigated, and analyzed, in accordance with “Accident Reporting” section of this Plan.
- Accidents will be investigated in-depth to identify all causes and to recommend hazard control measures. Except for rescue and emergency measures, the accident scene shall not be disturbed until it has been released by the investigating official.
- Employees are responsible for reporting all injuries or occupationally related illnesses as soon as possible to their immediate supervisor. No supervisor shall decline to accept a report of injury.

Sanitation

- An adequate supply of drinking water shall be supplied from sources approved by Federal, State, or local health authorities.
- Drinking water shall be dispensed by a means which prevents contamination between the consumer and source.
- Toilet facilities shall be provided at each construction job site, as follows:

Number of Employees	Minimum facilities
20 or less -	1
20 or more -	1 toilet seat and 1 urinal per 40 workers
200 or more -	1 toilet seat and 1 urinal per 50 workers

Medical and First Aid Requirements

- Prior to start of work, arrangements shall be made for medical facilities, emergency rescue, ambulance service, and medical personnel to be available for prompt attention to the injured and consultation on occupational health.
- In all places where less than 100 workers are employed on any shift and where neither a first aid station nor infirmary is available, 16 unit first aid kits (National Safety Council DATA SHEET No. 202) shall be provided in the ratio of one for each 25 persons or less.
- The contents of first aid kits shall be checked before being sent out on each job and inspected weekly by supervision for replenishment.

- A CPR certified employee shall be on the job site at all hours when work is in progress except when on emergency calls.
- The CPR certified employee, shall hold a current certificate in first aid training from the American Red Cross or equivalent training that can be verified by documentary evidence.
- Emergency telephone numbers and reporting instructions for ambulance, emergency rescue, physician, hospital, fire, and police shall be conspicuously posted at the work site.

Physical Requirements of Employees

- All persons shall be physically and emotionally qualified for performing the duties to which they are assigned. Some factors to be considered in making work assignments are strength, endurance, agility, coordination, and visual and hearing acuity.
- Employees at no time shall use or be under the influence of alcohol, narcotics, intoxicants, or similar mind altering substances while on duty. Employees found to be under the influence of or consuming these substances will be immediately removed from the job site.
- Operators of any equipment or vehicle shall be able to read and understand the signs, signals and operating instructions in use.

Personal Protective Apparel and Safety Equipment

- Personal protective devices shall be used as required and as instructed.
- Adequate supply of personal protective equipment shall be supplied based on project requirements.
- At a minimum, hardhat, safety glasses and leather work boots shall be worn at all times.
- Additional personal protective equipment will be required based on project needs such as hearing protection, gloves, respirators and fall protection.
- All personal protective equipment shall be inspected prior to use and stored in a suitable location to prevent damage.
- Employees must be trained on proper use of personal protective equipment.

Housekeeping

- Housekeeping is everyone's responsibility.
- You are responsible to clean your work areas before leaving. All tools, material, etc must be cleaned up and returned to the proper storage location.

PROJECT NAME: _____

Designated Competent Person Acknowledgement Form

Definition

A competent Person is a person who has the ability and has been reasonably trained to recognize hazards and has the authority to correct them.

Responsibility

The designated Competent Person is responsible for recognizing and correcting safety hazards. This person has the authority to stop work in the event if any potential safety concern on the job site. This representative is considered the contact person on safety related issues and shall be on site full time when hazard exists.

This form must be completed by the subcontractor and the subcontractor's designated Competent Person(s). Where a subcontractor is responsible for a multiple crafts, it is necessary to maintain additional designated Competent Persons and forms for each additional tier. Each subcontractor on a site must submit this completed form prior to beginning work on the project and update it any time there is a change in the designated representative(s).

Acknowledgement

I, _____ representing, _____ acknowledge that I have been thoroughly trained and have the experience to perform the duties as a competent person in the areas indicated. I understand that I have the responsibility and authority to correct hazards and to stop work in the event of a potential hazardous or imminent danger situation.

Areas of Competency

___ PPE	___ Hand Signals	___ Rigging	___ Compressed Air
___ Respiratory Protection	___ Scaffolding	___ Hazard Communication	___ Asbestos
___ Hearing Protection	___ Electrical	___ Excavations/Trenches	___ Lead
___ Fall Protection	___ Ladders	___ First Aid/CPR/AED	___ Silica
___ Demolition	___ Fire Protection	___ Welding/Cutting	___ Confined Space
___ Forklifts	___ Aerial Lifts		

Signature: _____ Date: _____

Accident Reporting and Investigation Plan

This Accident Reporting and Investigation Plan prescribe methods and practices for reporting and investigating accidents. No matter how conscientious the safety effort at a company, accidents happen occasionally due to human or system error. Therefore, this written plan is intended to provide a means to deal with all workplace accidents in a standardized way and demonstrate our company's compliance with the reporting requirements of OSHA 29 CFR 1904. In addition, it is the policy of the company to comply with all workers' compensation laws and regulations.

Administrative Duties

The Safety Director is responsible for developing and maintaining this written Accident Reporting and Investigation Plan. The Safety Director is solely responsible for all facets of the plan and has full authority to make necessary decisions to ensure the success of this plan.

The Safety Director is also qualified, by appropriate training and experience that is commensurate with the complexity of the plan, to administer or oversee our Accident Reporting and Investigation Plan and conduct investigations.

Employees may review a copy of our Accident Reporting and Investigation Plan. The Safety Director may amend our written program.

Accident Reporting Procedures

In the event that an accident/incident occurs, employees must report the injury to their Superintendent/Foreman or Safety Personnel immediately. Near miss accidents/incidents need to also be reported.

Superintendents must immediately notify the Safety Director when an accident/incident occurs, and complete an Incident-Near Miss Report. Once completed, the Incident-Near Miss Report needs approved by the Safety Director.

If any employees witness an accident at work, they should call for emergency help or assistance to help calm injured employee. The witness should immediately report the accident to their supervisor, complete a written statement, and aid in answering questions related to the Incident-Near Miss Report and Accident Investigation.

The company President and Eastern Alliance shall be notified of all accidents by receipt of a completed accident report within 24 clock hours of the accident/incident.

Accident Investigation Procedures

Thorough accident investigations will help the company determine why accidents occur, where they happen, and any trends that might be developing. Such identification is critical to preventing, controlling

and mitigating hazards. The Superintendent, with help of the Safety Director, will perform the following duties:

- Conduct the accident investigation at the scene of the accident/incident as soon after as safely possible.
- Interview the employee involved in the accident/incident and any witnesses. This should be done individually, and should be in their words.
- Repeat the employee's version of the event back to them and allow the employee to make any corrections or additions.
- After the employee has given their description of the event, ask questions that focus on causes.
- When finished, remind employees the investigation was to determine the cause and possible corrective action that can eliminate the cause of the accident.
- Complete an accident investigation report with the employee and review data for accuracy.

The accident investigation report is used to:

- Track and report injuries on a annual basis;
- Group injuries by type, cause, body part affected, time of day, and process involved;
- Determine if any trends in injury occurrence exist and graph those trends if possible;
- Identify any equipment, materials, or environmental factors that seem to be commonly involved in injury incidents;
- Discuss the possible solutions to the problems identified;
- Proceed with improvements to eliminate the likelihood of future injuries.

Injury, Illness, and Medical Issues

If a workplace accident results in a fatality, inpatient hospitalizations of one or more employees, amputation, or loss of an eye, the Safety Director or main office reports the incident within eight hours by phone or in person to the nearest OSHA office by calling 1-800-321-OSHA (6742).

If an injured person is taken to a doctor, a statement from the doctor will be attached to the Incident-Near Miss Report.

Employees with workplace injuries resulting in time off work will be put in the company's Return to-Work Program to facilitate their full recovery and resumption of original work.

Weekly compensation for workplace injuries or illnesses requiring time off work, as indicated by law, applies after the third day of wage loss. (Sundays are not included in the three-day waiting period, unless the employee ordinarily works on Sunday.)

If the disability continues for more than seven calendar days, workers' compensation goes back to day one.

On the day of injury, the company will cover the time loss due to doctor and/or emergency room visits or inability to work, up to a maximum of 12 hours.

Recordkeeping

The Safety Director is responsible for maintaining the following records and documentation:

- OSHA 300 Log and Summary of Injuries and Illnesses
- OSHA 300A Log of Work Related Injuries and Illnesses
- Accident Investigation Reports
- Training Records

Annual Summary Posting

At the end of each calendar year, The Safety Director will review the accident/incident reports; complete the OSHA 300 and 300A forms. The OSHA 300A form will be posted the following year from February 1st to April 30th. It will be posted in a conspicuous place at the office locations and project sites.

Employee Involvement and Training

This plan is an internal document guiding the action and behaviors of employees; therefore they need to be aware of it and abide by it. To communicate the accident reporting and investigation plan, all employees are given a thorough explanation as to why the new plan was prepared and how individuals may be affected by it.

The information and requirements of this written plan are presented to employees during new hire orientation, annual training or at job safety briefs.

INCIDENT/NEAR MISS REPORT

TYPE OF INCIDENT – CHECK ALL THAT APPLY

□ INJURY/ILLNESS □ VEHICLE ACCIDENT □ PROPERTY DAMAGE □ FIRE
□ SPILL/RELEASE □ VANDALISM □ NEAR MISS □ OTHER

GENERAL INFORMATION

PROJECT/OFFICE:	DATE OF REPORT:
DATE OF INCIDENT: TIME:	DAY OF WEEK:
SUPERVISOR ON DUTY:	AT SCENE OF INCIDENT: □ YES □ NO
LOCATION OF INCIDENT:	
WEATHER CONDITIONS:	ADEQUATE LIGHTING AT SCENE: □ YES □ NO □ N/A

AFFECTED EMPLOYEE INFORMATION

(Include injured person, driver/operator, or employee whose activities resulted in the incident.)

NAME:	
HOME ADDRESS:	
SOCIAL SECURITY #:	HOME PHONE #:
JOB CLASSIFICATION:	YEARS IN JOB CLASSIFICATION:
HOURS WORKED ON SHIFT PRIOR TO INCIDENT:	YEARS WITH CO.: DATE OF BIRTH:
DID INCIDENT RELATE TO ROUTINE TASK FOR JOB CLASSIFICATION:	□ YES □ NO

INJURY/ILLNESS INFORMATION

NATURE OF INJURY OR ILLNESS:
OBJECT/EQUIPMENT/SUBSTANCE CAUSING HARM:
FIRST AID PROVIDED: □ YES □ NO
IF YES, WHERE WAS IT GIVEN: □ ON SITE □ OFF SITE
IF YES, WHO PROVIDED FIRST AID:
WILL THE INJURY/ILLNESS RESULT IN: □ RESTRICTED DUTY □ LOST TIME □ UNKNOWN

MEDICAL TREATMENT INFORMATION

WAS MEDICAL TREATMENT PROVIDED: □ YES □ NO
IF YES, WAS MEDICAL TREATMENT PROVIDED: □ ON SITE □ DR'S OFFICE □ HOSPITAL
NAME OF PERSON(s) PROVIDING TREATMENT:
ADDRESS WHERE TREATMENT WAS PROVIDED:
TYPE OF TREATMENT:

VEHICLE AND PROPERTY DAMAGE INFORMATION

COMPANY EQUIPMENT/AUTO INVOLVED IN ACCIDENT? □ YES □ NO

MAKE	MODEL	TYPE	OPERATOR

REPORT APPROVAL

	NAME PRINTED	SIGNATURE	DATE
EMPLOYEE INVOLVED:			
SUPERINTENDENT:			
SAFETY DIRECTOR:			
WITNESS:			

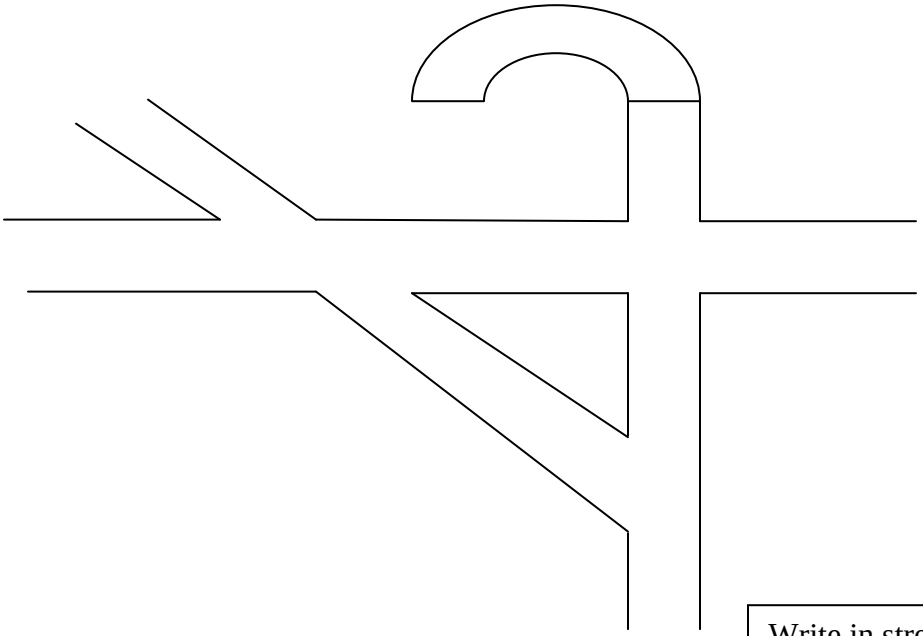
EMPLOYEE STATEMENT		
Project Name:	**Superintendent:**	
Date of Incident:	**Time of Incident:**	
Description of Incident:		
Name:	**Signature:**	**Date:**

WITNESS STATEMENT		
Project Name:	**Superintendent:**	
Date of Incident:	**Time of Incident:**	
Description of Incident:		
Name:	**Signature:**	**Date:**

ADDITIONAL COMMENTS		
Project Name:	**Superintendent:**	
Date of Incident:	**Time of Incident:**	
Description of Incident:		
Name:	**Signature:**	**Date:**

INCIDENT SKETCH

VEHICLE INCIDENTS



Write in street names and, if possible, the points of the compass.

If a sketch appears on a police report or insurance form, this need not be completed. Attach the other report.

INVESTIGATIVE REPORT

PROJECT NAME:	SUPERINTENDENT:
DATE OF INCIEDENT:	DATE OF INVESTIGATION:
OSHA RECORDABLE(S): □ YES □ NO	# RESTRICTED DAYS: # DAYS AWAY FROM WORK:
INCIDENT COST: ESTIMATED: $	ACTUAL: $

CAUSE ANALYSIS

WAS THE ACTIVITY ADDRESSED IN THE JSA?

□ YES (Attach a copy) □ NO

IMMEDIATE CAUSES – WHAT ACTIONS AND CONDITIONS CONTRIBUTED TO THIS EVENT? (Use next page)

BASIC CAUSES – WHAT SPECIFIC PERSONAL OR JOB FACTORS CONTRIBUTED TO THIS EVENT? (Use next page)

ACTION PLAN

REMEDIAL ACTIONS – WHAT HAS AND OR SHOULD BE DONE TO CONTROL EACH OF THE CAUSES LISTED?

ACTION	PERSON RESPONSIBLE	TARGET DATE	COMPLETION DATE

PERSONS PERFORMING INVESTIGATION

INVESTIGATOR'S NAME :(print)	SIGN:	DATE:
INVESTIGATOR'S NAME :(print)	SIGN:	DATE:

REPORT APPROVALS

SUPERINTENDENT: (print)	SIGN:	DATE:
PROJECT MANAGER: (print)	SIGN:	DATE:
SAFETY DIRECTOR: (print)	SIGN:	DATE:
PRESIDENT : (print)	SIGN:	DATE:

Substance Abuse Prevention

PURPOSE

Penn Installations has made a commitment provide a safe, healthy, and productive work environment. Recognizing substance abuse can jeopardize the safety and well-being of the employee, coworkers, clients and subcontractors; Penn Installations has adopted this policy.

DRUG FREE WORKPLACE

This policy certifies Penn Installations intent to maintain a substance abuse free workplace.

PROHIBITED BEHAVIOR

1. Possessing, manufacturing, distributing, dispensing, and/or use of illegal drugs, drug paraphernalia, unauthorized controlled substances, and other intoxicants on the job, in/on company property, client property, and company owned vehicle is prohibited.

2. Reporting to and/or being at work under the influence of illegal drugs, or unauthorized controlled substance, alcohol or any other legal intoxicant which can adversely affect the employee's performance, the safety of the employee or those surrounding the employee is prohibited.

3. Legally prescribed drugs may be permitted on or in company property/project provided the drugs are prescribed by an authorized medical practitioner for current use by the employee in possession of the drugs. Reporting to and/or being at work with a quantity of prescribed or over-the counter drugs, where use prevents the employee from performing the duties of the job or poses a safety risk to the employee and/or other employees or property is prohibited

4. Any employee who voluntarily reports that he/she is in violation of this policy will be encouraged by management to seek professional help to overcome their problem. A list of professional service institutes is available to any employee upon request. Such request shall be kept confidential by the employee's supervisor, management, and the personnel department.

   Also for use by the employee, is **Substance Abuse and Mental Health Services Administration (SAMHSA).** SAMHSA can be contacted at 1-800-662-HELP (4357). This service is confidential, free, 24-hour-a-day, 365-day-a-year, information service, in English and Spanish, for individuals and family members facing mental and/or substance use disorders. This service provides referrals to local treatment facilities, support groups, and community-based organizations. Caller can also order free publications and other information.

5. The possession or use of alcohol on or in company property or worksites is prohibited.

TESTS AND SEARCHES

An employee will be required to undergo a diagnostic test for the use of illegal and non-prescription drugs, alcohol or other substances under any of the following or other circumstances which may be determined by the Company.

1. Pre-employment or assignment to a project; or as a requirement of Company or Agency.

2. If such employee is involved in any accident or incident resulting in personal injury to the employee or others working in the area, or damage to company property; or if at work place conditions are created which could have resulted in personal injury to either the employee or others and there is reasonable suspicion to believe that the accident or incident has occurred due to drug, alcohol, or controlled substance use.

3. When there are reasonable grounds to believe that an employee is under the influence of illegal drugs, unauthorized controlled substances, alcohol or other intoxicants while on the project, or on/in company property during working hours or non-working hours, or that the employee has reported to work under the influence of illegal drugs, unauthorized controlled substances, alcohol or other intoxicants in a condition would could affect the safety of the employee and or others.

   Appendix "A" attached, is the form on which the observed personal behavior of any employee suspected of being under the influence of any of the above will be recorded.

4. As part of any periodic medical examination provided or required by the company.

5. Upon re-employment following the employee's stay at a rehabilitation center for drug or alcohol abuse, a verified positive drug test result, an alcohol result 0.04 or greater, a refusal to submit to a test, or any other activity that violates company policy. Once allowed to return to work, an employee shall be subject to unannounced follow-up testing for at least 12 but not more than 60 months. The frequency and duration of the follow-up testing will be recommended by the Substance Abuse Professional (SAP) as long as a minimum of six tests are performed during the first 12 months.

6. As required by the terms and conditions of any contract or subcontract agreement, or applicable government owner or client regulations to which the company is a part or by which is bound.

7. If testing is required for employees in "safety sensitive positions" as defined in U.S. Department of Defense rules and regulations or is required by the rules and regulations of U.S. Department of Transportation or any other Federal agency having jurisdiction. Also any position which requires the performance of physical or supervisory tasks directly affecting operation which, if performed improperly, could result in injury or death to employees or others or could create property or environmental damage.

8. All employees may be screened on a random basis. Selection of employees for random testing will be conducted through use of a neutral selection process.

COST OF TESTING

If an employee is requested by an authorized representative of the Company to submit to a diagnostic test, the cost of the first test and one (1) confirmatory test of the same specimen will be paid for by the company.

PAYMENT WHILE OFF DUTY

If any employee is removed from company premises, property, project or duty station for suspected violation of any of the policies outlined herein and immediately, within two (2) hours, undergoes a diagnostic test for the detection of illegal drugs, alcohol or other controlled substances referred to herein and the results of that diagnostic test and one (1) confirmatory test, if so requested by the employee or the Company, indicate that such employee is not in violation of the policies set forth herein, such employee shall be paid in full for all the time away from the employee's project or duty station for such testing. However, in the event the diagnostic tests results are positive, the employee shall only be paid from the beginning of the employee's work shift up to the time the employee was removed from project or duty station.

APPLICATION OF POLICY

This policy shall apply to all employees entering 1) a project, and 2) onto or into company property including, but not limited to, part-time personnel, consultants, and employees of other companies of contractors/subcontractors working on a project site on which this Company is the prime contractor or construction manager, subcontractor or agent of the Owner.

NOTIFICATION OF AUTHORITIES

This Company will report to law enforcement official's information concerning possession, distribution or use of any illegal drugs, unauthorized controlled substances, alcohol or other intoxicants. Any such substances found during a search of an employee or property will be turned over to the custody of law enforcement officials. This Company will cooperate fully in the prosecution and/or conviction of any violators of the law.

EMPLOYEES CONVICTED OF DRUG OFFENSES

In accordance with Federal Law, H.R. 5120 "The Drug Free Workplace Act of 1988", each employee must, as a condition of continued employment on a Federal contract or Grant, notify this Company of any conviction of a criminal drug offense within five (5) days after said conviction. This Company will notify the Federal Contracting Agency of Criminal Drug Convictions within 10 days after it has received notice. Any employee so convicted must satisfactorily complete a drug rehabilitation program and agree to periodic testing any time thereafter. Failure to report such a conviction and/or participate in a drug rehabilitation program will result in disciplinary action up to and including suspension or termination.

TRAINING POLICY IMPLEMENTATION

Supervisors and managers will receive one hour training on implementation of the Company policy for substance abuse and how to recognize substance abuse. Employees will receive one-hour training on the indicators, effects and consequences of substance abuse on personal health, safety and the worksite.

COOPERATION WITH THE COMPANY

All employees, as described above under "Application of Policy" as a condition of continued employment or relationship, contractual or otherwise, have an obligation to cooperate with any company investigation of substance abuse in the workplace.

Failure to cooperate in any such investigation will result in disciplinary action up to and including suspension and/or termination or cancellation of any contractual relationship.

Refusal to take a test, inability to provide sufficient quantities of breath or urine to be tested without a valid medical explanation, tampering with or attempting to adulterate the specimen or collection procedures, not reporting to the collection site in the time allotted, or leaving the site of an accident without a valid reason before the tests have been conducted will result in disciplinary action, up to and including discharge.

PENALTIES FOR DRUG AND ALCOHOL ABUSE

1. Possession of drugs, drug paraphernalia, etc., on company property or project:
    A. First Offense: Termination

2. Distribution of drugs, drug paraphernalia, etc., on company property or project:
    A. First Offense: Termination

3. Use of illegal drugs, unauthorized controlled substances:
    A. If an employee voluntarily asks for help: No suspension or termination, the employee will be given aid on where to seek help to overcome the problem.
    B. If discovered by actions and/or testing:
        a) First Offense: Immediate suspension from the project. Employee will be told he/she must enter and actively participate in a rehabilitation program such as Alcoholics Anonymous and provide written proof of same prior to returning to the workplace.
        b) Second Offense: Termination at the company's option or immediate suspension without pay for two weeks. Employee must enter a formal inpatient rehabilitation facility for a minimum of four (4) weeks before returning to work, and must agree to remain drug free and further agree to periodic testing to confirm this.
        c) Third Offense: Termination.

4. Adulteration of Specimen:
    A. If discovered by actions and/or testing:
        a) First Offense: Immediate suspension from the project. Employee will be told he/she must enter and actively participate in a rehabilitation program such as Alcoholics Anonymous, and provide written proof of same prior to returning to the work place.
        b) Second Offense: Termination at the company's option or immediate suspension without pay for two weeks. Employee must enter a formal inpatient rehabilitation facility for a minimum of four (4) weeks, before returning to work, and must agree to remain drug free and further agree to periodic testing to confirm this.
        c) Third Offense: Termination

5. Excessive abuse of alcohol:
    A. First Offense: Immediate suspension from the project. Employee will be told he/she must enter a rehabilitation program such as Alcoholics Anonymous, actively participate in such a program and provide written proof of same prior to returning to work.
    B. Second Offense: Termination at the company's option or suspension under normal company policy. Employee must enter a formal inpatient rehabilitation facility for a minimum of four (4) weeks before returning to work, and must agree to periodic testing.
    C. Third Offense: Termination

6. Excessive absenteeism, erratic job performance, frequent accidents, errors in judgment: Employee will be confronted and asked if he/she have a problem. If the employee volunteers that yes, a problem with substance abuse exists, the employee will be given help in finding an outpatient program to overcome the problem.

    If the employee denies having a problem, a letter will be placed in the employee's file regarding their behavior and will be considered a working document.

    Nothing in this document shall be construed to form a contract between this Company and employee that would anyway obligate this Company to assume any liability, financial or otherwise, for any assistance sought out and/or received by the employee. All costs associated with any assistance shall be the sole responsibility of the employee seeking and/or receiving same.

RECORDKEEPING

Records and the test results of individuals tested shall be maintained. These records will be maintained in a secured location with controlled access by the MRO and/or management.

Definitions

"Company property" as used in this specific document shall include but not be limited to owned, leased, rented or borrowed real estate, stationary or mobile equipment or machinery, vehicles, whether water, land, air borne or other mechanical devices, and/or any and all personal property that the company at any time may utilize in its performance of its business.

The words "employee or employees" as sued in the context of this policy document, shall include all full or part-time, salaried or hourly employees directly employed by this Company or any subsidiary or affiliate of its parent company, or employed by any contractor, subcontractor, regardless of tier level, consultant, supplier, or service organization having any contractual relationship with this Company.

SEVERABILITY

If any provision of this policy document is held to be invalid, illegal or unenforceable that shall not affect or impair in any way the validity, legality, or enforceability of the remainder of this policy documents.

Appendix A

OBSERVED BEHAVOR REASONABLE CAUSE RECORDING FORM	
Employee Name:	Observation Date:
Time of Observation: From: a.m. p.m.	To: a.m. p.m.
Location:	

Observed Personal Behavior: Check all Appropriate Items		
1.) Speech: Normal_____	Incoherent_____	Confused_____
Slurred_____	Whispering_____	Silent _____
2.) Balance: Normal_____	Swaying_____	
Staggering_____	Falling _____	
3.) Walking and Turning: Normal _____	Stumbling _____	Reaching for Support _____
Falling_____	Arms Raised for Balance _____	
4.)Awareness: Normal _____	Confused_____	Paranoid_____
Sleepy or Stupor_____	Lack of Coordination_____	
5.)Other Observed Actions or Behavior:		

Above Behavior Witnessed By:	
Signed:	Date:
Signed:	Date:

This form must be prepared every time a person is suspected of alcohol/controlled substance used by actions, appearance, or conduct while on duty/off duty.

SUBSTANCE ABUSE TESTING CONSENT FORM

And

Waiver and Release of Liability Form

I hereby agree to submit voluntarily to drug and/or alcohol screening being performed on the date entered below and per Penn Installations Substance Abuse Prevention Policy. Further, I understand and agree that the results of any such testing will be provided to the appropriate representative of Penn Installations, any Union of which I currently am an active member ("the union").

As consideration of employment the undersigned hereby releases, discharges, acquits to, and holds harmless, from any claim or liability arising from any implementation by any of the above of the Substance Abuse Prevention Policy set forth herein, this company, its successors or assignees, its officers, shareholders, directors, employees, agents, consultants, physicians, technicians, testing laboratories and any and all other persons, public or private, who may become involved in the implementation or enforcement of the policies set forth in this document.

In the event any provision of this Substance Abuse Testing Form/Waiver and Release of Liability Form is found to be legally unenforceable for any reason, I hereby agree that all remaining provisions will remain in full force and effect.

This policy is intended as a guideline and is not intended to establish a contract between the company and the employee signatory hereto. I hereby acknowledge that as a condition of employment with the Company I agree to abide, support and enforce the company policies set forth in Penn Installations Substance Abuse Prevention Policy.

I acknowledge that I have read and understand this Substance Abuse Testing Form/Waiver and Release of Liability Form and Penn Installations Substance Abuse Prevention Policy and that I am freely and voluntarily signing it.

_____ _____

Individual's Name (Print) Date

_____

Individual's Signature

NEW HIRE ORIENTATION

Approximately sixty percent (60%) of incidents on a construction site involve new hires. Every incident has the potential of adversely affecting an employee's quality of life and the company's competitive position. Therefore, the goal of Penn Installations is ZERO INCIDENTS. This can be accomplished by being proactive with safety and providing adequate safety training.

It is up to you to create a culture within Penn Installations in which working safely is the only way to work. With this in mind, Penn Installations feels that both the employee and the employer must make a commitment to safety collectively and individually. We must be continuously aware of our surroundings. All unsafe conditions and practices must be reported and corrected immediately. Your efforts, and the efforts of your fellow employees, help ensure a safe and healthful workplace.

Safety and Health Program

The Safety and Health Program is designed to assist in the ability for Penn Installations to maintain compliance with the most current OSHA Regulations. The program will be located at each job location and made available to all employees for review.

Accident/Incident Reporting

Every accident/incident or injury of any kind must be reported immediately, regardless of how minor. Report all incidents immediately to the Project Superintendent. The Project Superintendent, will then report the incident to the Safety Director. An Incident/Near Miss Report will be completed promptly and returned to the Corporate Office.

Reporting and Correction of Unsafe Conditions/Acts

All unsafe acts and conditions must be reported immediately to the Project Superintendent. All unsafe acts and conditions must be corrected prior to commencing work. All unsafe conditions or fixes needed to equipment must be documented.

Emergency Procedures

Emergency procedures will be job specific. Each job location will post the emergency procedures on the job bulletin board. The emergency procedures will consist of Medical Treatment Facilities, Emergency Contacts, and Emergency Evacuation Procedures. In the event of any major incident, contact 911. When 911 is not available in that area, additional methods will be executed for that location.

First Aid and Medical Treatment

First Aid equipment will be made available on site. First Aid kits for minor injuries will be placed on site. The First Aid kits will be maintained by the Safety Director. Inform the Safety Director when items are used or need replaced so items can be replaced promptly. Facilities for additional medical treatment will be made available for each job location. The medical facilities provided will be posted on the job bulletin board. Each job location will have a First Aid/CPR qualified person on site at all times.

Hazard Communication

Hazardous chemicals are used in certain phases of the work process. The employees have the right to know of the chemicals used. The Hazard Communication Program will be made available to all employees working at the job location. The Hazard Communication Program will be located in the job trailer on site. The program will contain an inventory of chemicals and a Safety Data Sheet (SDS) for each chemical used on site. Each employee shall be trained on the Global Harmonized System (GHS) and Penn Installations Hazard Communication Program. All containers containing chemicals shall be labeled and legible. If hazardous chemicals are brought onto site that are not in the Hazard Communication Inventory, a safety data sheet shall be obtained from the chemical manufacture and placed into the Hazard Communication Program.

Fire Prevention

Preventing fires is crucial to the success of a project. Fire prevention starts with good housekeeping. Know the location of fire extinguishers and how to properly use them. Fire extinguishers will be inspected monthly and annually. Smoking is only permitted in designated areas. All flammable and volatile liquids must be stored in a UL approved container. When performing hot work, a hot work permit and a fire watch must be dedicated to work area. Report all fires to the Superintendent Immediately.

Personal Protective Equipment (PPE)

Each employee is required to wear the following PPE at all times (100%):

1. An approved and current hard hat.
2. Leather work boots.
3. ANSI approved eye protection with side shields.
    a. ANSI approved prescription eye glasses with side shields.
    b. ANSI approved over the top eye protection if prescription glasses are not ANSI improved.
4. Seatbelts are required to be worn at all times in equipment and motor vehicles.

Additional PPE may be required for specific tasks such as but not limited to:

1. Hearing protection
2. Full face shield when using cut-off saws or grinders.
3. Full body harness for working 6' or above a lower surface.
4. Respiratory protection
5. High visibility apparel Class II Safety Vest.

You are responsible for the care and maintenance of PPE equipment supplied by the company. Jewelry (such as rings, bracelets, necklaces) and loose clothing are not to be worn while working.

Fall Protection

Fall protection is required 100% of the time when on a walking/working surface (horizontal or vertical) with an unprotected side or edge which is 6 feet or more above a lower level shall be protected from falling by the use of guardrail systems. If a guardrail system cannot be used, personal fall arrest systems (PFAS) shall be utilized. PFAS will be provided by the company. Each employee on the job location exposed to fall hazards will be trained on site specific fall protection requirements.

Electrical/GFCI

To provide protection from electrical shock, all equipment shall be protected by a Ground Fault Circuit Interrupter (GFCI). All generators shall have GFCI outlets built into them. When using permanent power, a GFCI pigtail shall be used. Tools and extension cords shall be inspected for damage, wear, or loose connections prior to each use. Any damage found, the tool or extension cord must be removed from service.

Disciplinary Program

The purpose of this policy is to instill a policy for corrective actions due to employees disregarding safety and health policies and to establish an acceptable disciplinary protocol for addressing deliberate unsafe employee actions, standards of conduct and define unacceptable zero tolerance activities. Penn Installations is committed to ensuring that all safe work practices are being followed by all employees to prevent injury to employees. You may be terminated for repetitive violations of the Company policy or based on the severity of the violation.

Housekeeping

Work areas shall be kept clean and sanitary at all times. An adequate supply of drinking water shall be supplied from sources approved by Federal, State, or Local health authorities. Drinking water shall be dispensed by a means which prevents contamination between consumer and source. Restroom facilities shall be provided at each job location. The number of facilities will be based on the number of employees on site. Facilities shall be maintained by the supplying company.

Toolbox Talk

Each job location will be provided with a Toolbox Talk binder located at each job site. A toolbox talk must be completed each week on a topic pertaining to the work being performed. Each employee shall be given the opportunity to interact and sign the attendance roster. All employees are required to attend the meeting. The Toolbox Talk then must be returned to the Corporate Office.

Job Safety Analysis (JSA)

Job safety Analysis (JSA) shall be completed prior to each job task/phase of work being completed. The JSA will discuss the hazards of the job task and the corrective measures to prevent injury. The JSA will be reviewed with each employee involved in the job task with each employee signing the JSA showing they fully understand. Once the job task is completed the JSA will then be returned to the Corporate Office.

Additional Training

Certain job locations may require additional training such as aerial lift, confined space, or forklift training. If additional training is required, the Safety Director shall be notified in order to ensure sufficient training is obtained.

Substance Abuse Testing

Employees on the job, performing Company business in any capacity or location, under the influence of drugs or alcohol pose serious safety and health risks not only to the employee, but also to all those who surround or come in contact with the employee. Therefore, this Company requires your full cooperation and support in implementing this policy.

Any employee who feels that he or she has a drug or alcohol related problem is encouraged to seek professional help. Any employee voluntarily seeking such help will be referred to professional assistance by the company and any such action shall be kept strictly confidential.

Tools and Equipment

Inspect all tools and extension cords daily, prior to use. If any deficiency is found, remove tool or cord from service until repaired. Do not use damaged tools and equipment. Ensure all guards are in place and are working properly. Only licensed persons can use powder-actuated tools and lasers. You must have your card in person.

Ladders and Scaffolds

Inspect all ladders daily, prior to use. If any deficiency is found, tag ladder and remove from service. Do not use until repair is made. All ladders must be set up on solid ground. Extension ladders must be set up at a 4:1 ratio, extended 3' above the landing and secured to the structure. Folding ladders (A Frame) must be fully opened and not leaned against the working surface. Do not use the top two steps. Scaffolds must be inspected daily, prior to use. If any deficiency is found, tag scaffold out of service. Do not use until repaired by qualified scaffold builder. Casters must be locked when using scaffold. You are not permitted to remain on scaffold when being moved.

Commitment

It takes the commitment of everyone to make Penn Installations a great place to work. You are challenged by the Company to work PRODUCTIVELY SAFE! Together we can achieve our goal to build a better tomorrow for ourselves and our community.

Productively Safe!

EMPLOYEE ACKNOWLEDGMENT FORM

Name: _____ **Date:** _____

Supervisor: _____ **Project:** _____

Disciplinary Violation Record

First Violation (Verbal Warning) Date: _____

Description of Violation: _____

Corrective Action: _____

Employee Signature: _____

Second Violation (Written Warning) Date: _____

Description of Violation: _____

Corrective Action: _____

Employee Signature: _____

Third Violation (Suspension/Termination) Date: _____

Description of Violation: _____

Corrective Action: _____

Employee Signature: _____

I acknowledge, understand, accept and agree to comply with all of the information, rules and procedures set forth in Penn Installations New Hire Orientation. I understand the disciplinary program at Penn Installations and intend to abide by the Safety and Health Program of the Company. In addition, I have received a copy of Penn Installations Workplace Violence Prevention Policy and have carefully read and understand the requirements and without reservation, follow the policy.

Employee Signature: _____ **Date:** _____

Disciplinary Program

Purpose

The purpose of this policy is to instill a policy for corrective actions due to employees disregarding safety and health policies and to establish an acceptable disciplinary protocol for addressing deliberate unsafe employee actions, standards of conduct and define unacceptable zero tolerance activities. Penn Installations is committed to ensuring that all safe work practices are being followed by all employees to prevent injury to employees.

General Requirements

Management Responsibilities:

- Ensure Penn Installations expectations are communicated to the employees.
- Ensure Supervisors are documenting employee violations of the Health and Safety Program
- Perform physical inspections of the work areas to determine if the Health and Safety Program is being followed by employees and supervisors.

Supervision Responsibilities:

- Communicate Penn Installations expectations to the employees.
- Report any violations of the Health and Safety Program to management.
- Document any infractions of the Health and Safety Program by employees.
- Follow all of the guidelines under the Health and Safety Program and reinforce the policy by example.
- Follow all the rules, polices, and procedures as outlined in the Safety and Health Program.
- Actively participate in investigations so an accurate determination can be made if an employee intentionally violated the Health and Safety Program or the Safe Work Practices.

Employee Responsibilities:

- Read and understand the policies and procedures as outlined in the Penn Installations Safety and Health Program.
- Follow all the rules, polices, and procedures as outlined in the Penn Installations Safety and Health Program.

Standards of Conduct:

- Whenever people gather together to work and achieve goals, rules of conduct are needed to help them work together efficiently, effectively and harmoniously. Penn Installations employees have the responsibility to the Company and co-workers to adhere to rules of behavior and conduct as specified (but not limited to) those provided in this Program.

Unacceptable ("No Tolerance") Activities:

- Penn Installations expects employees to act in a mature and responsible way at all times.
- The following list includes conduct that can result in corrective action. Note: the list does not include all circumstances and therefore is not all-inclusive; other unacceptable behaviors not listed may also result in corrective action.
    - Negligence or any careless action that endangers the life or safety of yourself and/or another person(s).
    - Stealing or theft of any kind.
    - Intentional insubordination or refusal or failure to meet performance standards.
    - Equipment abuse and/or misuse.
    - Failure to meet attendance requirements (generally requires more than one attendance violation incident unless the attendance violation is associated with other unacceptable activities).
    - Intentional misrepresentation of any information, either verbal or written.
    - Use of a firearm, knife, or other dangerous instrument of any kind to commit, or make a threat to commit, a violent act.
    - Fighting, making threats, intimidating, harassing (sexual or any type), or coercing anyone in a way that results, or could result, in a negative impact on the business.
    - Failure to meet requirements set forth by the Drug and Alcohol Program

Corrective Action:

- This Disciplinary Program applies to all regular, part-time, subcontractors and introductory employees. The policy has been designed to assure that all employees have a fair and equal opportunity to fully understand their responsibility and expected performance standard prior to corrective action being issued.
- This policy pertains to matters of conduct as well as the employee's competence. However, an employee who does not display satisfactory performance and accomplishment on the job may be dismissed, in certain cases, without resorting to the steps set forth in this policy.
- Supervisors are expected to follow the procedure as outlined. There may be particular situations, however, in which the seriousness of the offense justifies the omission of one or more of the steps in the procedure. Likewise, there may be times when the company may decide to repeat a corrective action step.
- To insure that Penn Installations business is conducted properly and efficiently, employees must conform to standards of attendance, conduct, and work performance regarding work rules and regulations. When a problem in any of these categories is identified, the supervisor will develop an effective solution and initiate coaching and/or counseling.

Corrective Action (Discipline) Procedure:

- Enforcement of this disciplinary program is the responsibility of the offending employee's supervisor and project manager. The safety director is responsible to provide guidance and direction on the implementation of the disciplinary program.
- Unacceptable behavior, which does not lead to immediate dismissal, may be dealt with in the following three (3) steps:
    - Coaching session (Verbal warning/training)
    - Written Corrective Action Notice or Letter of Clarification
    - Suspension (or) Discharge

Step One: Verbal Warning/Training:

- The supervisor will meet with the employee to discuss the problem or violation, ensure the employee understands the nature of the problem or violation, and deliver the expected remedy.
- The supervisor will document the Verbal Warning/Training. Documentation of the incident will remain in the New Hire Orientation Log Book and will not be placed in your personnel record, unless another corrective event occurs.

Step Two: Written Correction or Clarification:

- Written Corrective Action Notice
    - If the employee's performance does not improve following the Step One – Verbal Warning/Training, or if the employee repeats the violation of Company practices, rules or Health and Safety Program, a Written Corrective Action Notice will be issued. The supervisor will again discuss the problem with the employee, emphasizing the seriousness of the issue and the need to immediately remedy the problem. The supervisor will advise the employee that he/she is at the second formal level of corrective action. The Written Corrective Action Notice is the second and final step of the Company's corrective action process.
    - The supervisor will document the Verbal Warning/Training. Documentation of the incident will remain in the New Hire Orientation Log Book and will be placed in your personnel record.

Step Three: Termination (or) Suspension:

- If an employee commits any listed Unacceptable Action or any other action not specified but similarly serious, he/she may be discharged, or suspended without pay pending an investigation of the situation and appropriate disciplinary determination. Following the investigation, the employee may be terminated without any previous disciplinary action having been taken.
- The provision of this Corrective Action Policy is not a guarantee of its use. Penn Installations reserves the right to terminate employment at any time, with or without reason. Additionally, The Company reserves the right to prosecute any employee for any of the above infractions.

Training

Initial Training:

- All employees will receive initial training on the following items:
    - Health and Safety Program
    - Safe Work Practices
    - All elements of this written program

Refresher Training

- Refresher training will be conducted when an employee is determined to be violating the Health and Safety Program, or Safe Work Practices at the time of infraction before returning to duty.

Workplace Violence Policy

Regardless of where you work, or your position within the company, every working person is entitled to have the assured expectation of a safe and healthful work environment that is free from threats of harm and physical violence.

Prohibited Conduct

Penn Installations, Inc. does not tolerate any type of workplace violence committed by or against employees. Employees are prohibited from making threats or engaging in violent activities. The following are examples of prohibited conduct:

- Causing physical injury to another person.
- Making threatening remarks.
- Displaying aggressive or hostile behavior that creates reasonable fear of injury to another person or subjects another individual to emotional distress.
- Intentionally damaging employer property or property of another employee.
- Possessing a weapon while on company property or while on company business.
- Committing acts motivated by, or related to, sexual harassment or domestic violence.

Reporting Procedures

Any potentially dangerous situations must be reported immediately. Notify the following:

1. Notify your supervisor
2. Call Penn Installations, Inc.
    a. Mike Sheehan Office: 814.495.7474 Cell: 814.810.7485
    b. Krista Kuhns Office: 814.495.7474 Cell: 814.243.5824

All reports will be promptly and thoroughly investigated. The identity of the individual making a report will be protected as much as possible. There will not be nay retaliation against employees making good-faith reports of violence, threats or suspicious individuals or activities. All reports will be considered confidential and will be disclosed within the company on a need to know basis and as allowed by law.

We at Penn Installations, Inc. feel that prevention is the best tool to eliminate workplace violence and sexual harassment and would like to make it perfectly clear to our employees that these acts will not be tolerated!

Anyone found to be responsible for threats of or actual violence or other conduct that is on violation of these guidelines will be subject to prompt disciplinary action up to and including termination of employment. Employees and nonemployees engaged in violent acts on our premises will be reported to the proper authorities and fully prosecuted.

Job Safety Analysis

Policy Statement:

It is the policy of Penn Installations to provide all employees with a safe and healthful work environment free from recognized hazards. It is also policy to maintain and actively support a comprehensive employee safety and health program.

Purpose:

The purpose of this policy is to provide:

- A procedure for the initiation and implementation of a Job Safety Analysis (JSA).
- To provide a systematic identification and mitigation of site-specific hazards before work begins.
- This policy applies to all jobs or tasks where it has been determined that a JSA is necessary due to the job or task frequency and severity of injuries, illness, near incidents, the potential for frequency and severity, any jobs not previously classified as low-risk.
- This policy applies to all jobs or tasks including non-routine work that has not be previously performed and analyzed or designated as low-risk.

General Requirements:

A job safety analysis is a technique that focuses on job tasks as a way to identify hazards before they occur. It focuses on the relationship between the worker, the task, the tools, and the work environment. Ideally, after identifying hazards, controls (engineering, work practice, and/or PPE) will be implemented to eliminate or control the hazard to an acceptable risk level.

Responsibilities

- Superintendents:
    - Superintendents must recognize the need for a JSA and initiate completion of a JSA for all jobs and tasks that have not been previously analyzed or identified as low-risk.
    - Supervisors must complete and communicate the JSA with all affected site employees, addressing the hazards and control requirements of the job task prior to commencing work. The communication of the JSA will be conducted during daily tailgate meetings before work commences and prior to permitting employees to start high risk work.
    - Supervisors must retain all applicable JSAs on site until work is completed and then returned to the Corporate Office.

- Safety Director
    - Safety Director or designee will review completed written JSAs for accuracy and content.

Priorities for establishing JSAs should be based on the following:

- Potential injury or illness severity of the task or job.
- Frequency rate of the task or job.
- Any new tasks or jobs involving new or modified processes, equipment, or significant changes in manpower.
- Addition or replacement of tools, fixtures, equipment, and machinery; and changes in processes which can affect the safety of the operation will require that the JSA be developed (or revised to include the necessary changes).

The Job Safety Analysis will be used for initial job training to introduce new employees to the hazards of the job and the safe work practices required to avoid injuries.

When an incident occurs (injury, illness, or near incident event), the JSA will be reviewed to determine whether it needs to be updated to cover a previously overlooked unsafe practice or whether the JSA was not being properly followed.

Employee Involvement:

- Employees will have an understanding of the job, and this knowledge is invaluable for finding hazards. Involving employees will help minimize oversights, ensure a quality analysis, and get workers to "buy in" to the solutions by sharing ownership in their safety and health program.

Written JSA:

- List each step of work activity. Be sure to record enough information to describe each job action without getting overly detailed. Avoid making the breakdown of steps so detailed that it becomes unnecessarily long or so broad that it does not include basic steps.
- Review the job steps with the employee(s) to ensure they are complete and cover the entire task being reviewed.
- Identify hazards associated with each job step. The following questions should be addressed when completing the JSA form.
    - What can go wrong?
    - What are the consequences? How could it arise?
    - What are other contributing factors?
    - How likely is it that the hazard will occur?
- The Written JSA Form is required to be completed/revised by on-site personnel for the following additional situations to ensure systematic identification and mitigation of site-specific hazards before work begins:
    - Job scope changes significantly.
    - New personnel are added to the work party.
    - Site conditions have changed beyond those originally identified.
    - A near miss, incident, or other work stoppage occurs.
    - A concern is raised as the result of a personal hazard assessment.

- When a JSA is completed or revised, it must be reviewed with site employees and any time a new hire is going to be performing the job task.

Revising the JSA:

- A JSA is only effective if it is reviewed and updated periodically, therefore even if no changes have been made to the job, the written JSA must be updated at least annually.
- A JSA must be immediately reviewed if an injury or illness occurs on a specific job to determine whether changes are needed in the job procedure or the applicable JSA.
- A JSA must be reviewed and revised as needed if a close call or near-miss has resulted from the job procedure.
- Any time a JSA has been revised, training on the new job methods, procedures, or protective measures should be reviewed with all affected site employees performing under the applicable JSA by their immediate supervisor prior to commencing work.

Training

- Supervisors shall be trained on the purpose of a JSA, his/her responsibilities regarding JSAs, how to complete a JSA, and all the elements of this written program including hazard identification.
- Employees shall be trained on the purpose of a JSA, his/her responsibilities regarding JSAs, and all the elements of this written program.
- Employee shall be trained on the safe use of any additional protective measures required by the applicable JSA.

Job Safety Analysis

Project Name: _____
Date: _____
Foreman: _____

Description Of Work: _____

EMERGENCY NUMBERS:
Fire/EMS: _____
Police: _____
Safety: _____

WEATHER CONDITIONS:
Temperature: _____
Precipitation: _____
Wind Conditions: _____

REQUIRED PPE:	Yes	No	N/A
Hardhat:	☐	☐	☐
Safety Glasses:	☐	☐	☐
Hand Protection:	☐	☐	☐
Face Shield:	☐	☐	☐
Hearing Protection:	☐	☐	☐
Foot Protection:	☐	☐	☐
High Visibility Vest:	☐	☐	☐
Welding Clothing:	☐	☐	☐
Respirator:	☐	☐	☐
Fall Protection:	☐	☐	☐

Other (what type): _____

REQUIRED PERMITS:
Excavation: ☐
Confined Space: ☐
Hot Work: ☐
Other (list): _____

HOUSEKEEPING:	Yes	No	N/A
Storage of Materials:	☐	☐	☐
Slippery Conditions:	☐	☐	☐
Trask Receptacles:	☐	☐	☐
Clear Entrance/Exits:	☐	☐	☐

TOOLS:	Yes	No	N/A
Proper Tool For Job:	☐	☐	☐
Visual Inspection:	☐	☐	☐
Safe Condition:	☐	☐	☐
Guards In Place:	☐	☐	☐
Hilti Qualified/Trained:	☐	☐	☐

FIRE PROTECTION:	Yes	No	N/A
Fire Extinguisher:	☐	☐	☐
Fire Watch:	☐	☐	☐
Fire Blankets:	☐	☐	☐
Fire Hazards Eliminated:	☐	☐	☐

ELECTRICAL:	Yes	No	N/A
GFCI Used: (Required)	☐	☐	☐
Cords Inspected:	☐	☐	☐
Cords Protected:	☐	☐	☐
LO/TO Required:	☐	☐	☐

FALL PROTECTION:	Yes	No	N/A
Guardrail Systems:	☐	☐	☐
Floor Openings Covered:	☐	☐	☐
Harness:	☐	☐	☐
Lanyard:	☐	☐	☐
Retractable:	☐	☐	☐
Anchor Point:	☐	☐	☐
Vertical Lifeline:	☐	☐	☐
Horizontal Lifeline:	☐	☐	☐
Equipment Inspected:	☐	☐	☐
Rescue Plan:	☐	☐	☐
Training Completed:	☐	☐	☐

Other: _____

SCAFFOLDS:	Yes	No	N/A
Qualified Erector:	☐	☐	☐
Components Inspected:	☐	☐	☐
Outriggers Required:	☐	☐	☐
Secured To Structure:	☐	☐	☐
Fall Protection:	☐	☐	☐
Proper Access:	☐	☐	☐
Scaffold Inspection:	☐	☐	☐
Acceptable Weather:	☐	☐	☐

MATERIAL HANDLING:	Yes	No	N/A
Carts/Dollies:	☐	☐	☐
Forklift:	☐	☐	☐
Forklift Inspection:	☐	☐	☐
Rigging:	☐	☐	☐
Rigging Inspection:	☐	☐	☐
Crane:	☐	☐	☐
Qualified Rigger:	☐	☐	☐
Qualified Signal Person:	☐	☐	☐
Tag Lines:	☐	☐	☐

OVERHEAD WORK:	Yes	No	N/A
Aerial Lift Inspection:	☐	☐	☐
Qualified Operator:	☐	☐	☐
Fall Protection:	☐	☐	☐
Proper Ladder:	☐	☐	☐
Ladder Inspection:	☐	☐	☐
Ladder Secured:	☐	☐	☐
Work Area Barricaded:	☐	☐	☐

ADDITIONAL COMMENTS:

_____
_____
_____
_____
_____
_____
_____

LIST JOB STEPS:

CORRECTIVE ACTIONS:

EMPLOYEE SIGNATURES:

IDENTIFY HAZARDS PRESENT:

EQUIPMENT NEEDED:

Bloodborne Pathogens Exposure Control Plan

Policy Statement

It is the policy of Penn Installations to provide all employees with a safe and healthful work environment free from recognized hazards. It is also a policy to maintain and actively support a comprehensive employee safety and health program.

Purpose

It is the intent of Penn Installations to eliminate or minimize all hazards associated with occupational exposure to bloodborne pathogens (blood or other potentially infectious materials) by the means set forth in this plan. A copy of this plan is available to employees upon request.

General Requirements

This plan provides precautions necessary for employees to use when occupationally exposed to blood, body fluids, and other potentially infectious materials. These materials may cause such diseases as Hepatitis B and Human Immunodeficiency Virus (HIV). All employees that have the responsibility of administering first-aid and CPR are required to attend training on bloodborne pathogens, and are provided the option to receive the Hepatitis B vaccination prior to accepting duties that may expose the individual to potentially infectious materials.

Subcontractors of Penn Installations are required to follow and abide by the content of this plan.

Implementation of the Bloodborne Pathogen Exposure Control Plan is the responsibility of the Field Superintendent with consultation from the Safety Director.

Penn Installations will solicit input from non-managerial employees responsible for direct patient care regarding the identification, evaluation, and selection of effective engineering controls, including safer medical devices.

Exposure Determination

The Field Superintendents are the only employees required to administer First Aid and/or CPR as a part of their duties. Thus, Field Superintendants are the only construction site employees with “reasonably anticipated” occupational exposure. All other employees identified to have occupational exposure to blood or other potentially infectious materials are included in this Exposure Control Plan.

Engineering & Work Practice Controls

- The primary method to reduce occupational exposure will be to isolate and/or contain the hazard.

- Engineering and work practice controls shall be used to eliminate or minimize employee exposure. Where occupational exposure remains after institution of these controls, PPE shall also be used.
- Disposable puncture-resistant containers that are closeable and leak proof on the sides and bottom and properly labeled with the BIOHAZARD symbol shall be used for used needles, blades, implements of treatment, and/or other regulated waste (blood or other potentially infectious materials in a liquid or semi liquid state).
- Containers/bags that are closeable and leak proof on the sides and bottom and properly labeled with the BIOHAZARD symbol shall be used for regulated waste (blood or other potentially infectious materials in a liquid or semi liquid state).
- Containers/bags must be easily accessible, kept upright, replaced routinely, and not allowed to be overfilled.
- Containers/bags shall be examined and maintained or replaced on a regular schedule to ensure their effectiveness.
- When containers of regulated waste are moved, the containers must be securely closed to prevent spillage or leakage.
- Affected employees shall use appropriate personal protective equipment.
- Employees shall wash/disinfect hands immediately or as soon as feasible after removal of gloves or other PPE.
- Access to potential exposure areas shall be controlled with barriers.
- Have available germicide hand wipes or hand washing facilities with soap and running water.
- Storage or consumption of food, drink, tobacco, etc., or the application of contact lenses, cosmetics, lotions, or chapping balm is prohibited in areas of potential occupational exposure.
- Universal Precautions shall be utilized by treating all body fluids and potentially contaminated materials as infected (and always using appropriate personal protective equipment).

Personal Protective Equipment (PPE):

- Employees will routinely use appropriate PPE during patient contact, handling of bodily fluids, or whenever there is a potential occupational exposure. Appropriate PPE means equipment that does not permit blood or other potentially infectious material to contact, pass through, or be absorbed onto the employee's skin, eyes, mouth, or other mucous membranes; examples of Biohazard PPE: surgical type gloves, apron, face shield, eye protection.
- Biohazard PPE will be provided at no cost to employees.
- If a garment is penetrated by blood or other potentially infectious materials, the garment shall be removed immediately or as soon as feasible.
- PPE will be removed prior to leaving the work area, and placed in a biohazard bag.

- Disposable gloves (rubber or latex surgical type) must be properly worn whenever there is a potential exposure. Gloves shall be changed between each patient, and hands and other skin surfaces will be washed immediately after gloves are removed.
- Disposable gloves shall be replaced as soon as practical if they are torn, punctured, or when their ability to function as a barrier is compromised.
- To prevent exposure of the mouth, eyes, and nose, surgical masks and protective eye wear will be worn during procedures that may result in exposure.
- When an employee's clothes come in contact with blood or other potentially infectious materials, those clothes must be removed and treated as a biohazard.
- Protective mouthpieces shall be available where the need for mouth-to-mouth resuscitating may arise.
- Appropriate protective clothing such as gowns or aprons or similar outer garments shall be worn in occupational exposure situations. The type and characteristics of the protective clothing will depend upon the task and degree of exposure anticipated.

Hepatitis B Vaccination:

- The Hepatitis B vaccine shall be made available to all employees with occupational exposure at no cost to the employee(s).
- Employees that decline the vaccination must sign a waiver; however, if the employee later chooses to be inoculated, he/she may do so at no cost.
- The signed waiver shall be placed in the employee's confidential medical file. Employees should note that the Hepatitis B vaccination is effective if received within 7 days after exposure.

Post-exposure Evaluation and Follow-up Evaluation:

The selected healthcare professional shall provide post-exposure evaluation and follow-up evaluation to employees who report an exposure incident. This evaluation shall:

- Document the routes of entry and circumstances surrounding the exposure;
- Identify the source individual, if feasible;
- Test the source individual's blood, if consented to;
- Provide post-exposure medical treatment and evaluation of reported illnesses;
- Offer Hepatitis B vaccination series to exposed employees;
- Provide counseling; and
- Provide written opinion in accordance with OSHA standard 29 CFR1910.1030(f)(5) and include the following:

    - The healthcare professional's written opinion for whether a Hepatitis B vaccination is indicated for an employee and if one was received.
    - The healthcare professional's opinion for post-exposure evaluation and follow-up.

- A note that the employee has been informed of results of the evaluation.
- A note that the employee has been informed about any conditions resulting from exposure to blood or other potentially infectious materials which require further evaluation or treatment.
- Other findings or diagnoses shall remain confidential and not in the written report.
- The written opinion shall be provided to the employee by the employer within 15 days of the completed evaluation.

Penn Installations will ensure that the healthcare professional evaluating an employee after an exposure incident is provided the following information:

- A copy of OSHA's Bloodborne Pathogen Standard (29 CFR 1910.1030)
- A description of the exposed employee's duties as they relate to the exposure incident
- Documentation of the route(s) of exposure and circumstances under which the exposure occurred
- Results of the source individual's blood testing, if available
- All medical records relevant to the appropriate treatment of the employee including vaccination status which are the employer's responsibility to maintain

Recordkeeping

An accurate record for each employee with occupational exposure in accordance with CFR 1910.1020 shall be maintained for at least the duration of employment plus 30 years. Records shall be made available to employees.

Records shall include:

- Name and social security number of the employee
- A copy of the employee's Hepatitis B vaccination status, including the dates of vaccinations and other medical records relative to the employee's ability to receive the vaccination
- Copies of the results of all examinations, medical testing, and follow-up procedures as a result of an exposure
- A copy of the information provided to the healthcare professional following an exposure incident.
- The employer's copy of the healthcare professional's written opinion.

Due to the confidential nature of these records, information will not be disclosed without the employee's written consent, except as may required by law.

Training

This illustration represents labels and signs that serve as warnings of infectious materials:

All training regarding bloodborne pathogens will be conducted by the Safety Director or an employee who is knowledgeable on the subject matter. Training shall include:

- Employees have access to a copy of the OSHA bloodborne pathogen standard and this Exposure Control Plan and the method to obtain them.
- A general explanation of the epidemiology and symptoms of bloodborne disease.
- An explanation of the modes of transmission of bloodborne disease.
- An explanation of the appropriate methods for recognizing tasks and other activities that may involve exposure to blood and other potentially infectious materials
- An explanation of the use and limitations of methods that will prevent or reduce exposure including appropriate engineering controls, work practices, and personal protective equipment
- Information on the types, selection, proper use, location, removal, handling, decontamination and disposal of personal protective equipment
- Information on the hepatitis B vaccine, including information on its efficacy, safety, method of administration and the benefits of being vaccinated
- Information on the appropriate actions to take and persons to contact in an emergency involving blood or other potentially infectious materials
- Explanation of the procedures and method of reporting if an exposure incident occurs.
- Information on the post-exposure evaluation and follow-up process.
- An explanation of the signs and labels.
- Provide an opportunity for interactive questions and answers.

Training for all employees will be provided at the time of initial assignment and within 1 year of their previous training.

Additional training will be administered when changes such as modification of tasks or procedures or institution of new tasks or procedures affect the employee's occupational exposure. The additional training may be limited to addressing the new exposures created.

Training records must include the dates and summary of training sessions, the name(s) and qualifications of the person(s) conducting the training, and the names and job titles of attendees. Training records must be kept for 3 years.

Waiver of Hepatitis B Vaccination

I,_____, understand that due to my potential occupational exposure to blood or other potentially infectious materials, may be at risk of acquiring the Hepatitis B Virus infection. I have been given the opportunity to be vaccinated with the Hepatitis B vaccine at no charge to myself. However, I decline Hepatitis B 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 the Hepatitis B vaccine, I understand that I can, upon request, receive the vaccination series at no charge to me.

Employee Signature/Date: _____

Witness Signature/Date: _____

Emergency Action Plan

Purpose

The purpose of this plan is to establish procedures for the employees of Penn Installations in emergency response and fire prevention.

Guidelines and procedures are provided for the following:

- Facility Evacuation
- Fire
- Chemical Spills
- Bomb Threats/ Workplace Violence
- Serious Accident/ Injury
- Effectively plan emergency situations.
- Provide a model for adequate and effective Emergency Action training.

Sub-contractors of Penn Installations shall also comply with requirements of this written program OR have their own written program meeting at least the minimum requirements of the OSHA standard 29 CFR 1910.38, Employee Emergency Plans and Fire Prevention Plans.

General Requirements

Management Responsibilities:

- Coordinate emergency response efforts for each work location, including evacuating personnel and minimizing property loss.
- Responsible for oversight of health and safety during major (large scale) incidents.
- Coordinates the activities of employees with outside agencies such as Fire Dept., HazMat Team, Police Dept., Medical Services, and Utility companies.
- Ensure that in areas where 911 is not available, the telephone numbers of the physicians, hospitals, or ambulances shall be conspicuously posted.
- Keep records of activities during all stages of the emergency.
- In the event of a fire, explosion, or material release, which would threaten human health outside the facility, or if a spill has reached surface water, immediately notify the National Response Center at the 24-hour number 1-800-424-8802 and provide the following information:
    - Name – Company
    - Date, Time, and type of incident. (i.e. spill, fire, etc.)
    - Quantity and type of hazardous material or hazardous waste involved
    - Extent of injuries, if any.
    - Estimated quantity of recovered materials, if any.
    - If outside agencies are involved, assist them with hazard information.

Supervisor

- Review hazard information with employees for hazardous materials involved.
- Ensure all personnel leave the area or building as per alarm or instructions and keep employees from entering areas during incidents.
- Prior to leaving the building, check rooms and other enclosed areas for employees.
- Upon reaching the designated employee assembly area (specific to the location), account for all personnel.
- Assist any person who may be handicapped and may need assistance in leaving the building.
- Ensure all employees are trained on the emergency procedures specific to the work location.
- Ensure all employees are trained on fire extinguishers and other emergency equipment specific to the location.
- Report ALL accidents, including damages to company owned equipment, private property, motor vehicles and all injuries sustained on the job, regardless of nature or severity, to the Safety Director.

Employees

- Comply with all applicable requirements of this written Emergency Action Program.
- Report all emergency incidents to their supervisor immediately.

Evacuation

- An evacuation plan including a primary and secondary escape routes shall be established at all Penn Installations work locations. Additionally, a method for notifying employees of an evacuation shall be established (i.e. emergency notification system).
- Employees shall be alerted via the location's emergency notification system.
- Employees are instructed to remain in the designated assembly area until a head count is completed, and a supervisor communicates any necessary information concerning the incident.
- The preferred means of reporting fires and other emergencies is by contacting a supervisor, who will contact the necessary parties. When visiting a client location, Penn Installations employees shall comply with requirements governed by the respective owners.
- Employees should assist in the safe and orderly evacuation of other employees, visitors, etc.

Fire

- Office Locations: When an employee observes a fire, the employee shall page all employees using the phone system and begin to sweep through the building notifying employees. The employee shall call 911. When visiting a client location, Penn Installations employees shall comply with requirements governed by the respective owners.
- Field Locations: When an employee observes a fire, the employee shall notify other crew members and (if a large fire) call the area's designated emergency phone number.
- Employees shall be trained in the types of fires and respective fire extinguishers used to extinguish those fires. Fire extinguisher training will occur initially upon hire and annually thereafter. Fire extinguisher training shall include:
    - Types of fires that the employee may encounter.

- Types of fire extinguishers.
- How to identify types of fire extinguishers.
- Inspection procedures. (monthly and annual)
- Proper use of a portable fire extinguisher (P.A.S.S.)

- Fire extinguishers shall be of approved design, inspected, and certified.
- If the employee is trained to use a fire extinguisher, he/she may attempt to extinguish the fire when in its incipient stage (beginning stage) to prevent the fire from spreading to other areas. Employees are trained that this is only done if it can be accomplished without risking his/ her safety. Fire extinguishers are for voluntary use only.
- If the fire is extinguished, the employee will notify their supervisor. The supervisor will inform the fire department to evaluate the specific location of the fire to ensure it is completely out.
- If the fire is not extinguished, the employee shall evacuate and notify their supervisor. The supervisor will inform the fire department of the specific location of the fire.

Chemical Spills

Incidental chemical spills and releases will be responded to as follows:

- When an employee observes a spill or release, he/she shall stop work and notify his/her supervisor of the incident. Employees are encouraged to contain the spill, if it can be done without putting him/herself in danger.
- If an employee observes a spill or release, which he/she cannot safely contain, the employee shall:
    - Evacuate the area and immediately notify his/her supervisor.
    - The supervisor shall keep other employees from entering the spill or release area.
- Large scale spills that reach the drain will be responded to as follows:
    - Evacuate the area.
    - The supervisor will be notified.
    - The supervisor then notifies the local HAZMAT team via the local emergency response system (9-1-1).

Bomb Threats

- If an employee receives a written bomb threat, the employee shall notify their supervisor immediately and avoid unnecessary handling of the note, envelope, packaging, etc.
- If an employee receives a bomb threat via telephone, the employee shall do the following:
    - Do not hang up phone.
    - Get all information: location, size, appearance, time the bomb will explode, etc.
    - Alert another staff member to call the Phone Company to attempt a trace on the call. (Dial "9-1-1" for Emergency Dispatch)
    - Get the caller to talk as long as possible.
    - Notify their supervisor of the threat, who will call the Police Department & request assistance and make a decision concerning evacuation.

Work Place Violence

If workplace violence occurs, the following action shall be taken:

- If a verbal, non-physical confrontation occurs, the Supervisor will be notified of the situation immediately and disciplinary action taken.
- If an unarmed physical confrontation occurs, the Supervisor will be notified of the situation immediately and disciplinary action taken.
- If an armed physical confrontation occurs, the site will be evacuated and the Supervisor will notify Authorities of the situation immediately.

Serious Accident

Employees responding to a serious accident shall:

- Check the scene to ensure it is safe to access.
- Call the proper authorities (9-1-1, Emergency Response).
- Care for the victim (voluntary first responders). Employees may only perform first aid and rescue activities for which they have been trained.
- De-energize any machines, equipment, or power sources that may pose a problem to those assisting the victim.
- Control the area directly surrounding the place of the accident as to prevent interference for EMS personnel or other technicians.
- Identify all employees involved.
- Items used to prevent the spread of Bloodborne Pathogens can be found in the First-Aid Kits.
- Company policy requires that ALL accidents, including damages to company owned equipment, private property, motor vehicles and all injuries sustained on the job, regardless of nature or severity, must be reported to the Safety Director**.**
- Once EMS technicians have finished attending to the victim, any areas contaminated with blood or tissue must be cleaned with bloodborne pathogen solution (10% bleach and water) and all materials used for cleanup must be disposed of in "Biohazard" bags. Clean up may only be performed by trained personnel as per the Company Bloodborne Pathogens Program.
- Falsifying an incident report is grounds for immediate termination and could result in criminal prosecution.

First Aid

- Penn Installations will insure the availability of medical personnel for advice and consultation on matters of occupational health.
- Provisions shall be made prior to commencement of each project for prompt medical attention in case of serious injury.
- In the absence of an infirmary, clinic, hospital, or physician, that is reasonably accessible in terms of time and distance to the worksite (within 3-4 minutes), which is available for the treatment of injured employees, a person who has a valid certificate in first-aid training from the American Red Cross, or equivalent training shall be available at the worksite to render first aid.

- First aid supplies shall be readily accessible on each job site. Supplies must consist of appropriate items for field conditions and work environment.
- The contents of the first aid kit will be in weather-proof containers and inspected at least weekly on each job to ensure that the expended items are replaced.
- Proper equipment for prompt transportation of the injured person to a physician or hospital, or a communication system for contacting necessary ambulance service, shall be readily accessible.
- Where the eyes or body of any person may be exposed to injurious corrosive materials, suitable facilities for quick drenching or flushing of the eyes and body shall be provided within the work area for immediate emergency use.

Training

- Office Locations: Employees shall be trained to assist in the safe and orderly emergency evacuation of employees, accident reporting procedures, and use of fire extinguishers. Several office employees maintain First Aid, CPR, and AED training.
- Field Locations: Employees shall be trained on the elements of this Emergency Response Program, accident reporting procedures, and use of fire extinguishers. There will be at least one employee trained in CPR/First Aid.
- This emergency response plan will be reviewed with employees at initial hire and when the employee's responsibilities / designated actions under the plan change. A copy of this program is available for employee review upon request.
- Additional information regarding emergency action plans and employee roles can be obtained by contacting the Field Superintendent or Safety Director.

Hazard Assessment

Purpose
The purpose of this procedure is to ensure workplace hazards are recognized, assessed and mitigated providing a safe and healthy work environment.

General
Penn Installations performs regular hazard assessments. It is the best way to review the hazards in the workplace, and to protect employees from those hazards. Hazards can change with every process change. Therefore, Penn Installations performs hazard assessments at every construction site.

Penn Installations uses several methods to ensure hazard assessments are completed daily. The following methods will be used at each construction site:

Walkthroughs:
Walkthroughs are conducted by the Safety Director. The Safety Director will complete site walkthroughs at each construction site on a regular basis. During the walkthrough, a site wide safety inspection is completed to identify and predict hazards associated with current and upcoming work phases. The inspection is completed to identify hazards and assign responsibility for the mitigation of the hazard. The hazard findings are compiled within the system and assist in identifying trouble areas. A strong focus will then be placed on those trouble areas, and the development of safe work practices and training, to prevent future reoccurrence.

Daily Job Safety Inspection:
Daily Job Safety inspections are completed by the Superintendents. The inspections are completed daily by every superintendent at each construction site. The Superintendents will use the Daily Job Safety Inspection form to identify and mitigate hazards. The Daily Job Safety Inspection forms are then returned weekly to the Corporate Office, where they are reviewed by the Safety Director and filed in the job site file.

Job Safety Analysis:
Job Safety Analysis's (JSA) will be completed by the Superintendents. Superintendents will complete a JSA prior to the start of the job and each new phase of the project. The JSA provides a systematic identification and mitigation of site-specific hazards before work begins. The JSA is then reviewed with all affected employees, addressing the hazards and controls required for their job tasks. Completed JSA's will be returned to the Corporate Office and reviewed by the Safety Director for accuracy and content.

When safety deficiencies are discovered, the process for getting the deficiencies mitigated is to utilize engineering controls or control the hazard, develop safe work practices and training on how to avoid or minimize exposure to the hazard, or assign personal protective equipment to protect the employee from the hazard.

Housekeeping

General

Good housekeeping is a necessary requirement for maintaining safe and healthful work site. Clean and tidy work sites hold fewer hazards for all employees. Incidents and injuries are avoided and productivity is improved where good housekeeping is a daily occurrence. Common sense and safety concerns encourage standardization of housekeeping measures in the workplace.

Good housekeeping is possibly the most visible evidence of management and employee concern for safety and health that a company displays on a day-to-day basis. Orderliness in our workplace contributes to a safe working environment by minimizing obstacles and potential safety and health threats such as spills, slip, trip, and fall hazards, etc. In fact, we have nine good reasons for housekeeping:

- Prevents incidents
- Prevents fire
- Saves time
- Gives control to our workers
- Increases productivity
- Gives our workers the freedom to move safely around
- Gives our workers pride
- Protects our services and equipment
- Reduces our waste

Walk-Around Assessments

Walk-around assessments will be conducted regularly. The assessments will identify housekeeping concerns, and assign those areas to be cleaned or organized during the work shift.

Housekeeping Procedures

- Good housekeeping means clean and orderly conditions for the entire job—a place for everything and everything in its proper place.
- Rubbish, debris, waste, and useless material will be kept cleared from work areas, passageways, and stairs, in and around buildings or other structures.
- All scrap lumber, forms, crates, and other lumber with protruding nails will have such nails pulled or beat down immediately upon dismantling.
- Employees removing material having protruding nails will wear heavy gloves and heavy-soled shoes.
- Containers will be provided for the collection of waste, trash, and other refuse.
- Garbage and other waste will be disposed of at regular intervals.
- Oily rags and the like will be kept separate and disposed of separately in proper containers with lids.
- Glass containers should not be permitted on the jobsite.
- Lunch and food waste will be disposed of immediately in trash barrels as generated.

Shop Areas

Workers in the shop areas mechanically load and move large, heavy products by mechanical means. This method of material handling requires the following housekeeping measures:

- Keep debris off floors that can create slip, trip, and fall hazards.
- Clean up spills immediately.
- Secure materials properly to prevent spreading or spilling.
- Empty trash cans daily.
- Maintain appropriate lighting levels for good vision.
- Maintain work within designated work areas.

Indoor Storage

- Storage may not obstruct or adversely affect any exit.
- All materials must be stored, handled, and piled with due regard to their fire characteristics.
- A barrier having a fire resistance of at least 1-hour must segregate non-compatible materials that may create a fire hazard.
- Material must be piled to minimize the spread of fire internally and to permit convenient access for fire fighting. Stable piling shall be maintained at all times.
- Clearance of at least 36 inches must be maintained between the top level of the stored material and the sprinkler deflectors. (if sprinkler system is used)
- Clearance must be maintained around lights and heating units to prevent ignition of combustible materials.
- A clearance of 24 inches must be maintained around the path of travel of fire doors unless a barricade is provided, in which case no clearance is needed. Material must not be stored within 36 inches of a fire door opening.

Indoor Work Areas

- Maintain adequate lighting systems in a clean and efficient manner and replace bulbs as soon as possible after failure.
- Properly maintain walls.
- Keep windows clean by washing them regularly.
- Properly maintain doors and windows in a good working order and repair any damage to doors and windows as soon as possible.
- Provide adequate ventilation to all work areas to keep air free of dust and other contaminants.
- Maintain and clean all ventilation systems and HVAC systems at regular intervals.
- Provide an adequate number of waste receptacles at accessible locations throughout all work areas.
- Keep floors clean; dry (dry as possible); slip-resistant; and free of waste, unnecessary material, oil and grease, protruding nails, splinters, holes, or loose boards.
- Keep aisles and walkways free of physical obstructions that would prevent access, including path-blocking objects, liquid or solid spills, and other obstructions.

Office Buildings

Housekeeping procedures for keeping our grounds and building faces/sides neat and orderly include:

- Keep the parts of buildings that are visible to public roads cleaned by washing them at regular intervals.
- Keep the other parts of buildings cleaned at regular intervals.

- Keep all doors and walkways completely free of debris, shrubs, or other obstructions.
- Maintain visibility through all windows by washing at regular intervals.
- Keep doors and windows properly maintained in good working order.
- Repair any damage to doors and windows at regular intervals.
- Provide any stairs or platforms adjacent to or leading into the building(s) with adequate rails, adequate treads to climb and an area clean and free of materials.
- Keep grounds neat and orderly, free of refuse and unnecessary materials.
- Store materials outdoors only in designated areas.
- Provide designated walkways through grounds, preferably paved and kept clear of materials or any other physical hazards.
- Provide a lighting system that is adequate to allow employees to navigate around the grounds as necessary at dusk and after dark.
- Maintain a neat landscaping appearance by trimming the lawn, trees and shrubs in such a way as to minimize any possible safety hazards.
- Prevent trees and shrubs from obstructing doors and windows.

Training

All of our employees need to fully understand the safety and health hazards of poor housekeeping and improper chemical storage to protect themselves, fellow employees, and the citizens of nearby communities. While training in Hazard Communication will help employees to be more knowledgeable about the chemicals they work with as well as familiarize them with reading and understanding SDS's, we will also train them as part of our Housekeeping Program covering housekeeping procedures and safe work practices, hazard reporting, and other areas pertinent to housekeeping.

FIRE PREVENTION AND PROTECTION

General

The prevention of fires is of utmost importance. Good housekeeping and equipment maintenance must be followed to keep fire hazards at a minimum. All fires shall be reported immediately to the Site Superintendent.

- Only approved metal dispensing containers and portable tanks shall be used for the storage and handling of flammable and combustible liquids. This approval is indicated by the presence of the Underwriters Laboratory Approval (UL symbol inside of a circle) or Nationally Recognized Testing Laboratory (NRTL) label. No plastic containers are allowed for the storage of flammable or combustible material.
- Hand-carried containers, known as secondary containers shall not exceed 5-gallon capacities.
- Smoking or any other source of ignition is prohibited in re-fueling and storage areas. Signs shall be posted to warn of the danger in all re-fueling and storage areas.
- Maintain a spill kit on site. In the event of any spills, immediately clean up the spill. Report any spills to the superintendent so spill kit supplies are replenished.
- Storage containers shall be labeled (GASOLINE, DEISEL, etc.) and legible.
- Oily waste or oil-soaked material must not be left lying around. Spontaneous combustion may result and cause a fire. To prevent such fires, a covered metal container for disposal of oily rags, waste, and other flammable rubbish must be provided. These must be emptied often enough to keep premises in a safe, sanitary condition.
- The use of gasoline as a cleaning agent is strictly forbidden.
- In the event of a gas leak, all sources of ignition shall be shut down without delay.
- When testing for gas leaks, use soap suds or approved leak detector fluid. Never use open flame.
- Paint, insect sprays, and most paint removers are usually flammable; their use near open flames or other sources of ignition must be avoided. Read the labels on the containers.
- Firefighting equipment is for fire use only and shall be kept in its designated place at all times.
- All fire protection equipment must be located in designated areas that are clearly identified with appropriate markings. This equipment should be located in the vicinity of likely fire hazards, but it must be accessible to operating personnel. The number, type, and location of extinguishers must meet all applicable standards. At a minimum, a fire extinguisher, rated not less than 2A, shall be provided for each 3,000 square feet of the protected construction area, or major fraction thereof. Travel distance from any point of the protected area to the nearest fire extinguisher shall not exceed 100 feet.
- Fire extinguishers hose nozzles should be kept free of obstruction at all times. In areas where insects tend to nest in protected small areas, the nozzle should be covered with small cloth or plastic bag to keep it free of obstructions.
- All employees shall be instructed in the proper use of available firefighting equipment. Those working at places where special precautions against fire must be taken are required to be so instructed. Basic first aid fire fighting techniques are required for any employee performing these duties and responsibilities.
- A fire extinguisher that is empty, defective, or has been discharged should never be re-hung

until it has been serviced or repaired. Manufacturer's instructions for refilling and maintaining extinguishers must be followed.

- Portable fire extinguishers shall be maintained in a fully charged and operable condition and kept in their designated place at all times when they are not being used.
- Extinguishers shall be conspicuously located where they will be readily accessible and immediately available for use. They shall be located along normal paths of travel and or at the immediate work site.
- Extinguishers having a gross weight not exceeding 40 pounds should be installed so that the top of the extinguisher is not more than five feet above the floor. Extinguishers having a gross weight greater than 40 pounds should be so installed that the top of the extinguisher is not more than 3½ feet above the floor.
- All Fire Extinguishers are subject to the following inspection and testing:
  - Monthly Visual Inspection
    - Operating instructions in the nameplate are legible
    - Safety seals and tamper indicators are not broken and in place
    - Determine the fullness by weight
    - Examine for obvious physical damage, corrosion, leakage, or a clogged nozzle
    - Pressure gauge reading or indicator is in the operable range position
    - Ensure the annual inspection is not due or past due
  - 3rd Party Annual Testing
    - Outside fire protection services will be used for these inspections, and any defective equipment will be replaced at their discretion.
- Removal from service may include:
  - Defective hydrostatic testing
  - Inoperable gauge
  - General damage
  - Missing labeling or inspection tags
  - Out of service life requirements as stated by the manufacturer.

Classes of Fires

- Class "A" fires are those that occur in ordinary materials such as wood, paper, rags, and rubbish. The quenching and cooling effects of water or of solutions containing large percentages of water are of first importance in extinguishing these fires.
- Class "B" fires are those that occur in the vapor-air mixture over the surface of flammable liquids such as gasoline, oil, grease, paints, and thinners. The limiting of air is of primary importance. Generally, regular dry chemical, multi-purpose dry chemical, carbon dioxide, and foam may be used depending on the circumstances of the fire. Solid streams of water are likely to spread the fire, but on large fires of this class, water fog nozzles prove effective.
- Class "C" fires are those which occur in or near electrical equipment where non-conducting extinguishing agents shall be used. Dry chemical, carbon dioxide, or compressed gas may be used. Foam or a solid stream of water should not be used because they are conductors and can expose the operator to a severe shock hazard.
- Class "D" fires are those that occur in combustible metals such as magnesium, titanium, zirconium, lithium and sodium. Specialized techniques, extinguishing agents, and extinguishing equipment are needed to control and extinguish fires of this type. Normal extinguishing agents shall not be used as there is a danger of increasing intensity of the fire because of a chemical reaction between some extinguishing agents and the burning metal.

Flammable Liquids

- Flammable liquids such as gasoline, benzene, naphtha, and lacquer thinner must not be used for cleaning purposes.
- Do not store flammable liquids in open containers.
- Spills or overflow of flammable liquids should be avoided. However, in the event of spillage, immediate steps should be taken to clean up and minimize the danger of fire.
- All solvents should be kept in approved, properly labeled containers. Gasoline and other highly flammable liquids should be handled, transported, and dispensed only in properly labeled red safety cans.
- With exceptions of gasoline and oil, the mixing of two or more flammable liquids is prohibited.
- When pumping highly flammable liquids from one container to another, metallic contact should always be maintained between the two containers.

Good Housekeeping to Prevent Fires

Good housekeeping should be maintained at all work locations and in all vehicles. Combustible materials such as oil soaked rags, waste and shavings should be kept in approved metal containers with self-closing lids. Containers should be emptied daily. Paper and other combustible materials should not be allowed to accumulate.

Safe Handling and Storage of Flammable & Combustible Material

Indoor Storage

- No more than 25-gallons of flammable liquids shall be stored in a room outside of an approved storage cabinet.
- Quantities in excess of 25-gallons shall be stored in an approved metal storage cabinets.
- An ABC fire extinguisher shall be placed not more than 10 feet from flammable storage areas.
- Flammable and combustible liquids shall not be stored in areas used for lunch/breaks, exits, stairways, or for the safe passage of people.
- Storage cabinets, rooms, or particular areas should be designated to store flammable liquids. Cabinets should be labeled "FLAMMABLE - KEEP FIRE AWAY".
- Not more than 60 gallons of flammable or 120 gallons of combustible liquid shall be stored in any one storage cabinet or container.

Outdoor Storage

- Storage of containers (not more than 60 gallons each) shall not exceed 1,100 gallons in any one area.
- The storage area shall be graded in a manner to divert possible spills away from buildings or other exposures, or shall be surrounded by a curb or earth dike 12 inches high.
- An ABC fire extinguisher shall be placed not less than 25 feet, nor more than 75 feet from storage areas.

Portable Storage Tanks

- Portable storage tanks shall not be placed within 20 feet of any building.
- Storage area shall be kept free of weeds, debris, and other combustible material.
- Storage tanks shall be equipped with emergency venting and other devices, as required by the National Fire Protection Association (NFPA).

- Fuel tanks equipped with electric motors shall have clips provided to attach to equipment batteries. The clips must be color coded with red tape for the positive and black tape for the ground clip. Clips shall be attached to the battery before fueling and removed only after fueling is complete. Battery supply shall be in an approved container and placed outside the containment and a minimum of 10 feet away from the fuel tanks.
- Dispensing nozzles shall not be equipped with lock-open devices. The nozzles shall always have to be hand-held when filling. All nozzles shall stop the discharge of fuel when released.
- Dispensing hoses and nozzles shall be an approved type complete with grounding strips. The grounding strips may be integral to the hose and nozzle.
- An ABC Fire Extinguisher shall be hung no closer than 25 feet and no farther than 50 feet from the storage tanks. Two extinguishers shall be required for tanks in excess of 1,000 gallons.
- Fuel tanks shall be placed in a spill containment area.

Equipment Fueling Guidelines

- Before fueling, a ground wire must be connected between the frame of the fueling truck or trailer and to the frame of the equivalent being fueled.
- No open flames, sparks, or smoking is allowed during fueling.
- Fuel truck and equipment being fueled must not be running during fueling.
- Fuel tanks must be visually identified as to contents and flammability.
- A 20-pound type ABC fire extinguisher must be maintained on the fuel truck and fuel trailer.
- All fuel tank hoses will be equipped with automatic shut-off controls for stopping fuel flow when receiver tanks are filled to capacity.
- When operator is fueling tanks he must manually hold the fuel nozzle at all times.
- Locking devices are not allowed for fuel nozzles and must be removed if so equipped from the factory.
- Prior to fueling operations, all hoses and connections must be visually checked for cuts, leaks and kinks.
- Fuel trucks or tanks will not be parked adjacent to ditches, trenches, or open bodies of water where fueling operations will be performed.
- The fuel tank operator is responsible for following proper procedures during fueling operations and must be present at all times during fueling.
- Gasoline or diesel must be stored and transported in approved containers only.
- Gasoline contains benzene that is a carcinogen and could cause a hazard. Stand up-wind when fueling if possible.
- Permanent fueling areas should be marked with signs reading "Caution - Fueling - No Smoking".
- Gasoline shall not be transported in the trunk of a vehicle.

Proper Use of Fire Fighting Equipment

All Employees shall be trained on the proper use of the fire extinguishers upon assignment, annually thereafter and when the type of extinguisher or operation instructions changes.

When fighting a fire with a standard portable fire extinguisher, use the following procedure in extinguishing the fire:

- Always use the handle to carry an extinguisher. Walk at a rapid pace--do not run to a fire.
- Approach the fire upwind. Stay well clear of the flames. When you are approximately 10 feet upwind of the near edge, stop and ready your extinguisher for discharge by pulling out the pin. Hold the extinguisher in one hand and point the hose with the other.

- Once your extinguisher is set for discharge, position yourself within eight feet of the near edge upwind of the fire.
- When discharging the extinguisher agent, aim your stream just short of the near edge.
- Apply the agent in a side-to-side sweeping action across the full width of the fire. Make sure each sweep of the extinguishing agent is slightly wider than the near or leading edge of fire.
- Advance forward only as fast as the extinguishing action of your agent will permit. Do not outrun your protection. Do not raise your stream to chase the flame. Keep it down in front of the flame edge.
- Stop short of the already extinguished fuel area. Do not become involved in the fire. Above all, maintain your side-to-side sweeping action until the fire is extinguished. Once the fire is out, stand by for a few minutes. Make sure there is no danger of a reigniting. Do not ever turn your back on an apparently extinguished fire.

Fire Watch

The following information outlines areas and/or situations where a fire watch is required.

A fire watch shall be required when hot work is performed in a location where a fire might develop, areas defined by local management or where the following conditions exist.

- Combustible materials in building construction or contents are closer than 35 feet to the point of operation.
- Combustible materials are more than 50 feet away but are easily ignited by sparks.
- Wall or floor openings within 50 feet radius expose combustible materials in adjacent areas including concealed spaces in walls or floors.
- Combustible materials are adjacent to the opposite side of partitions, walls, ceilings or roofs and are likely to be ignited.
- Areas where sparks or hot slag may fall into a process area that may result in igniting combustible or flammable substances in the process.
- Areas designated as high fire hazard areas.

Exceptions

The following areas and situations may obtain an exemption to this regulation:

- Hot work to be conducted in a lay down yard or another such isolated area where no (zero) risk of exposure to or the ignition of combustible/flammable materials.
- New construction areas with no (zero) risk of exposure to or the ignition of combustible/flammable vapor or solid materials may obtain exemption from hot work permit.
- Work areas approved for the duration of specific jobs or projects that are clearly identified and restricted by roping off or other visible means.

General Requirements

A "Hot Work Permit" will be required when using any equipment, tools or apparatus capable of generating heat, sparks or flames in any restricted areas. Examples include but not limited to, welding, burning, cutting, sawing, grinding, drilling, and open flame operations.

Completion and Issue of Permits

- Every question on the form must be answered in ink. Where any item is not applicable, it will be marked thus and not left blank.

- The Superintendent will be responsible for obtaining permits from the company or client issuing authority.
- Superintendents and foreman are authorized to sign a valid permit.
- The person executing the work will sign the permit, thereby signifying that they fully understand the conditions spelled out on the permit and will honor those conditions.
- On completion of the work, the bottom portion of the permit shall be completed by the person executing the work and returned to the point of issue.

Duration of Validity of Hot Work Permit

- A permit is not valid for more than one shift. In any case, the duration of the Hot Work Permit shall not exceed 12 hours. A new permit is to be issued if the job/task duration exceeds 12 hours.

Cancellation of Permit

- Any competent authority may stop the work covered by this permit at any time if they consider the prevailing conditions or work methods to be unsafe.
- The issuing authority will visit the work site and decide whether or not the permit should be re-validated. It must be clearly understood that, with just reason, any competent authority may stop the work, but only the issuing authority can permit a restart.

Hot Work Permit Guidelines

- The supervisor/designee is responsible for testing and certifying in writing that no flammable gases, liquids or solids, oxygen deficiency or toxic materials are present in the location. Gas testing shall be in accordance with approved methods and equipment. Tests should indicate, and the Hot Work Permit certifies, that there are no flammable gases present.
- Adequate ventilation shall be provided when working in a closed container or enclosed space (i.e., a minimum of 12 changes of air per hour at the point or points where work is being performed). If adequate ventilation is not possible, suitable respiratory protection shall be used.
- Before burning into or heating any hollow vessel or equipment, which has been in service of any kind, the vessel or equipment shall be properly vented (unless the operation is performed under controlled conditions so that any over pressuring will be avoided).
- A fully charged fire extinguisher of a type and size designated as suitable shall be provided where hot work is to be done.
- Gas-burning and welding torches and hose shall be removed from all vessels or closed containers, or hose shall be disconnected at the regulators at the end of any shift and at lunch time or at any other time when work is discontinued.
- Cylinders of any flammable material shall never be placed in a container where hot work is performed.
- When hot work is done in overhead locations, a method for catching hot metal, electrode stubs, etc., must be provided to prevent a fire hazard.
- Flammable gas and oxygen deficiency testing will only be undertaken using an approved explosive meter or oxygen meter.

Fire Watch Requirements

- The fire watch shall be trained on the proper execution of the fire watch responsibilities. Proper use of fire extinguisher shall be included in this training.
- The fire watch shall be familiar with the location and nature of the hot work.

- The fire watch shall have no other duties. If the fire watch leaves, the hot work will be disconnected, the welder turned off and electric supply turned off until he/she returns. The fire watch shall remain in constant communication range with person(s) performing work.
- The fire watch shall be provided with the proper fire extinguisher(s), which shall be located in the immediate area for quick availability. These extinguishers should not be taken from safety stations. They are to be used for emergencies only.
- The fire watch shall be provided with an air quality monitor on jobs that could potentially involve flammable gases or vapors. The area shall be periodically tested with the meter. If the monitor indicates a percent concentration at the lower explosive limit, the hot work shall be stopped and the potential problem corrected before the hot work can be restarted.
- The fire watch shall continually survey the work area for combustible materials.
- More than one fire watch may be required depending on potential impact on other areas, such as floors below the hot work activity.
- If a potential for a spill in an adjacent area could create a hazard, a roving monitor with an explosion meter shall be assigned to patrol the area with instructions to immediately stop the hot work if flammable conditions are detected.
- If there is a fire that the fire watch cannot extinguish quickly and safely, the emergency evacuation alarm shall be activated and emergency services contacted. The fire watch shall always know the location of the nearest alarm box or procedure for evacuating area and contacting emergency services.
- The fire watch shall survey the work area after completion of hot work activities as mandated by project requirements (usually 30-120 minutes).

Office Fire and Life Safety

- All occupants of facilities should familiarize themselves with emergency procedures in their respective building so that they know what to do when an alarm sounds.
- All possible exits, exit access routes and exit discharge routes shall be kept unobstructed to allow safe and smooth evacuation in the event of an emergency.
- Know the locations of fire alarm stations and how to operate them.
- Know the location and how to use and/or operate the fire extinguisher.
- Automatic sprinkler systems will be maintained with a clearance of thirty-six (36) inches between the sprinkler head and stored material or other items in the path of sprinkler discharge.

Training

Initial Training and Annual Required Refresher Training

- Employees will be trained on all of the following components at initial hire and annually thereafter before being assigned duties that involve the use of fire extinguishers
- Employee will be trained on the following:
  - General fire principles including the components of the fire tetrahedron.
  - Fire prevention practices not limited to fuel/combustible storage and handling requirements.
  - Hazards involved with fighting incipient stage fires.
  - Fire extinguisher selection principles based on fuel material present, and classification.
  - Fire Extinguisher Use and Safe Practices.
  - Testing and inspection methods for fire extinguishers including monthly visual inspection requirements.

- OSHA Standard Requirements for Fire Protection not limited to employer and employee responsibilities under the standard.
- Fire extinguisher locations.

Retraining before the annual requirements may be required based on changes to company polices or the following criteria:

- Change in job assignment.
- Changes in machines that have a potential to create a different fire hazard, or potential for additional exposure
- Following a change to company procedures related to fire prevention, or following a change in Penn Installations Emergency Action Plan.
- Penn Installations has reason to believe that there has been deviation from, or inadequacies in the employee's knowledge regarding the elements of this written program

Training will be documented and records for each employee will be retained for the duration of employment.

Hot Work Permit

Emergency Phone #:

Location of Phone:

Instructions

1. Person doing Hot Work: Indicate time started and post permit at Hot Work location.
   After Hot Work, indicate time completed and leave permit posted for fire watch.

2. Fire Watch: Prior to leaving area, do final inspection and sign permit.
   Return completed permit to Foreman upon completion of fire watch.

Hot Work Being Done By:

☐ Penn Installations Employee
☐ Contractor

Date:

Location/Building:

Nature of Task:

Permission is given to complete this work, provided required precautions have been completed.

Signature of person authorizing hot work:

_____

Hot Work Started at:

Started:	Stopped:

Fire Watch Completed (30 minutes after):

Time:

Fire Watch Sign Off:

Work area and adjacent areas to which sparks and heat may spread were inspected for 30 min. after hot work and found safe.

Signature:

_____

Required Precautions Checklist

☐ Available sprinklers, hose streams and extinguishers are in service.
☐ Hot Work equipment in good repair.

Within 35 Feet Of Hot Work

☐ Flammable liquids, dust, lint and oily deposits removed.
☐ Explosive atmosphere in area eliminated.
☐ Floors swept clean of combustibles.
☐ Combustible floors wet down, covered with damp sand, metal or fire-resistive tarpaulins
☐ Remove other combustibles or protect with fire-resistive tarpaulin or metal shields.
☐ All wall and floor openings covered.
☐ Fire-resistive tarpaulins suspended beneath work to collect sparks.

Work On Walls & Ceilings

☐ Construction noncombustible and without combustible covering.
☐ Combustibles moved away from other side of walls.

Work On Enclosed Equipment

☐ Equipment cleaned of all combustibles.
☐ Containers purged of flammable vapors.

Fire Watch

☐ Fire watch to be provided during and for a minimum of 30 minutes after work is complete.
☐ Fire watch to have a minimum 10 lb. multi-purpose (BC rated) dry chemical extinguisher.
☐ Trained in the use of equipment and in sounding the fire alarm
☐ Fire watch may be required for adjoining areas above and below

Other Precautions:

Fall Protection Plan

Fall hazards shall be eliminated, whenever possible, through the use of guardrails, perimeter cables, safety nets or hole covers. When the hazard cannot be eliminated, Personal Fall Protection Devices (PFPD) will be used.

This program applies to all employees who are exposed to fall hazards, except when designated employees are inspecting, investigating, or assessing workplace conditions before the actual start of construction or after construction has been completed.

Purpose

Penn Installations is dedicated to the protection of its employees from on the job injuries. All employees of Penn Installations have the responsibility to work safely on the job. The purpose of this program is:

- Prevent fall related incidents.
- Ensure fall hazards are identified and adequate controls implemented.
- To ensure each employee has received adequate and effective fall protection training.
- Ensure employees understand the Fall Protection requirements set forth by Penn Installations and OSHA Fall Protection Standard.

Our Duty to Provide Fall Protection

Penn Installations has a duty to anticipate the need to work at heights. Careful planning and preparation will be conducted for each situation to ensure protection is adequate. Fall protection systems selected will be installed prior to an employee performing work.

Fall protection is required 100% time for personnel working on a working/walking surface (horizontal and vertical) with an unprotected edge or side that is 6 feet or more above a lower level or when required by additional rules.

Responsibilities

Management

- Ensure necessary and adequate fall protection equipment is available.
- Ensure periodic reviews of this program are conducted.
- Ensure periodic audits of employees utilizing fall protection are conducted. If deviations or inadequacies are identified, management will take necessary action to correct.
- Ensure an adequate level of training is provided for all employees covered by this program.

Superintendents

- Ensure the requirements set forth in this written program are being followed.
- Ensure employees are provided and using necessary fall protection.
- Ensure each employee using fall protection have received adequate training.
- Enforcement of this written program.

Employees

- Employees shall comply with the requirements stated in this program. Failure to comply will result in disciplinary action.

- Employees shall notify Superintendent when any fall hazards are found and shall be corrected immediately.

Hazard Assessment

A hazard assessment shall be completed at each Penn Installations job locations. The hazard assessment shall be documented on the Job Safety Analysis (JSA) and communicated to each employee of the proper fall protection requirements. The hazard assessment shall identify any anticipated fall hazards and the selection of the appropriate measures and equipment for protection.

Fall Protection Systems and Criteria

Leading Edge

All employees on a walking/working surface (horizontal and vertical surface) with an unprotected side or edge which is 6 feet or more above a lower level shall be protected from falling by the use of guardrail systems, safety net systems, or personal fall arrest systems.

OSHA has determined that there is no "safe" distance from an unprotected side or edge that would render fall protection unnecessary.

Employees who are not constructing the leading edge, but who are on walking/ working surfaces where leading edges are under construction, will also be protected from fall by the use of guardrail systems, or personal fall arrest systems.

Holes

All employees on walking/working surfaces shall be protected from falling through holes (including skylights) more than 6 feet above lower levels, by personal fall arrest systems, covers, or guardrail systems erected around such holes.

All employees on a walking/working surface shall be protected from tripping in or stepping into or through holes of 2" or more (including skylights) by covers, and be protected from objects falling through these holes.

All covers should be clearly marked with "hole" or "cover" and be secured to prevent accidental displacement.

Covers located in roadways and vehicular aisles shall be capable of supporting, without failure, at least twice the maximum axle load of the largest vehicle expected to cross over the cover. All other covers shall be capable of supporting, without failure, at least twice the weight of employees, equipment, and materials that may be imposed on the cover at any one time.

Excavations, Wall Openings, and Dangerous Equipment

Employees at the edge of an excavation 6 feet or more in depth shall be protected from falling by guardrail systems, fences, or barricades when the excavations are not readily seen because of plant growth or other visual barrier.

Employee at the edge of a well, pit, shaft, or similar excavation 6 feet or more in depth shall be protected from falling by guardrail systems, fences, barricades, or covers.

Employees working on, at, above, or near wall openings (including those with chutes attached) where the outside bottom edge of the wall opening is 6 feet or more above lower levels and the inside bottom edge of the wall opening is less than 39 inches above the walking/working surface, shall be protected from falling by the use of a guardrail system, a safety net system, or a personal fall arrest system.

Any employee less than 6 feet above dangerous equipment shall be protected from falling into or onto the dangerous equipment by guardrail systems or by equipment guards, or if 6 feet or more above dangerous equipment shall be protected from fall hazards by guardrail systems, personal fall arrest systems, or safety net systems.

Formwork and Reinforcing Steel

Employees working on formwork and reinforcing steel, each employee on the face of formwork or reinforcing steel shall be protected from falling 6 feet or more to lower levels by personal fall arrest systems, safety net systems, or positioning device systems.

The use of double retractable lanyards attached to the harness, along with positioning devices will be used when climbing and working from concrete formwork and reinforcing steel.

Hoist Areas

In all situations where equipment and material hoisting operations take place, the use of covers, guardrail systems, or personal fall arrest systems will be used to protect employees and subcontractors from fall hazards.

When guardrails (or chains and gates) are removed to facilitate hoisting operations and one of our employees must lean through the access opening or out over the edge to receive or guide materials they will be protected by a personal fall arrest system.

Precast Concrete Erection

Employees involved in precast concrete erection that is 6 feet or more above a lower level, must be protected by guardrails or personal fall arrest systems. When necessary, fall protection systems will be designed by a reregistered professional engineer.

Walking/Working Surfaces Not Otherwise Addressed

We realize there will be situations that are not covered by this written program. For those situations, all employees exposed to falls of 6 feet or more to lower levels must be protected by a conventional fall protection system.

We equip all ramps, runways, and other walkways with guardrails when employees are subject to falling 6 feet or more to lower levels.

Protection from Falling Objects

When employees are exposed to falling objects, we ensure they wear hard hats and also implement one of the following measures:

- Erect toe boards, screens, or guardrail systems to prevent objects from falling from higher levels.
- Erect a canopy structure and keep potential fall objects far enough from the edge of the higher level so that those objects would not go over the edge if they were accidentally moved.
- Barricade the area to which objects could fall, prohibit employees from entering the barricaded area, and keep objects that may fall far enough away from the edge of a higher level so that those objects would not go over the edge if they were accidentally moved.
- Cover or guard holes 6 feet or more above a lower level.

Impalement

When employees are exposed to impalement hazards, such as rebar or form pins, they shall be protected by the use of rebar caps containing steel reinforcement or rebar caps that position a 2 x 4 over the exposure.

Personal Fall Arrest Systems

The personal fall arrest system (PFAS) shall consist of a full-body harness, connecting device (shock absorbing lanyard), and an anchor point.

The harness shall be a full-body harness. The harness shall be worn properly with all straps positioned, connected and tightened according to manufacturer's requirements.

The connecting device shall be a self-retracting lifeline or shock absorbing lanyard.

- Self-retracting lifelines are the preferred connecting device and shall be used whenever possible.
- When the use of a self-retracting lifeline is not possible, shock absorbing double-legged lanyards shall be used.
- When using a shock absorbing double-legged lanyard, the minimum free fall distance shall be 18.5 feet. The free fall distance is the distance from the anchor point to the first surface a falling working may contact if the worker should fall.

Anchor points (tie-off points) shall be located overhead, or as high as possible and must be able to withstand a minimum of 5,000 pounds of force and shall be independent of any anchorage being used to support or suspend platforms.

Prompt rescue of employees in the event of a fall shall be provided for or shall assure that employees are able to self rescue. The rescue plan shall be completed and communicated to all workers prior to using personal fall arrest systems (PFAS).

Inspection of Personal Fall Arrest Systems

All employees using personal fall arrest systems shall inspect each component prior to each use. The component shall be inspected for cuts, frays, burns, oil/solvents, and hardware is working properly. Personal fall arrest systems shall be inspected and documented annually by the Safety Director.

- DO NOT USE the damaged component. All damaged components shall be immediately taken out of service. Report any found damaged components to the Safety Director.
- Storage of all fall protection equipment shall be in such a manner to prevent damage to the equipment. Store fall protection equipment in an area where it cannot be damaged from sharp objects, dirt, oil, grease or other agents that may damage or weaken the fall protection equipment.
- Personal fall protection equipment subjected to impact loading (involved in a fall) shall be immediately removed from service.

Guardrails

Guardrails shall be installed on all open sides of floors, walkways, and work platforms where the fall distance is 6 feet or greater from the lower level.

Guardrails shall consist of a top rail, mid rail, and toe board. The top rail shall have a vertical height of 42 inches (+/- 3 inches), the mid rail shall be at 21 inches (mid way between top rail and surface), and the toe board at minimum 4 inches in height.

Guardrail systems shall be capable of supporting, without failure, a force of at least 200 pounds applied within 2 inches of the top edge, in any outward or downward direction, at any point along the top edge. (When 200 pound load test is applied in the downward direction, the top edge shall not deflect to a height less than 39 inches above the walking/working surface.)

When wood railings are used, the posts shall be at least 2 x 4-inch lumber and spaced not more than 8 feet apart, the top rail shall be at least 2 x 4-inch lumber, and the mid rail shall be at least 1 x 6-inch lumber.

When pipe railing is used, the post, top rail and mid rail shall be at least 1- ½ inches nominal diameter (schedule 40 pipe) with posts not spaced more than 8 feet apart.

When structural steel railing is used, the posts, top rail, and mid rail shall be at least 2 x 2 x 3/8-inch angles, with posts not spaced more than 8 feet apart.

When wire rope railing is used, it shall have a diameter of at least ½ inch and be stretched taut to allow no more than a 3-inch deflection. The wire rope shall be flagged at least every 6 feet with high-visibility material.

Warning Line System

A warning line shall be erected around all sides of the roof work area.

When mechanical equipment is not being used, the warning line shall be erected not less than 6 feet from the roof edge. When mechanical equipment is being used, the warning line shall be erected not less than 6 feet from the roof edge which is parallel to the direction of mechanical equipment operation, and not less than 10 feet from the roof edge which is perpendicular to the direction of mechanical equipment operation.

Points of access, material handling areas, storage areas, and hoisting areas shall be connected to the work area by an access path formed by two warning lines. When the path to a point of access is not in use, a rope, wire, chain, or other barricade, equivalent in strength and height to the warning line, shall be placed across the path at the point where the path intersects the warning line erected around the work area, or the path shall be offset such that a person cannot walk directly into the work area.

Warning lines shall consist of ropes, wires, or chains and supporting stanchions erected as follows:

- The rope, wire, or chain shall be flagged at not more than 6-foot intervals with high-visibility material;
- The rope, wire, or chain shall be rigged and supported in such a way that its lowest point (including sag) is no less than 34 inches from the walking/working surface and its highest point is no more than 39 inches from the walking/working surface;
- After being erected, with the rope, wire, or chain attached, stanchions shall be capable of resisting, without tipping over, a force of at least 16 pounds applied horizontally against the stanchion, 30 inches above the walking/working surface, perpendicular to the warning line, and in the direction of the floor, roof, or platform edge;
- The rope, wire, or chain shall have a minimum tensile strength of 500 pounds and after being attached to the stanchions, shall be capable of supporting, without breaking, the loads applied to the stanchions as prescribed in paragraph 9.5.4.3 of this section;

- The line shall be attached at each stanchion in such a way that pulling on one section of the line between stanchions will not result in slack being taken up in adjacent sections before the stanchion tips over;

No employee shall be allowed in the area between a roof edge and a warning line unless the employee is performing roofing work in that area.

- The use of personal fall arrest systems are required to be worn when working in the above area.

General Worksite Policy

1. A hazard assessment must be completed at each job location. Based on the hazard assessment, all fall exposures (6 feet or greater above the lower surface) must be protected by conventional fall protection. The hierarchy of selection shall be guardrails, perimeter cables, or hole covers. When the hazard cannot be eliminated, personal fall arrest systems (PFAS) will be used. 100% tie-off at all times when using personal fall arrest systems.
2. Based on hazard assessment, notify the Safety Director to provide required training.
3. Only employees trained in fall protection are permitted to erect, maintain, wear, and inspect fall protection.
4. A Fall Rescue plan must be implemented for each job location. The rescue plan must be communicated to each employee.
5. Job locations shall be kept clean, orderly and in a sanitary condition. All walking/working surfaces must be kept in a clean and, so far as possible, dry condition. Where wet processes are used, drainage shall be maintained and false floors, platforms, mats, or other dry standing places should be provided where practicable.

Training Program

Under no circumstances shall employees work in areas where they are exposed to fall hazards. Only those employees trained in fall protection recognition and the use of personal fall arrest systems are expected to perform activities requiring the use of such equipment.

The training program includes classroom instruction and operational training on recognition and avoidance of unsafe conditions and the regulations applicable to their work environment for each specific fall hazard the employee may encounter. The training program is given by the Safety Director; a “competent person” qualified in each aspect of the program, and must cover the following areas:

- The nature of fall hazards in the work area.
- Selection and use of personal fall arrest systems, including application limits, proper anchoring and tie-off techniques, estimation of free fall distance (including determination of deceleration distance and total fall distance to prevent striking a lower level), methods of use, and inspections and storage of the system
- The correct procedures for erecting, maintaining, disassembling, and inspecting the fall protection systems to be used.
- The use and operation of guardrail systems, personal fall arrest systems, safety net systems, warning line systems, safety monitoring systems, controlled access zones, and other protection to be used.
- The role of each employee in the safety monitoring system when this is used.
- The limitations on the use of mechanical equipment during the performance of roofing work on low-sloped roofs.

- The correct procedures for the handling and storage of equipment and materials and the erection of overhead protection.
- The role of employees in fall protection plans.
- The standards contained in Subpart M of the construction regulations.

The Safety Director or Safety Mentor will identify all current and new employees who require training and schedule the classroom instruction for those employees. Training on the above components will occur both in the classroom and on the job site, as appropriate. Classroom training will cover written policy/procedures on fall protections and include a training video on the subject. Job site instruction will include demonstration of and practice in wearing fall protection equipment and any instruction necessary for a specific job.

The Safety Director, Safety Mentor and Project Superintendents have overall responsibility for the safety of employees and will verify compliance with OSHA 1926.503(a), training program, for each employee required to be trained.

The Safety Director, Safety Mentor, and Project Superintendents have the responsibility of determining when an employee who has already been trained, does not have the understanding and skill required by the training program (1926.503(a)).

Retraining is required when an employee cannot demonstrate the ability to recognize the hazards of falling and the procedures to be followed to minimize fall hazards.

Fall Arrest Rescue Plan

Project Site:	Date:
Competent Person(s):	Rescuer(s):
Job Description:	

Check for Yes	Comments
☐ Have alternatives to using fall arrest equipment been considered?	
☐ Has rescue equipment been inspected and in good condition?	
☐ Is equipment adequate for rescue plan? (Weight capacities, Length, etc.)	
☐ Have communication devices been identified, located and tested?	
☐ If working over water, is there a boat available?	
☐ Are rescuers familiar with equipment used for rescue?	

Rescue Contact	Rescue Equipment	
Emergency Services: _____	___ Ladder	Location of Equipment:
	___ Aerial Lift	
	___ Scaffold	___ Job Trailer
Emergency Contact: _____	___ Man Basket w/Crane	
	___ Rescue Pole	___ Tool Trailer
	___ Rescue Rope	
Method of Contact: _____	___ Retractable w/Retrieval Winch	___ Gang Box
	___ Relief Step Safety Device	
	___ Life Ring	___ Other: _____
Contact Number: _____	___ First Aid Kit	
	___ Other: _____	

Additional Preplanning:

_____

_____

_____

_____

_____

Competent Person Signature: _____ Date: _____ Time: _____

Personal Protective Equipment (PPE) Program

Penn Installations believes it is our obligation to provide a hazard free environment to our employees. Any employee encountering hazardous conditions must be protected against the potential hazards. The purpose of PPE is to shield or isolate individuals from chemical, physical, biological, or other hazards that may be present in the workplace.

If after reading this program, you find that improvements can be made, please contact the Safety Director. We encourage all suggestions because we are committed to the success of our Personal Protection Equipment Program. We strive for clear understanding, safe behavior, and involvement in the program from every level of the company.

Purpose of Program

The basic element of any PPE program is an in depth evaluation of the equipment needed to protect against the hazards in the workplace; this is the initial hazard assessment for which written documentation is required. Two basic objectives of any PPE program should be to protect the wearer from incorrect use and/or from the malfunction of PPE. The purpose of this Personal Protective Equipment (PPE) Program is to document the hazard assessment, protective measure in place, and PPE in use at this company. PPE devices are not to be relied on as the only means to provide protection against hazards, but are used in conjunction with guards, engineering controls, and sound construction practices. If possible, hazards will be abated through engineering controls, with PPE to provide protection against hazards which cannot reasonably be abated otherwise.

Hazard Assessment

In order to assess the need for PPE, the following steps are taken:

1. The Safety Director, where appropriate, identifies job classifications where exposures occur or could occur. The Safety Director or designee examines the following records to identify and rank jobs according to exposure hazards:
    - Injury/Illness Records
    - First Aid Logs
2. The Safety Director conducts a walkthrough survey of workplace areas where hazards exist or may exist to identify sources of hazards to employees.

During the walk through survey the Safety Director observes and records the following hazards along with the PPE currently in use.

- Sources of motion; i.e., machinery or processes where any movement of tools, machine elements or particles could exist, or movement of personnel that could result in collision with stationary objects.
- Sources of high temperatures that could result in burns, eye injury or ignition of protective equipment, etc.
- Sources of falling objects or potential for dropping objects.

- Sources of sharp objects which might pierce the feet or cut the hands.
- Sources of rolling or pinching objects which could crush the feet.
- Layout of workplace and location of co workers.
- Electrical Hazards.

Following the walk through survey, the Safety Director organizes the data and information for use in the assessment of hazards to analyze the hazards and enable proper selection of protective equipment.

An estimate of the potential for injuries is now made. Each of the basic hazards is reviewed and a determination is made as to the frequency, type, level of risk, and seriousness of potential injury from each of the hazards found. The existences of any situations where multiple exposures occur or could occur are considered.

Selection Guidelines

Once all hazards have been identified and evaluated through hazard assessment, the general procedure for selecting protective equipment is to:

1. Become familiar with the potential hazards and the type of PPE that are available, and what they can do.
2. Compare types of equipment to the hazards associated with the environment.
3. Select the PPE which ensures a level of protection greater than the minimum required to protect employees from the hazards.
4. Fit the user with proper, comfortable, well fitting protection and instruct employees on care and use of the PPE. It is very important that the users are aware of all warning labels for and limitations of their PPE.

It is the responsibility of the Safety Director to reassess the workplace hazard situation as necessary, to identify and evaluate new equipment and processes, to review accident records, and reevaluate the suitability of previously selected PPE. This reassessment will take place as needed.

Elements which should be considered in the reassessment include:

- Adequacy of PPE program
- Accidents and illness experience
- Levels of exposure (this implies appropriate exposure monitoring)
- Adequacy of equipment selection
- Number of person hours that workers wear various protective ensembles
- Adequacy of training/fitting of PPE
- Program costs
- The adequacy of program records
- Recommendation for program improvement and modification
- Coordination with overall safety and health program

Employee Training

The Safety Director or designee provides training for each employee who is required to use personal protective equipment. Training includes:

- When PPE is necessary
- What PPE is necessary
- How to wear assigned PPE
- Limitations of PPE
- The proper care, maintenance, useful life, and disposal of assigned PPE

Employees must demonstrate the ability to use the PPE properly before they are allowed to perform work requiring the use of the equipment.

If employee owned equipment is permitted, the Safety Director is responsible for the assurance of PPE adequacy, maintenance, and sanitation.

Employees are prohibited from performing work without donning appropriate PPE to protect them from the hazards they will encounter in the course of their work.

If the Safety Director or Superintendent has reason to believe an employee does not have the understanding or skill required to use PPE properly, the employer must retrain. Since an employee's supervisor is in the best position to observe any problems with PPE use by individual employees, the Safety Director will seek this person's input when making this determination. Circumstances where retraining may be required include changes in the workplace or changes in the types of PPE to be used which would render previous training obsolete. Also, inadequacies in an affected employee's knowledge or use of the assigned PPE which indicates that the employee has not retained the necessary understanding or skills will require the employee to be retrained.

The Safety Director certifies in writing that the employee has received and understands the PPE training.

Because failure to comply with company policy concerning PPE can result in OSHA citations and fines as well as employee injury, an employee who does not comply with this program will be disciplined for noncompliance.

Cleaning and Maintenance

It is important that all PPE be kept clean and properly maintained by the employee to whom it is assigned. Cleaning is particularly important for eye and face protection where dirty or fogged lenses could impair vision, PPE is to be inspected, cleaned, and maintained by employees at regular intervals as part of their normal job duties so that the PPE provides the requisite protection. Supervisors are responsible for ensuring compliance with cleaning responsibilities by employees. If a piece of PPE is in need of repair or replacement it is the responsibility of the employee to bring it to the immediate attention of his or her supervisor or the Safety Director. It is against work rules to use PPE that is in disrepair or not able to perform its intended function. Contaminated PPE which cannot be decontaminated is disposed of in a manner that protects employees from exposure to hazards.

Eye and face protection - - Safety Glasses, Goggles and Face Shields

- It is the policy of the company that as a condition of employment, all regular full time, part time, subcontractors, and temporary employees working at Penn Installations construction sites are required to wear ANSI approved Safety Glasses, goggles, or face shields to help prevent eye and face injuries, including those resulting from flying particles, molten metal, liquid chemicals, acids or caustic liquids, chemical gases or vapors, or light radiation.
- Contractors and subcontractors working on Penn Installations construction sites are required to wear safety glasses, goggles, and face shields.
- All supervisors and managers are responsible for ensuring employees under their charge are in compliance with this policy.
- Penn Installations will provide safety glasses, goggles, and/or face shields for its employees. Employees who work at construction sites are responsible for wearing PPE to comply with this policy. Failure to comply will result in disciplinary action up to and including discharge.
- All employees required to wear goggles/face shields must routinely inspect and properly care for their goggles/face shields.

Foot Protection-Safety-Toed Shoes

- It is the policy of the company that as a condition of employment, all regular full time, part time, subcontractors, and temporary employees working at Penn Installations construction sites are required to wear safety-toed shoes to help prevent foot injuries, ankle injuries, slips, and falls.
- Contractors and Subcontractors working on Penn Installations construction sites are required to wear safety shoes. It is the responsibility of the agency contractor to ensure the employee reports to the construction site wearing approved safety-toed shoes.
- All employees who work for Penn Installations are responsible for purchasing and wearing safety-toed shoes to comply with this policy. Failure to comply will result in disciplinary action up to and including discharge.
- Supervisors are responsible for informing new hires of the safety-toed shoe policy and the procedures for obtaining them. The new employee is responsible for reporting to his/her first day of work wearing approved safety-toed shoes. No employee will be able to work on a Penn Installations construction site until they have approved safety-toed shoes.

Hand Protection - - Gloves

- It is the policy of the company that as a condition of employment, all regular full time, part time, subcontractors, and temporary employees working at Penn Installations construction sites are required to wear gloves to help prevent hand injuries, including cuts, burns, chemical exposure, when required.
- All supervisors and managers are responsible for ensuring employees under their charge are in compliance with this policy.
- All employees who work for Penn Installations are responsible for wearing company provided gloves to comply with this policy. Failure to comply will result in disciplinary action up to and including discharge.
- All employees required to wear protective gloves must routinely inspect and properly care for their assigned gloves (if the gloves are not disposable).

Head Protection - - Hard Hats

- It is the policy of the company that as a condition for employment, all regular full time, part time, subcontractors, and temporary employees working at Penn Installations construction sites are required to wear ANSI approved hard hats to help prevent head injuries, including those resulting from falling objects, bumping the head against fixed object, or electrical shock.
- Contractors and subcontractors are required to wear hard hats while working at a Penn Installations constructions site.
- All supervisors and managers are responsible for ensuring employees under their charge are in compliance with this policy.
- All employees who work for Penn Installations are responsible for wearing company provided hard hats to comply with this policy. Failure to comply will result in disciplinary action up to and including discharge.
- All employees required to wear hard hats must routinely inspect and properly care for their hard hats.

Hazard Communication Program

Policy Statement

It is the policy of Penn Installations to provide all employees with a safe and healthful work environment free from recognized hazards. This will be achieved through implementation of the OSHA Hazard Communication Standard (29 CFR 1910.1200) and this written Hazard Communication Program.

Purpose

The purpose of this program is to:

- Establish guidelines to ensure the safety and health of all employees.
- Prevent chemical related illnesses and injuries.
- Ensure hazards with chemicals are clearly communicated.
- Effectively plan for non-routine use of hazardous chemicals.
- Provide model for adequate Hazard Communication Training.
- To inform employees of the contents of the OSHA Hazard Communication Program

General Requirements

Responsibilities

Management

- Ensure compliance with this written program.
- Ensure Hazard Communication Program is implemented at each work location.
- Providing Supervisor's with Safety Data Sheets (SDS's) for each hazardous chemical used at the work location.
- Provide Supervisor's and employees with the proper training and personal protective equipment to perform work with hazardous chemicals in a safe manner.
- Conduct a periodic review of this written program.

Supervisors

- Ensure compliance with this written program.
- Implementation of the Hazard Communication Program at work locations and safe use of hazardous chemicals.
- Identify hazardous substances present in work location.
- Ensure hazardous chemicals are properly labeled.
- Obtaining and maintaining SDS's for hazardous chemicals used at work location.
- Obtaining SDS's from subcontractors using hazardous chemicals at work locations.
- Ensure employees are trained on Hazard Communication.
- Maintaining an available written or electronic copy of this program for employees.

Employees

- Knowing the hazards and precautionary procedures for the hazardous chemicals used.
- Complete hazard communication training.
- Planning and conducting operations in accordance with established procedures and good safety practices.
- Using proper personal protective equipment and clothing in accordance with prescribed training.
- Notifying Supervisor of any discrepancies with chemical procedures or labeling.

Application:

- This written Hazard Communication Program applies to all employees involved in work operations with actual or potential exposure to hazardous chemicals and substances.
- Sub-contractors shall also comply with requirements of this written program OR have their own company written program that meets the minimum requirements of the OSHA Hazard Communication standard (29 CFR 1910.1200).

Hazard Identification:

- A chemical inventory is maintained. This chemical inventory is a list of the hazardous chemicals or products known to be present in the workplace.
- Penn Installations relies on the hazard evaluation information provided by the manufacturer(s) of the hazardous chemicals and products identified on the manufacturer's Safety Data Sheet (SDS).
- Non-routine tasks will be evaluated case-by-case:
    - All non-routine tasks will be evaluated before the task commences to determine all hazards present. An evaluation will be conducted by the Superintendent.
    - Once the hazard determination is made, the Superintendent and Safety Director will determine the necessary precautions needed to remove, eliminate or protect from the hazard (example: use of personal protective equipment) to safeguard the affected employees. In addition, the Safety Director will provide specific safety training for affected employees and will document the training.

Safety Data Sheets (SDS):

- The Company will maintain and have access to an SDS for every hazardous chemical or product know to be present in the workplace.
- Each SDS shall be in English (but may also be in other languages) and includes at least the following section numbers and headings, and associated information under each heading, in the order listed below:

    (i) Section 1, Identification;
    (ii) Section 2, Hazard(s) Identification;
    (iii) Section 3, Composition/information on Ingredients;
    (iv) Section 4, First-aid Measures;
    (v) Section 5, Fire-Fighting Measures;

(vi) Section 6, Accidental Release Measures;
(vii) Section 7, Handling and Storage;
(viii) Section 8, Exposure Controls/Personal Protection;
(ix) Section 9, Physical and Chemical Properties;
(x) Section 10, Stability and Reactivity;
(xi) Section 11, Toxicological Information;
(xii) Section 12, Ecological Information;
(xiii) Section 13, Disposal Considerations;
(xiv) Section 14, Transport Information;
(xv) Section 15, Regulatory Information;
(xvi) Section 16, Other Information, including date of preparation or last revision.

- The Safety Data Sheets shall be maintained at the office and job site locations and shall be readily accessible by employees.
    - Safety Data Sheets will be maintained in binders in the tool trailer or superintendents work vehicle. Safety Data Sheets can also be found on an USB device or computer provided to the superintendent.
- Replacement Safety Data Sheets can be obtained from the Safety Director or the manufacturer of the hazardous chemical.
- Safety Data Sheets will be obtained from the manufacturer or the product distributor.
- Safety Data Sheets will be periodically audited for most current information.
- As new chemicals are purchased and used, the inventory list shall be updated and the new Safety Data Sheet shall be added to the program. The inventory list will be reviewed annually to ensure it is current.
- If Safety Data Sheet is not received with hazardous chemical, the product distributor or manufacturer must be contacted to obtain most current Safety Data Sheet.

Labels and other Forms of Warning:

- The chemical manufacturer, importer or distributor shall ensure that each container is labeled, marked or tagged with the following information:
    - Product identifier;
    - Signal word;
    - Hazard statements;
    - Pictogram(s);
    - Precautionary statement(s) and;
    - Name, address, and telephone number of the chemical manufacture, importer or other responsible party.
- Chemical containers will be labeled by the manufacturer and will meet the above labeling requirements.
- Container labels shall not be removed or defaced. Containers shall be re-labeled if they become illegible.
- Labels must remain legible and must be in English.

- If a hazardous chemical is transferred from a large container (i.e. 55-gal drum) to a secondary container (i.e. spray bottle), the secondary container shall be labeled containing the above labeling requirements.
- Secondary containers do not need to be labeled when the hazardous chemicals are intended only for immediate use of the employee who performs the transfer.

GHS Pictograms and Hazard Classes

- New chemicals that are obtained from distributors and manufacturers shall bare the new Global Harmonized System (GHS) required labels.
- The Appropriate Hazard Classification should be identifiable.
- The following table (Table 1.1) represents the current accepted hazard pictograms as set forth by the GHS system for chemical labeling and their corresponding hazard classifications.

Table 1.1 GHS Pictograms and Hazard Classifications

GHS Pictograms & Hazard Classes		
		
• Explosives • Self-reactives • Organic peroxides	• Flammables • Self-reactives • Pyrophorics • Self-heating • Emits flammable gas	• Oxidizers • Organic peroxides
		
• Gases under pressure	• Acute toxicity	• Acute toxicity • Skin irritation • Eye irritation • Skin sensitizers
		
• Carcinogens • Respiratory sensitizers • Reproductive toxicity • Target organ toxicity • Germ cell mutagens	• Eye corrosion • Skin corrosion • Corrosive to metal	• Aquatic toxicity

Training and Employee Information

- All employees who work with or are potentially exposed to hazardous chemicals will receive initial training and any necessary retraining on the Hazard Communication Standard and the safe use of the hazardous chemicals found at their workplace. When a new hazard is introduced or a non-routine task identified, additional training will be provided.
- Employees shall be informed of the following:
    - All elements of this written program;
    - Any operations in their work area where hazardous chemicals are present and;
    - The location and availability of the written hazard communication program, including the required list(s) of hazardous chemicals, and safety data sheets.
- All training regarding Hazard Communication will be conducted by the Safety Director or an employee who is knowledgeable on the subject matter. Training shall include:
    - Method of detecting the presence or release of a hazardous chemical in the work area;
    - The physical, health, simple asphyxiation, combustible dust and pyrophoric gas hazards, as well as hazards not classified, of the chemicals in the work area;
    - Signs and symptoms of exposure; and,
    - Procedures to protect against the associated hazards including the use and limitations of any require personal protective equipment.
    - The labeling system for primary and secondary containers.
    - The Safety Data Sheets, including the order of information and how the SDS's can be obtained and used for hazard information.
- Training will be conducted annually and at initial hire.
- Training will also occur when a new chemical hazard is introduced to the workplace or when a process changes.
- When workers of other employers will be working at the workplace, the following shall occur:
    - Provide other employer(s) with SDS's of chemical(s) used at the jobsite to which their employees may be exposed; and
    - Provide labeling and/or emergency and precautionary information regarding the chemical(s).
    - The employer shall provide Penn Installations with their Hazard Communication Program and SDS's of chemicals being used in the workplace.

Hand and Power Tools

Purpose

The purpose of this procedure is to establish a minimum safety requirement for the safe use of hand and power tools.

General Requirements

Condition of tools:

- All hand and power tools and similar equipment, whether furnished by the employer or the employee, shall be maintained in a safe condition.

Guarding:

- When power operated tools are designed to accommodate guards, they shall be equipped with such guards when in use.
- Belts, gears, shafts, pulleys, sprockets, spindles, drums, fly wheels, chains, or other reciprocating, rotating or moving parts of equipment shall be guarded if such parts are exposed to contact by employees or otherwise create a hazard. Guarding shall meet the requirements as set forth in American National Standards Institute, B15.1-1953 (R1958), and Safety Code for Mechanical Power-Transmission Apparatus.
- "Types of guarding." One or more methods of machine guarding shall be provided to protect the operator and other employees in the machine area from hazards such as those created by point of operation, ingoing nip points, rotating parts, flying chips and sparks. Examples of guarding methods are - barrier guards, two-hand tripping devices, electronic safety devices, etc.

Point of Operation Guarding:

- Point of operation is the area on a machine where work is actually performed upon the material being processed.
- The point of operation of machine's whose operation exposes an employee to injury, shall be guarded. The guarding device shall be in conformity with any appropriate standards therefore, or, in the absence of applicable specific standards, shall be so designed and constructed as to prevent the operator from having any part of his body in the danger zone during the operating cycle.
- Special hand tools for placing and removing material shall be such as to permit easy handling of material without the operator placing a hand in the danger zone. Such tools shall not be in lieu of other guarding required by this section, but can only be used to supplement protection provided.
- The following are some of the machines which usually require point of operation guarding:
  - Shears
  - Grinders
  - Power saws
  - Jointers
  - Portable power tools
- "Anchoring fixed machinery" Machines designed for a fixed location shall be securely anchored to prevent walking or moving.

Personal protective equipment:

- Employees using hand and power tools and exposed to the hazard of falling, flying, abrasive, and splashing objects, or exposed to harmful dusts, fumes, mists, vapors, or gases shall be provided with the particular personal protective equipment necessary to protect them from the hazard.
- All personal protective equipment shall meet the requirements and be maintained according to relative standards.

Switches:

- All hand-held powered platen sanders, grinders with wheels 2-inch diameter or less, routers, planers, laminate trimmers, nibblers, shears, scrolls saws, and jigsaws with blade shanks one-fourth of an inch wide or less may be equipped with only a positive “on-off” control.
- All hand-held powered drills, tappers, fastener drivers, horizontal, vertical, and angle grinders with wheels greater than 2 inches in diameter, disc sanders, belt sanders, reciprocating saws, saber saws, and other similar operating powered tools shall be equipped with a momentary contact "on-off" control and may have a lock-on control provided that turnoff can be accomplished by a single motion of the same finger or fingers that turn it on.
- All other hand-held powered tools, such as circular saws, chain saws, and percussion tools without positive accessory holding means, shall be equipped with a constant pressure switch that will shut off the power when the pressure is released.
- Exception: This paragraph does not apply to concrete vibrators, concrete breakers, powered tampers, jack hammers, rock drills, and similar hand operated power tools. Relative standards and manufacturer requirements shall be followed for these tools.

Hand Tools:

General Requirements

- Tools will be used only for the purpose for which they are designed.
- When tools are designed to accommodate guards, they will be equipped with such guards when in use.
- All tools, regardless of ownership, will be of an approved type, maintained in first class condition, and be subject to inspection at any time.
- Tools with sharp edges will be so stored and handled that they may not be damaged or cause injury. They will not be carried in clothing pockets.
- Tools subject to impact, such as chisels, punches, drills, wedges, drift pins, and hammers, will be kept free from cracks and mushroom heads to eliminate the possibility of flying spalls. They will be dressed, repaired, or replaced before use.
- Tools, except those normally carried on belts, which must be raised or lowered from one elevation to another, will either be placed in an approved container or firmly attached to hand lines.
- Tools will not be thrown from place to place or from person to person under any circumstances.
- Tools will not be left lying around where they could cause tripping or stumbling.
- Tools will never be placed unsecured on elevated surfaces. When working on or above open gratings or boards, care must be taken not to place tools on the walkway, lest they be knocked off, causing injury to people below.
- Switches or valves on any type of power tools, especially air tools, will not be wired or tied in the open position and must be “Dead Man” type switches.
- Any tool which is damaged or defective will not be used. If a tool becomes defective in any way,

place an "Out of Service" tag on it and remove from service. This includes wrenches with sprung or damaged jaws, and chisels, drills, or punches with flared or damaged heads.
- Tools are not to be used beyond their capacity by either forcing them or using a "cheater" pipe (pipe used to extend the wrench handle for added leverage).
- When using tools, employees exposed to the hazard of falling, flying, abrasive, and splashing objects, or exposed to harmful dusts, fumes, mists, vapors, or gases will be provided with the particular personal protective equipment necessary to protect them from the hazard.
- Only non-sparking tools will be used in locations where sources of ignition may cause a fire or explosion.

Precautions

- Never remove or interfere with the operation of any tool guard or safety feature.
- Always use the right tool for the right job.
- Keep tools clean, and check their condition before using. If heads of striking tools become mushroomed or burred, have them dressed. If handles of tools are splintered, broken or loose, have them repaired or replaced.
- Tools must be always returned to their proper storage place and not left where they create a hazard.
- Carrying tools in pockets is dangerous, especially if tools are sharp or pointed. Never climb ladders with tools in pockets.
- Do not use excessive pressure or force on any hand tool.
- Metal measuring tapes, tapes having metal strands woven into fabric, brass bound rules, wire or metal bound hose or rope with wire core shall not be used when working on or near energized electrical circuits or equipment.
- Tethering of tools may be required when working at heights.

Specific Hand Tools

Screwdrivers

- Never attempt to use a screwdriver as a pry tool, drift or chisel.
- Use the right size and type screwdriver for the job.
- Do not hold screwdriver work in palm of hand. The screwdriver may slip causing injury.
- Screwdrivers should be filed properly to prevent slipping.

Hammers

- Hammers must have a clear path for back swing, and the target area must be free from obstructions.
- Hammers with "mushroomed" heads should never be used as they might glance off the target, or the damaged head may splinter and send metal fragments flying.

Pry Bars

- Be sure tip of bar is secure under load by first applying a slight pressure.
- Check your own balance before exerting full force.
- A cheater bar shall not be used on pry bars.

Wrenches

- Wrenches should be pushed away from the body, if possible to reduce the chance of the wrench slipping and striking the user in the face or body.

- Adjustable (crescent) and combination wrenches should be snug on bolts and nuts to avoid slipping.
- Never use a wrench as a hammer or a hammer on a wrench that is not designated to be used as such.
- Never use a cheater bar on a wrench or "double wrench" a nut. Use a hammer wrench or impact instead.

Chisels & Punches
- Unsafe defects: Mushroomed heads, chipped points and over tempered surfaces.
- Do not strike with hardened hammer or chip toward yourself or others.
- Do not use without proper eye protection.

Drill Bits
- Unsafe defects: Worn or battered heads, over tempered and dull cutting edges.
- Do not use a drill bit to ream holes (get a larger bit). Use a reamer bit or a rat tail file.
- Do not change bits without unplugging cord.

Knives
- Unsafe defects: Dull or nicked edges or point, loose or broken handle.
- Do not pull a knife towards body.
- Use a knife with a locking blade.
- The use of personal locking knives is prohibited.

Shovels, Pick Axes, and Axes
- Unsafe defects: Rough, loose, cracked, or split handles; dull or nicked edges, over-tempered surfaces.
- Do not use as a wedge, pry bar or hammer.
- Non conductive wood or fiberglass handles for shovels and posthole diggers should be used to protect from electrical shock.

Electrical Equipment and Tools

General
Electricity as low as 110 Volts has been known to cause fatal injuries. If you see someone who appears to be getting shocked do not touch them. Turn off the power at the power source or disconnect the cord if possible. Electrical shock can stop the heart and cause unstable heart rhythms. A physician must examine anyone receiving a significant electrical shock. Notify the emergency personnel and if qualified, provide first aid and or CPR once the scene is safe to do so.

Basic Protection
To prevent electrical shock:
- Never plug in a cord or tool with wet hands or feet or while standing in water.
- For work in wet or other conductive locations employees shall utilize a GFCI (ground fault circuit interrupter) plugged in at the electrical source.
- Do not use defective equipment and never attempt repairs unless you are a qualified technician.
- Be sure the cord or tool is properly grounded and has the current inspection tape on it if a program is in use.

- Never use an electric tool in the presence of flammable or combustible gases unless it is specifically designed for such use and states on the UL label.
- Store cords and tools properly out of the weather.
- Never use the cord of a tool for carrying or lowering - use a tag line.
- Do not use metal ladders or scaffolds in or around high voltage areas.
- Consider ALL exposed wires as "hot".
- Never work or operate equipment within ten feet of any outside power line.
- Treat all electrical tools with respect and use the proper personal protective equipment for the situation.

Temporary Lighting

- Temporary lights shall be equipped with guards to prevent accidental contact with the bulb.
- Working spaces, walkways and similar locations shall be kept clear of cords.
- Portable electric lighting used in moist or other hazardous locations (drums, tanks, vessels, pipes, etc.) shall be operated at a maximum of 12 volts. However, 120-volt lights may be used if protected by a Ground Fault Circuit Interrupter (GFCI).
- Some Confined Space atmospheres may require the use of explosive proof lighting systems.
- Whenever possible use a photo cell technology or timers to conserve electricity as an environmental initiative.

Cords and Portable Tools

- All extension cords, portable electric tools, and equipment shall be of three-wire type unless they are UL approved double insulated tools. This UL indication must be clearly marked on the tool.
- Portable tools will have any trigger lock devices removed.
- Flexible cords shall be used only in continuous lengths without splice unless the insulation is equal to the cable being spliced and wire connections soldered.
- Cables passing through work areas shall be protected or elevated a minimum of 7 feet.
- Worn or frayed electric cables shall not be used.
- Extension cords shall not be fastened with staples, hung from nails, or suspended by wire.

Disconnecting Means

- Disconnecting means shall be located or shielded so that employees will not be injured and still be readily accessible.
- Boxes for disconnecting means shall be securely fastened to the surface upon which they are mounted and fitted with covers.
- Boxes and disconnecting means installed in damp or wet locations shall be waterproof and be GFCI protected.

Electrical Tools

- Ground Fault Circuit Interrupters must be used for all non-permanent/temporary wiring cords and electrical tools.
- Do not use ungrounded electrical tools unless double insulated. Ground wires should be checked and ground fault interrupters should be tested regularly.
- Do not use electrical power tools with frayed cords.
- Do not operate a machine you are not familiar with.
- Examine extension cords carefully for worn insulation and exposed strands of wire before using.

Do not drag cords over sharp edges or run them across aisles where they can be damaged or cause someone to trip. Never hang extension cords across sharp objects.

- Extension cords should be elevated 7' above ground to avoid tripping hazards and damage to the cord. Use non-conductive material to secure cords. Never use nails, tie wire, or staples.
- Lock out and tag the power supply to machines while repairing or adjusting them. A qualified electrician should make electrical repairs to equipment, tools, cords, etc.
- Keep machine guards in position at all times.
- Do not wear loose or torn clothing, gloves, rings, neckties, wristwatches, etc., when working with electrical equipment.
- Ensure the electrical cords are clear of any moving parts.
- Unplug hand tools before changing parts or attempting to adjust them.
- Never leave an electrical tool energized unattended; unplug it.

Powder Actuated Tools

General Requirements

- Only employees who have been trained in the operation of the particular tool in use and wearing proper PPE (i.e., eye, face, hearing, hand and foot protection), shall be allowed to operate a powder-actuated tool.
- These tools should not be used in an explosive or flammable atmosphere.
- The tool shall never be pointed at anybody.
- The tool shall not be loaded unless it is to be used immediately. A loaded tool shall not be left unattended, especially where it would be available to unauthorized persons.
- If a powder-actuated tool misfires, the employee should wait at least 30 seconds, and then try firing it again. If it still will not fire, the user shall wait another 30 seconds so that the faulty cartridge is less likely to explode, and then carefully remove the load. The bad cartridge should be put in water.
- If the tool develops a defect during use it shall be tagged and taken out of service immediately until it is properly repaired.
- When using powder-actuated tools to apply fasteners, there are some precautions to consider. Fasteners must not be fired into material that would let them pass through to the other side.
- The fastener must not be driven into materials like brick or concrete any closer than 3 inches to an edge or corner.
- In steel, the fastener must not come any closer than one-half inch from a corner or edge. Fasteners must not be driven into very hard or brittle materials which might chip or splatter, or make the fastener ricochet.
- Fasteners used in tools shall be only those specifically manufactured for use in those tools.
- Firing of the tool shall be dependent upon at least two separate distinct actions, with the firing movement being separate from the operation of bringing the tool into the firing position.
- Fasteners shall not be driven into very hard or brittle materials including but not limited to, cast iron, glazed tile, surface mounted steel, glass block, live rock, face brick or hollow tile.
- Driving into materials easily penetrated shall be avoided.
- Fasteners shall not be driven into existing holes or spalled areas caused by a previously unsatisfactory fastening attempts.
- All tools shall be used with the correct shield, guard, or attachment recommended by the manufacturer.

- If areas are accessible on the other side of the work area, they must be barricaded to prevent any other employee from accessing the area where a fastener could pass through the wall or material.

Daily Inspections

- Before using the tool, the worker should inspect it to determine that it is clean, that all moving parts operate freely, and that the barrel is free from obstructions
- The tool shall be tested each day before loading to see that safety devices are in proper working condition. The method of testing shall be in accordance with the manufacturer's recommended procedure.
- Any tool found not in proper working order, or that develops a defect during use, shall be immediately removed from service and not used until properly repaired

Pneumatic Tools

General Requirements

- When gas or diesel compressors furnish the air source, keep them outside or vent them to the outside to prevent carbon monoxide poisoning.
- If you are using a permanent source of air, make sure it is not oxygen. Oxygen mixed with the oil in your air hose and tool will cause an instant explosion and fire.
- Air hoses and connections should be checked daily for defects.
- Air hoses should be protected from vehicle traffic, pedestrians and sharp objects.
- Air hose connections must be an approved coupling. Chicago Air couplings are acceptable provided the designed pins or No. 9 Wire is used to connect the fittings and whip checks are used. Dix-Lock Quick Acting Couplings and Cuyson couplings are acceptable as long as used according to the manufacturer's requirements. Utilize whip checks when applicable**.**
- It is not permissible to connect pneumatic couplings to air hoses using a hand crimping tool. This task must be performed utilizing a pneumatic tool.
- A shut-off valve is required within 10 feet *(3 m)* of a jack hammer, helldog, buster, or similar tool.
- Disconnect source and "bleed" hose before breaking connection on any air tool. Never crimp hoses to stop air.
- Do not let your hoses create tripping hazards.
- Never point a pneumatic hammer at anyone. There is always the chance the retainer might fail.
- The bit should be in contact with the work surface before pulling the trigger.
- Governors require strict maintenance to prevent dangerous over speeding of grinders, drills, wrenches, etc.
- Always wear proper eye and hearing protection when using air tools. Double hearing protection may be required.
- Air used for cleaning machines shall be regulated to 30 PSI or less.
- Air hoses and lines shall be depressurized before disconnect or disjointed, unless the joint being separated has an automatic quick close disconnect valve.
- Air hoses should have a minimum rated working pressure of 200 psi or 150 percent of the maximum pressure produced in the system, whichever is higher.
- Air hoses should have an oil-resistant inner surface and an abrasion-resistant exterior surface. When severe operating conditions make the possibility of cutting or damaging the hose likely, the hose shall be of extra-ply armored or other protective construction.
- Metatarsal guards must be worn for complete foot protection when using:

- Ground tampers that leave the ground such as "pogo sticks"
- Pavement breakers or jackhammers

- Extreme care shall be taken when working with compressed air. It should never be blown against clothing or any part of the body.
- Storage and cleaning are very important with any tool. Keep tools clean and stored properly where they belong.
- All hoses exceeding ½ inch inside diameter shall have a safety device at the source of supply or branch line to reduce pressure in case of hose failure.

Pedestal, Bench, and Portable Grinders

General

The following precautions and guidelines are provided for the set up, use and storage of abrasive equipment.

- Each employee is responsible for inspection of the grinder he/she is using.
- Wheel rating shall not exceed the maximum potential RPM of the grinder on which it is mounted.
- No special adapters, arbors or other improvising is permitted. No more than one wheel may be mounted between a single set of flanges.
- All abrasive wheels shall be mounted between flanges which are at least 1/3 the diameter of the wheel.
- On all portable tools, the control switch shall be instant-pressure controlled without a locking pin.
- Wheels should be stored in a dry place with constant temperature above freezing and protected from physical damage that could cause cracking.
- Guards must be installed and maintained.
- The proper respiratory protection shall be used in the event dust hazards exist.
- The proper eye/face and hand protection shall be used.
- Guards, work rests, eye shields and other permanent protection devices must not be removed from any grinding or buffing wheels.

Pedestal and Bench Grinders

An appointed competent person shall perform the initial inspection and subsequent maintenance of all grinders. Inspections will be made prior to operation. The using craft shall be responsible for installing all wheels and assuring that they are the properly designated wheels for the speed of the grinder. When installing the wheels they shall be responsible for maintaining the maximum distance between the work rest and the wheel (1/8") and tongue guard (1/4"). Too much clearance may cause the job to jam the wheel and break it.

The following precautions and guidelines should be observed when operating pedestal and bench grinders:

- Stand to one side out of line of wheel starting it up.
- The face of the wheel must be flat and free from grooves.
- Work should be fed slowly and gradually. Using too much pressure, or striking wheel suddenly, may cause it to break.
- Do not set tool rest while machine is in motion.
- Use face of wheel only, unless it is designed for grinding on the side; otherwise, side pressure

may break the wheel. Whenever possible, use entire face of wheel to avoid grooving.

- Never use a grinding wheel that is loose on the shaft or if its rate of speed is not safe for the number of RPM of the spindle.
- Stop wheel if it chatters or vibrates excessively. This may be a danger signal that the wheel is not properly balanced or not attached securely to the spindle.
- All wheels shall be tested for soundness by "ring" testing the wheel or by testing machine use prior to issuance from the storeroom or tool crib.
- When grinding short pieces use locking pliers that grip firmly so the material will not slip out and come in contact with the operator.
- Gloves may come in contact with the wheel and cause hands and fingers to be pulled into the abrasive wheel causing severe injury; “locking pliers for close work” must be used.
- *Always use face shield in addition to regular eye protection*, even if grinder is provided with protective glass shields.

When dressing the wheel of pedestal or bench grinders, the following precautions must be observed.

- Wear a face shield over your safety glasses for protection against heavy particles.
- Use a dressing tool approved for the job. Never use a lathe-cutting tool.
- Inspect star dressers for loose shaft and worn disks.
- Round off the wheel edges with a hand stone before and after dressing to prevent the edges from chipping.
- Use the work rest to support and guide the tool. Use a tool holder if one is available.
- Apply moderate pressure slowly and evenly.
- Always apply diamond dressers at the center or slightly below the center, never above.

Portable Grinders

- Grinders must be inspected prior to initial use and periodically thereafter (it is mandatory that each grinder has a good speed tag or the speed is embossed into the body of the grinder).
- Crafts using portable grinders will change wheels when necessary.
- Grinders shall not be operated at a speed exceeding its rated speed (RPM) and shall not use abrasive wheels, stone, discs or brushes with rated speeds (RPM) lower than that of the tool on which it is mounted. The wheel maximum speed (RPM) is printed on the blotter, throw away adapter or the wheel itself.
- The using craft shall assure that grinders are inspected as required.
- All shirts must be tucked into trousers when using grinders. No hooded sweatshirts with strings. *NO EXCEPTIONS*
- Handles must be in place when using grinders.
- Safety guards of a proper type shall be provided and used on all portable grinders.

Wheel Handling and Storage

- Grinding wheels shall be protected from moisture and temperature extremes.
- Grinding wheels shall not be dropped or bumped.
- Grinding wheels shall be stored in their original shipping containers on jobsites and in protective racks in shops.

Installation of Abrasive Wheels, Discs and Brushes

- It is important that grinder operators be properly instructed in the mounting of wheels on their tools. Operators shall be instructed to inspect wheel for cracks or other marks which may

indicate wheel damage.

- Defective wheels shall be tagged and marked "Danger - Defective Wheel - Do Not Use" and returned to the Warehouse or Tool Crib.
- A wheel that is damaged by accidental handling shall be destroyed immediately so that it will not be available for others to pick up and use at a later time.
- Operators shall be instructed how to properly mount a wheel using the correct driving and outer flanges, blotters and spaces if so required.
- Operator should not over tighten the spindle end nut that could cause wheel failure.

Grinding Wheel Testing

Before starting a grinder, the operator shall make sure that no one is in the unguarded plane of the wheel rotation. Upon mounting a new wheel, the tool shall be run at operating speed with the safety guard in place for at least one minute before applying the wheel to the work. No one shall stand in front of, or in line with the wheel. Another method for testing new wheels calls for the operator to run the tool up to speed in a protected enclosure such as a barrel for at least one minute.

Position of Operators - And Others

Operators and other personnel working around grinding, brushing or chipping operations shall be made aware of the possible danger from:

- Flying sparks and grit that can cause foreign bodies in eyes of possible clothing fire.
- The operator accidentally contacts the revolving wheel with part of his body or accidentally contacts another employee.
- The operator dropping the grinder causing the wheel to fall on a hard surface, breaking the wheel and scattering projectiles all around with tremendous force.
- The operator trying to work in tight quarters which can cause the grinder to jam and possibly break the wheel - or jump out of his hands.

Operating Procedure - Portable Grinders

The following procedures should be followed when operating portable grinders.

- Start grinder up close to work - the work piece then becomes part of the shield for the operator and others.
- Do not bounce or hit grinder wheel into the work surface - ease it in smoothly.
- Always grind with the grinding face of the wheel; do not grind on the side of Type 1 (straight wheels).
- Do not try to dress a chipped stone or make repairs on portable grinders.
- If the tool motor begins to vibrate or starts up over speed shut it off immediately and remove from service.
- New employees should be instructed as to the best method to hold a grinder for different types of work. Instruct the employee how to handle the grinder in all work positions so that he/she will not be "manhandled" by the grinder.

Personal Protective Equipment for Portable Grinders

- It is mandatory that operators doing this work use Double-Eye Protection (safety glasses and face shield), hearing protection and proper gloves.
- The operator should wear an approved dust mask when working in close quarters or where ventilation is poor, as required.
- Leather sleeves and aprons may be required in some operations where sparks and/or broken

wire brush projectiles are a problem.

- Sweatbands can be useful in preventing "dirty" perspiration dripping down into the eyes.
- Operator's clothing should include the following:
  - Long sleeves with shirttails tucked into pants. Employees should wear fire resistant clothing such as cotton for all outer garments. Never wear Polyester or Nylon material near any heat source.
  - *Pants* - cuffless and not tucked into boots.
  - *Shoes* – approved safety shoes.
  - *Gloves* - serviceable gloves as per PPE requirements, there is a “Glove for Every Task”.

Inspections

- Hand and power tools shall be inspected before each use.
- Any tool which is not in compliance with any applicable standard or requirement of this written program is prohibited from use and shall be identified as unsafe by tagging the tool out with a out of service tag. Such a tool shall be physically removed from its place in operation.

Training

Annual Training

- Employees required to use hand and power tools shall be trained on their proper use, care, maintenance and inspection, and the required use of PPE for that particular tool.

Refresher Training

- Any employee who is involved in an incident or near miss with a hand or power tool will undergo refresher training in that particular tools safe operation and use.

Ladder Safety Program

Purpose

The purpose of this procedure is to establish the minimum safety requirements for the inspection, care and use of portable ladders on the jobsite.

Responsibilities

Management Responsibilities

- The Project Manager/Superintendent is responsible for field implementation and enforcement of this program.
- The Safety Director is responsible for monitoring compliance with this program.

Employees Responsibilities

- Responsible for daily ladder inspections.
- Ensure every effort is made to not intentionally use a defective ladder for any purpose.
- Ensure defective ladders are tagged out after failing an inspection.

Inspection

All portable ladders shall be inspected monthly and prior to use. Monthly inspections will be documented. Inspections shall include the following items at a minimum:

- All parts shall be free from sharp edges, splinters, burrs, cracks, or visible defects.
- Steps and rungs are in place, intact, and free from grease or oil, have slip resistant surfaces and are firmly attached.
- Support braces, bolts and screws are in place and tight.
- Spreaders or other locking devices are in place and operable.
- Safety feet are in place and operable.
- Additional auxiliary equipment such as stand-off supports or leg leveling devices are properly attached and operable.
- Proper ladder rating labels are attached and in readable condition.
- Ladders having defects shall be properly marked and taken out of service
- If a ladder tips over or is struck, additional inspections shall be performed to include the following items:
  - Inspect for side rail cracks, chips, or splinters.
  - Inspect for step damage.
  - Inspect all rung-to-side rail connections.
  - Check rivets and other fastening devices for shear.

Care of Ladders

- Ladders shall be maintained in good useable condition at all times.
- Ladders shall be stored in a location where the ladder is protected from damage and does not create an additional hazard.

- Ladders shall be properly secured when in storage to prevent the ladder from becoming an additional hazard.

General Guidelines

- Wooden ladders shall not be painted so as to obscure a defect in the wood; only a clear, nonconductive finish shall be used.
- All ladders shall be inspected frequently and regularly. Ladders with weakened, broken, or missing steps; broken side rails; or other defects shall be tagged and removed from service.
- Ladders and scaffolds shall be sufficiently strong for their intended use (correct load capacity).
- Ladder rungs, cleats, and steps shall be parallel, level, and uniformly spaced, when the ladder is in position for use.
- Portable metal ladders shall not be used in the vicinity of energized electrical circuits.
- Ladders shall not be placed in front of a door that opens toward the ladder, unless the door is open, locked, or guarded and signage is used to alert others of the hazard.
- When ascending or descending ladders, employees shall have both hands free and shall face the ladder.
- Only one employee shall work from a ladder at one time (except for hook type ladders). If two employees are required, a second ladder shall be used.
- Ladders shall be used for their intended purpose; ladders shall not be used as scaffold platforms.
- Boxes, chairs, etc., shall not be used as ladders.
- Ladders shall not be placed on boxes, barrels, or other unstable bases to obtain additional height.
- Employees shall not use a ladder until they have been properly trained in its use.
- A ladder inspection must be performed by a designated competent person. If the ladder fails, it shall be tagged out until repairs are made or discarded.

Straight Ladders

- Portable straight ladders shall not be used without nonskid bases.
- The ladder shall be placed so that the distance between the bottom of the ladder and the supporting point is approximately one-fourth of the ladder length between supports (4:1 ratio).
- Straight ladders shall not be climbed beyond the third step from the top.
- When working from a portable ladder, the ladder must be securely placed, held, tied, or otherwise made secure to prevent slipping or falling.
- When dismounting from a ladder at an elevated position (as at a roof), the employee shall ensure that the ladder side rails extend at least 3 feet above the dismount position, or that grab bars are present.
- Employees shall wear a body harness and lanyard, and tie off to a secure anchor whenever both hands must be used for the job or are exposed to a fall in excess of 6 feet.

- Ladders shall not be spliced together to form a longer ladder.
- A ladder shall not be placed against an unsafe support.
- Employees climbing a ladder with a fall exposure greater than 24 feet shall be protected by an approved cage, ladder climbing device, or by the use of a body harness, lanyard, or life-line system.
- Never move, shift or extend a ladder while it is occupied.
- Maintain 3 points of contact while ascending, descending, or working from a ladder.
- On two section extension ladders, the minimum overlap for the two sections in use shall be as follows:

Ladder Overlap Table

Size of Ladder	Overlap (feet)
Up to and including 36’	3’
Over 36’ up to and including 48’	4’
Over 48’ up to and including 60’	5’

Step Ladders

- The top two steps shall not be used.
- Step ladder legs shall be fully spread and the spreading bars locked in place.
- Step ladders shall not be used as straight ladders unless designed to do so.
- Always face the ladder when ascending and descending.
- Maintain 3 points of contact while ascending, descending, or working from a ladder.
- Never move, shift or extend a ladder while it is occupied.

SCAFFOLDS

Purpose

The purpose of this procedure is to establish safety requirements to be followed by all employees when erecting/ dismantling/ use/ inspecting of scaffolding.

Responsibilities

Management

- Ensure necessary and adequate equipment is available.
- Ensure periodic review of this program.
- Ensure adequate level of training is provided to all employees.

Supervisors

- Ensure the requirements set forth in this written program are being followed.
- Ensure employees are provided with necessary equipment.
- Enforce this written program.

Competent Person/ Scaffold Inspector

- Responsible for the supervision and direction of erection, dismantling or alteration of scaffolds.
- Responsible for performing inspections prior to each shift and after each occurrence which could affect a scaffold's structural integrity

General Requirements

All scaffolding shall be assembled, used, maintained, and dismantled per applicable OSHA standards referenced in this procedure.

All scaffolding shall be assembled, used, maintained, and dismantled under the supervision of a Penn Installations designated Competent Person.

Capacity

- Scaffolds shall be designed by a qualified person and shall be constructed and loaded in accordance with that design.
- Each scaffold and scaffold component shall be capable of supporting, without failure, its own weight and at least 4 times the maximum intended load applied or transmitted to it.

Scaffold Platform Construction

- Each platform on all working levels of scaffolds shall be fully planked or decked between the front uprights and the guardrail supports.
- Each end of a platform unless cleated or otherwise restrained by hooks or equivalent means, shall extend over the centerline of its support at least 6 inches and not more than 12 inches.
- The front edge of all platforms shall not be more than 9 inches from the face of the work, unless guardrail systems are erected along the front edge and/or personal fall arrest systems are used to protect employees from falling.
- The space between platform components and scaffold uprights will not exceed one (1) inch.
- Wood platforms shall not be covered with opaque finishes, except that platform edges may be covered or marked for identification. Platforms may be coated periodically with wood

preservatives, fire-retardant finishes, and slip-resistant finishes; however, the coating may not obscure the top or bottom wood surfaces.
- Scaffold components manufactured by different manufacturers shall not be intermixed.
- Scaffold components made of dissimilar metals shall not be used together.
- Platforms shall not deflect more than 1/60 of the span when loaded.

Criteria for Supported Scaffolds

- Supported scaffolds with a height to base width ratio of more than four to one (4:1) shall be restrained from tipping by guying, tying, bracing, or equivalent means, as follows:
    - Guys, ties, and braces shall be installed according to the scaffold manufacturer's recommendations.
- All scaffolds must be placed on a firm and solid footing. Supported scaffold poles, legs, posts, frames, and uprights shall bear on base plates and mud sills or other adequate firm foundation.
- Caster stems and wheel stems shall be pinned or otherwise secured in scaffold legs or adjustment screws.
- Employees shall be prohibited from working on scaffolds covered with snow, ice, or other slippery material except as necessary for removal of such materials.

Mobile Scaffold

- Greater than one section high will be equipped with outriggers.
- Wheels on mobile scaffolding will be locked in place when workers are working from it (self-propelling is prohibited).

Access/ Egress from Scaffolds

- Ladders or stairs must be used to access and scaffold platform.
- Welded frame scaffolds frame is not designed for climbing, but structural support.
- Ladders shall not be used on scaffolds to increase the working level height of employees.

Fall Protection

- A competent person will determine the feasibility and safety of providing fall protection for employees erecting or dismantling supported scaffolds. Employees are required to wear fall protection during erecting or dismantling supported scaffolds where the installation and use of such protection is feasible and does not create a greater hazard.
- Each scaffold platform shall be erected with two guard rails around the entire parameter. The top rail shall be between 39 and 42 inches above the work platform and capable of withstanding 200 lbs. of lateral force. The mid-rail is to be centered between the top rail and platform.

Falling Object Protection

- All employees are required to wear hard hats during erection, dismantling, use and maintenance of scaffold.
- Where tools, materials, or equipment are piled to a height higher than the top edge of the toe board, paneling or screening extending from the toe board or platform to the top of the guardrail shall be erected for a distance sufficient to protect employees below.
- Toe boards, consisting of a minimum 1 inch x 4 inch board, shall be installed on all sides, and be capable of withstanding, without failure, a force of at least 50 pounds applied in any downward or horizontal direction at any point along the toe board.
- Debris shall not be allowed to accumulate on platforms.

Training Requirements

Employees working on scaffolding shall be trained in the following:

- The type of scaffold being used.
- The nature of any electrical hazards, fall hazards and falling object hazards in the work area.
- The correct procedures for dealing with electrical hazards and for erecting, maintaining, and disassembling the fall protection systems and falling object protection systems being used.
- The proper use of the scaffold, and the proper handling of materials on the scaffold.
- The maximum intended load and the load-carrying capacities of the scaffolds used.

Employees involved in the erection, dismantling, use and maintenance of scaffold shall be trained on the following:

- The information listing above.
- The nature of scaffold hazards.
- The correct procedures for erection, dismantling, use and maintenance of scaffold.
- The design criteria maximum intended load-carrying capacity and intended use of the scaffold.

Employees who are designated as a Competent Person/Scaffold Inspector shall be trained as one who is capable of identifying existing and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them. The training shall include the following:

- The type of scaffold being used.
- Identify and correct hazards encountered in scaffold work.
- Structural integrity of scaffolds and the procedures needed to maintain them.
- Evaluate the effects of such potential damage-causing occurrences.
- Scaffolding inspection requirements.
- Scaffold erection, moving, dismantling or alteration activities.
- Determine the feasibility of providing fall protection.
- To perform the required inspections (after assembly, routine, each shift and/or periodic)

Training and/or retraining shall be conducted for any of the following reasons:

- Initial training requirement
- Type of scaffold being used has changed.
- When the employer has reason to believe that an employee lacks the skill or understanding needed for safe work involving the erection, use or dismantling of scaffolds.
- Where changes at the worksite present a hazard about which an employee has not been previously trained.
- Where changes in the types of scaffolds, fall protection, falling object protection, or other equipment present a hazard about which an employee has not been previously trained.
- Where inadequacies in an affected employee's work involving scaffolds indicate that the employee has not retained the requisite proficiency.

Scaffold Inspection

The designated Competent Person/Scaffold Inspector shall inspect scaffold for completeness and condition, sign and date the appropriate tag insert, and hang the tag on the scaffold in a visible location, as close to the access point as possible, without interfering with access.

All “in use” scaffolds will be inspected daily or before each shift.

Scaffold Tagging System

All scaffolds will be tagged with the appropriate tag indicating what safety precautions are needed to work from that scaffold. The color tags mean the following items:

- GREEN INSERT – Scaffold is Complete and ready for use (after daily inspection)
- YELLOW INSERT – Scaffold is usable but other hazards are present per tag details
- RED INSERT – Scaffold is incomplete, Do Not Use

Electrical Safety

General Requirements

Penn Installations will use ground fault circuit interrupters (GFCI) to protect its employees on all construction sites.

Penn Installations employees do not perform electrical work activities. Penn Installations employees are considered unqualified to perform electrical work. All electrical work activities will be performed by an outside qualified electrician. Only qualified persons are permitted to work on energized electrical equipment, including but not limited to electrical panels, wiring, and switches.

When required to work near exposed or de-energized equipment, Penn Installations employees will follow the direction of the qualified electrician and apply the Lockout/Tagout procedures to provide protection to the employees that are exposed to the potential hazards.

If required to enter spaces containing exposed energized parts; employees are not permitted to enter that space until sufficient illumination is provided that enables the employee to work safely.

All electrical equipment should be considered energized, until proven otherwise by disconnecting means and testing.

All circuits must be de-energized, before work is performed. Use of the Lockout/Tagout (LOTO) Program procedures is required to be utilized to prevent electrical circuits from inadvertent energization.

When work is performed near energized power lines the following steps need to be implemented:

- All overhead power lines should be considered energized.
- Identification of all overhead power lines which present a hazard during working operations.
- After identification, one of the two steps must be implemented prior to work being performed:
    - De-energizing of the power lines from the utility provider. Work may be performed under de-energized overhead power lines which have been visibly grounded and locked/ tagged out procedures have been implemented. Any employee has the right to STOP work if concerns are not addressed by the utility provider.
    - When working around or under energized power lines were contact with energized lines by machinery exists, the height plus ten foot rule is in effect. 10 foot ruling is in effect for lines 50 kV or less, above 50 kV requires 10 feet plus 0.4 inches for each 1 kV over 50 kV.

Ground-fault circuit interrupters (GFCI)

- All 120-volt, single-phase 15- and 20-ampere receptacle outlets on construction sites, which are not a part of the permanent wiring of the building or structure and which are in use by Penn Installations employees, shall have approved ground-fault circuit interrupters for personnel protection.
- All portable and vehicle-mounted generators shall be equipped with ground-fault circuit interrupters.
- When using permanent wiring of a building or structure, Penn Installations employees shall use ground-fault circuit interrupters pigtails.

Extension Cords, and Cord/Plug Connected Tools

- Use GFCI on all extension cords, and cord/plug connected tools.
- Extension cords or power strips shall not be used in lieu of permanent wiring.
- Before using extension cords; inspect them for loose parts, damaged or deformed pins, and defective or damaged insulations. Replace or repair damaged cords.
- Do not fasten extension cords with staples or hang them in a fashion that could damage the outer jacket, insulation, or conductors.
- All cords shall be protected whenever run through doorway, windows, metal openings, or other similar passage ways. Cords may be protected by the use of firm or rigid tubing or a similar material.
- Elevate or protect cables and cords passing through work areas so as to protect them from damage and to eliminate tripping hazards.
- When working around water or other conductive liquids, metal walkways, metal scaffold planking or other conductive objects use the following:
    - Ground Fault Circuit Interrupter (GFCI)
    - Ensure hands are dry when plugging or unplugging energized extension cords.
    - Properly secure locking connectors after connection, when an extension cord is wet from immersion, handle it with protective equipment if it is still energized or if the state is unknown.

Training

Employees that are unqualified electricians will be provided training that will consist of the following:

- Penn Installations program requirements
- General knowledge of electricity
- Safe work practices
- Lockout/Tagout procedures
- Hazards associated with electrical work
- Personal protection equipment selection

Training will be conducted at initial hire and annually thereafter. All training will be documented and maintained in the employee's files.

Lead Awareness Program

Purpose

This procedure provides guidance for the protection of personnel engaged in operations where exposure to inorganic lead, lead compounds or organic lead soaps above the action level can reasonably be expected. Strict compliance with 29 CFR 1926.62 is required.

Definitions

Action Level - An airborne concentration of lead, without regard to the use of respirators, of 30 micrograms per cubic meter (μg/m³) calculated as an 8-hour time-weighted average (TWA).

Aerosols - Airborne dust, mists, fumes, or vapors.

Baseline - Baseline refers to the medical condition of an employee prior to being exposed to a contaminant.

Competent Person - One who is capable of identifying existing and predictable lead hazards in the surrounding or working conditions and who has authorization to take prompt corrective measures to eliminate them.

Exposure Assessment - Employer is required to determine if any employee is exposed to lead or above the action level.

Objective Data - Information demonstrating that a particular product or material containing lead or a specific process, operation or activity involving lead cannot release lead aerosols (dust, vapors or fumes) in concentrations at or above the action level under any expected conditions. Examples include industry-wide studies or laboratory product test results.

PAPR - Powered Air Purifying Respirator.

Personal Air Samples - Time weighted average samples collected for at least six (6) hours, within twelve inches (12") of the employee's nose. Samples must meet the quality information requirements.

Quality Information - Information gathered following prudent industrial hygiene protocol. Air, bulk and wipe sample results must be accurate to not less than plus or minus twenty-five percent (±25%) with a confidence level of ninety-five percent (95%).

Relevant Information - Information gathered from industry-wide sources representing workplace conditions closely resembling the processes, types of materials, control methods, work practices and environmental conditions in the operations.

Permissible Exposure Limits (PEL) - 50 micrograms per cubic meter (μg/m³) calculated as an 8-hour TWA.

Requirements

Initial Determination

Each project shall determine if any employee may reasonably be expected to be exposed to lead at or above the action level. The determination shall be conducted as if the employee(s) were not wearing a respirator. Methodologies used to make this determination shall be documented in writing and kept in the project files.

The determination shall address the following topics at a minimum:

- Written request to the client asking for information on the location of lead-based paints and coatings, elemental lead components and the use of lead or lead compounds in the client's operations(s);
- Test all painted or coated surfaces for the presence of lead where operations may create lead aerosols. Examples of such operations include, but not limited to, cutting, welding, abrasive blasting, sanding and heating.

Employee Exposure Assessment (EEA)

If the Initial Determination indicates the presence of lead in areas where operations are to be performed, an Employee Exposure Assessment (EEA) shall be conducted. The EEA shall consist of all of the following:

- Creating a written record of the following:
    - Each and every job classification of a project.
    - Date the initial determination was made for each job classification and a listing of the objective data, if any, used in making the determination.
    - Name and social security number of each employee in that job classification.
    - The date, sample number(s), and result(s) of personal air samples collected on that employee.
- Gathering objective data, observations, and other information or performing calculations which would indicate employee exposure.
- Obtaining copies of any previous measurements of airborne lead concentrations collected while performing similar operations under similar conditions.
- Reviewing employee complaints of symptoms that may be attributable to exposure.
- Reviewing available and feasible engineering and work practice controls that may reduce employee exposures.

The EEA shall be conducted for each job classification performing tasks or requiring proximity to operations, which may create lead aerosols.

The information gathered during the EEA can be positive, inconclusive, or negative for the likelihood that an employee will be exposed to lead aerosols above the action level.

Positive EEA Results

If the EEA results indicate that job classifications are likely to be exposed to lead aerosols above the action level, appropriate controls shall be used to reduce potential employee exposures.

Inconclusive EEA Results

Information gathered during the EEA can be inconclusive either due to insufficient relevancy or quality. If the EEA is inconclusive for job classifications performing any of the following tasks where lead is present:

- Manual demolition of structures,
- Manual scraping or sanding,
- Heat gun applications,
- Cleaning power tools equipped with dust collection systems, or
- Any other task that may generate aerosols.

The following shall be provided for affected employees:

- Half-face, air purifying, negative pressure respirators equipped with high efficiency particulate absolute (HEPA) filter cartridges. If the lead is causing eye or facial skin irritation, a full face-piece respirator shall be required. If additional contaminants are involved in the tasks, appropriate compound filter cartridges shall be used;

  NOTE: Full face-piece PAPR's shall be provided to employees, instead of half mask respirators, upon request.

- Training in accordance with the training potion of this standard.

If the EEA is inconclusive for the job classification performing any of the following tasks where lead is present:

- Abrasive blasting
- Welding
- Cutting or sawing
- Torch burning

All items previously described shall be provided for affected employees, except for:

- Minimum respiratory protection shall be either:
  - Full face-piece air purifying respirator with HEPA filter cartridges,
  - PAPR with HEPA filter cartridges,
  - Half mask or full face-piece supplied air respirator operated in a continuous-flow mode, or
  - Full face-piece self-contained breathing apparatus (SCBA) operated in demand mode.

Respiratory protection shall be used until at least two (2) consecutive personal air samples, collected at least seven (7) days apart by a competent person, are analyzed and found to be below the action level.

Collection of personal air samples shall be collected first on those employees reasonably believed to have the highest potential exposure. If these first air samples are found to be below the action level, further samples shall only be collected if there is no objective data to indicate that other tasks present lower exposure potential.

Negative EEA Results
Where objective data is available to indicate that a job classification cannot be exposed to airborne concentrations of lead at or above the action level, the data will be kept with the project files.

Employee Notification
The project shall notify each employee of the results of the EEA for that employee's job classification.

Whenever personal air samples are collected, the affected employee(s) shall be notified after receipt of the sample results.

Whenever area samples are collected, the results of the sample analysis shall be posted in a conspicuous area after receipt of the analysis results.

Observation of Monitoring
The project shall make available to employees, or their designated representative, the opportunity to:

- Observe air monitoring conducted to comply with this standard,
- Receive an explanation of the monitoring procedures being followed, and
- If requested in writing, provide a copy of the results obtained.

If such observations require the observer to enter an area where respirators or other PPE is required, the project shall provide that PPE if and only if, the observer is medically fit to wear the PPE and has complied with all other applicable safety and health procedures.

Management of Change
Methods used to reduce potential employee exposure to lead shall be implemented in the following order of priority:

1. Engineering controls, such as isolation, ventilation or abatement.
2. Work practice controls, such as employee rotation or specific procedures. If after all feasible engineering and work practices controls that have been instituted are not sufficient to reduce employee exposure.
3. Respiratory protection, as a supplement only, to the engineering and work practices controls. Respirator protection alone shall not be an optional method for reducing potential employee exposures. Engineering controls and/or work practice controls must be implemented first.

Written Compliance Program
Prior to the commencement of field activities, the project shall produce and implement a written compliance program. The written compliance program shall be updated annually and shall be made available to all affected employees or their designated representative(s).

The written program shall, as a minimum, include:

- Procedures to be followed to conduct the initial determination,
- Procedures to be followed to conduct the EEA,
- A description of each task which may produce lead aerosols including:
    - Equipment used,
    - Lead containing materials impacted,

    - Number of employees who may be exposed,
    - Work practices to be used, and
    - Employee responsibilities during task,
- Engineering controls to be used including objective data to justify their use,
- A report of the technologies considered and discounted,
- Available air monitoring data,
- Detailed schedule for implementation of the program including documentation such as purchase orders and contracts,
- Personal Protective Equipment usage, if necessary,
- Housekeeping procedures,
- Hygiene facilities and their usage,
- Relevant work practices
- Administrative controls schedule, if used to control employee exposure,
- Description of arrangements made to inform other contractors, if any, about potential lead exposure and contractor responsibilities.
- Projects, materials, and equipment inspection schedules, and
- The name of contractor's or projects competent person.

Safety Requirements

In instances where an area is known to potentially have **LEAD,** the following safety practices shall be followed prior to commencing with work.

- An inquiry should be made with the owner/constructor as to their knowledge of the presence of any Lead in the work area.
- An assessment is to be performed by a trained supervisor or competent person to determine if Lead may be present and/or accidentally disturbed during the work that is to be completed.
- The owner/constructor must assess the work site and eliminate or otherwise control the hazard, making the area safe from accidental exposure by any worker to lead. The owner/constructor may be required to perform an analysis to determine if the product is asbestos, the extent and/or concentration of Lead present and the type of removal/controls required.
- If the substance is confirmed to be Lead that may pose a potential serious health and safety hazard, then the owner/constructor must provide adequate protection through either the repair, removal, or other acceptable means of control. Unless otherwise identified in the contract, where it shall be the responsibility of Penn Installations to remove/control the Lead through the use of a qualified subcontractor.
- Once the Lead has been adequately removed or controlled and identified as 'safe' by the owner/constructor through appropriate monitoring and/or assessment to the satisfaction of Penn Installations, the work can resume.

Training

The project shall train each employee who may be exposed to lead in the following:

- The contents of the OSHA Regulations on Lead.
- The specific nature of the operations which could result in exposure to lead above the action level.
- The purpose, proper selection, fitting, use, limitations and health effects of respirators.
- The engineering and work practice controls associated with each employee's job classification.

- Relevant good work practices
- The contents of the written compliance program.
- Instructions that chelating agents should not be used at all except under the direct supervision of a licensed physician.

Signage

The project shall post signs, illuminated and cleaned as needed, stating the following in each work area where an employee exposure to lead aerosols may be above the PEL:

WARNING
LEAD WORK AREA
POISON
NO SMOKING OR EATING

Recordkeeping

The project shall establish and maintain accurate records. The project shall make all records kept in accordance with this standard available to employees, or their designated representative, upon written request. These records shall be kept with the permanent project files.

Asbestos Awareness

Purpose
This outlines the safety standards that will be adhered to by Penn Installations with any construction work including:

- Construction, alteration, repair, maintenance or renovation of structures, substrates or portions thereof that contain asbestos, and
- Asbestos spill or emergency cleanup.

Penn Installations and its employees are not permitted to perform any direct work with friable asbestos. It may be performed by an insured subcontractor. In conditions that may result in the accidental airborne release of asbestos, adequate controls must be established and in place to prevent any health hazards from being created.

Definitions
Permissible Exposure Limits (PEL) - An airborne concentration of asbestos or asbestos-containing material of 0.1 fibers per cubic centimeter (*f/cc*) of air calculated as an eight (8) hour time-weighted average.
Asbestos - A natural occurring mineral fiber with any of the following names:

- Chrysotile
- Amosite
- Crocidolite
- Fibrous Tremolite
- Fibrous Anthophyllite
- Fibrous Actinolite

Asbestos Containing Material (ACM) – Material that is suspected or known to contain asbestos fiber material.

Asbestos Fiber - Asbestos which is five (5) micrometers or longer with the length at least three (3) times the diameter.

Cemented Asbestos - Asbestos which is tightly bound with tar, portland cement or other material.

Demolition - means the wrecking or taking out of any load supporting structural member and any related razing, removing or stripping of asbestos.

Friable Asbestos - Asbestos which can be crushed, pulverized or reduced to dust with hand pressure.

Regulated Area - An area established by the employer to demarcate areas where airborne concentrations of asbestos or asbestos-containing materials exceed or can reasonably be expected to exceed the permissible exposure limit.

Removal - means the taking out or stripping of asbestos or materials containing asbestos.

Renovation - means the modifying of any existing structure or portion thereof where exposure to airborne asbestos may result.

Repair - means overhauling, rebuilding, reconstruction or reconditioning of structures where asbestos is present.

Time-weighted Average (TWA) - Concentration for a normal 8-hour workday and a 40-hour workweek, to which nearly all workers may be repeatedly exposed, day after day, without adverse effect.

Hazards
The hazards associated with asbestos exposure include mesothelioma, lung cancer, respiratory tract irritation, and among others. These conditions and afflictions are generally chronic in nature (long-term) and often symptoms do not appear for many years.

Training
Asbestos awareness training is required for all workers that:

- May work in close proximity to asbestos products that pose a hazard,
- Perform work that may disturb ACM by causing it to become airborne (friable), and/or
- Supervise workers involved in any of the above.

The training must be performed by a competent person and shall include, at a minimum:

- Review of asbestos hazards,
- How to identify asbestos, and
- Basic precautionary measures.

All training must be documented and records shall be maintained by Safety Director.

Identification and Notification
Under OSHA, it is the responsibility of the owner to notify the constructor if asbestos is known to be present on the jobsite. The owner must identify the location(s) to the contractors. Contractors must ensure their subcontractors are made aware of the location of any asbestos on site.

The control, repair, and/or removal of the asbestos must be established by the owner or the constructor, unless otherwise stated in the contracts.

Contractors should be made aware of any work activities that may involve asbestos, as well as the control measures and reporting requirements for that work site.

Safety Requirements
In instances where an area is known to potentially have ACM, the following safety practices shall be followed prior to commencing with work.

- An inquiry should be made with the owner/constructor as to their knowledge of the presence of any ACM in the work area.
- An assessment is to be performed by a trained supervisor or competent person to determine if ACM may be present and/or accidentally disturbed during the work that is to be completed.
- The owner/constructor must assess the work site and eliminate or otherwise control the hazard, making the area safe from accidental exposure by any worker to airborne asbestos. The owner/constructor may be required to perform an analysis to determine if the product is asbestos, the extent and/or concentration of asbestos present and the type of removal/controls

required.

- If the substance is confirmed to be ACM that may pose a potential serious health and safety hazard, then the owner/constructor must provide adequate protection through either the repair, removal, or other acceptable means of control. Unless otherwise identified in the contract, where it shall be the responsibility of Penn Installations to remove/control the ACM through the use of a qualified subcontractor.

  Note: Where Penn Installations may be required to use a subcontractor, the company shall provide proof of asbestos insurance and safe work procedures.
- Once the asbestos has been adequately removed or controlled and identified as 'safe' by the owner/constructor through appropriate monitoring and/or assessment to the satisfaction of Penn Installations, the work can resume.

Accidental Exposure and Decontamination

Any inadvertent contact or release of possible ACM in areas identified as containing ACM will be treated as an asbestos exposure incident and will be responded to in the following manner.

- Stop work immediately and inform another unexposed co-worker, supervisor or other personnel of the incident and direct them to inform the owner/constructor and/or project management to initiate containment and decontamination efforts.
- A perimeter to the exclusion zone of 25' from any visible particulate shall be established and shall have appropriate signage indicating the hazard including contact information. This will be erected by unexposed workers/ supervisors who shall wear appropriate PPE to protect them from exposure. Appropriate PPE will include a half-mask respirator with organic particulate filters and disposable coveralls.
- Exposed workers shall remain within the perimeter, limiting movement to prevent more fibers from becoming airborne. They will remain in the area until a determination is made as to the status of the material or an appropriate decontamination of the worker(s) is completed.
- The outer layer of clothing shall be carefully removed and placed in sealed garbage bags. The hard hat, safety glasses and work boots should be damp wiped with disposable towels to remove any visible particulates. Hands and facial area should also be wiped to remove any possible material. The disposable towels used for damp wiping will also be deposited into the garbage bag. This bag will also remain in the exclusion zone until the area has been cleared. It will be treated as hazardous waste in accordance with local regulations and disposed of by the abatement subcontractor.
- Arrangements for additional clothing and a temporary barrier for privacy during changing will be established.

Silica Dust Exposure Control Plan

Purpose

The purpose of this program is to provide guidance for the protection of employees from exposure to crystalline silica in the workplace. Penn Installations has the duty to protect workers from respirable crystalline silica by using engineering and administrative controls as well as personal protective equipment to protect workers from harmful exposure.

Penn Installations is committed to being diligent in the efforts to select the most effective control methods available, and to ensure that the best practices, as described in this Exposure Control Plan (ECP).

Responsibilities

Management

- Ensure compliance with this written program.
- Substitution of less hazardous products for those that contain crystalline silica when feasible.
- Provide employees with necessary engineering controls and personal protection equipment (PPE) to safely perform tasks.
- Provide a copy of this ECP at each project location.
- Conducting a periodic review of the written program and the effectiveness of this ECP annually.
- Initiating air sampling for worker exposure when there are non-standard work practices for which the control methods to be used have not been proven to be adequate.
- Ensuring employees are educated and trained to an acceptable level of competency.
- Maintaining records of training, medical and fit-test results, toolbox talks, job safety analysis and inspections.
- Coordinating work with all effected personnel to ensure a safe work environment.

Supervisors (Competent Person)

- Ensure a copy of this ECP is available on site.
- Selecting, implementing and documenting the appropriate site-specific control measures.
- Ensuring adequate engineering controls and PPE are available on site.
- Ensure engineering controls are function correctly, repaired or replaced when controls malfunction or inadequate.
- Provide instruction to employees on the hazards of working with silica-containing materials and precautions specified in this plan.
- Ensure employees wearing respiratory protection are abiding by Penn Installations Respiratory Protection Program.
- Directing the work in a manner that ensures the risk to workers is minimized and adequately controlled.

Employees

- Know the health hazards associated with silica dust exposure.
- Use recommended personal protective equipment in an effective and safe manner.
- Setting up the operation in accordance with the ECP.
- Following established work procedures as directed by the supervisor.
- Report any unsafe acts or conditions to the supervisor.
- Know how and when to report exposure incidents.

Silica Properties

Crystalline silica is a naturally occurring material found in the earth's crust and poses a health risk. Silica dust is hazardous when very small (respirable) particles are inhaled. Quartz is the most common form of silica and is a component of sand, stone, rock, concrete, mortar, brick and block.

Health Hazards

Crystalline silica dust can cause a disabling, sometimes fatal disease called silicosis. The fine particles are deposited in the lungs, causing thickening and scarring of the lung tissue. This damage is permanent, but symptoms of the disease may not appear for many years.

Silicosis is classified into three different types:

- Chronic → develops after 10 or more years of exposure to crystalline silica at relatively low concentrations.
- Accelerated → develops 5 to 10 years after initial exposure to crystalline silica at high concentrations.
- Acute → develops within a few weeks, or as long as 2 years, after exposure to very high concentrations of crystalline silica.

Initially, workers may show no symptoms of silicosis. However, as the disease progresses, the worker may experience shortness of breath, severe coughing, weakness, fatigue, chest pain and weight loss.

Risk Assessment & Control

The potential for employee exposure to respirable silica dust should be determined during the pre-operation hazard assessment to ensure the employee's exposure to silica is reduced or eliminated. Penn Installations shall ensure that no employee is exposed to airborne concentrations above the Occupational Safety and Health Administration's (OSHA) Permissible Exposure Limit (PEL) 50 $\mu g/m^3$, calculated as an 8-hour time weighted average (TWA).

Penn Installations will consider several key factors when determining an employee's exposure to silica. The following factors include work activities, amount of exposure and duration of exposure.

Penn Installations will reduce or eliminate employee exposure by using engineering controls and safe work practices as prescribed in OSHA's Table 1(Specified Exposure Control Methods

When Working with Materials Containing Crystalline Silica). Additional controls such as elimination or substitution, administrative, and personal protective equipment will also be used where necessary.

Tasks Involving Potential Respirable Crystalline Silica Exposure

Penn Installations conducts work tasks that generate potential respirable silica exposure. Engineering, administrative, and safe work practices will be in place for the following tasks:

- Drywall Finishing
- Handheld Power Saw for Cutting Fiber-Cement Board,
- Handheld Saw Cutting,
- Grinding, Chipping, Jack Hammering and Drilling,
- Housekeeping (sweeping)

Engineering Control Methods

Engineering controls have been established by OSHA. Penn Installations will abide by the control methods established in Table 1. Table 1 prescribes methods of compliance for each work task. Methods of compliance include, but not limited to, integrated water delivery systems, commercial dust collect systems, and equipment enclosures.

Based on duration of work task, additional protection may be required such respiratory protection. In the event respiratory protection is required, employee will abide by Penn Installations Respiratory Protection Program.

Isolating the work activity with barriers or enclosures is another type of engineering control that may be utilized when necessary. When physical barriers or enclosures are necessary, the Superintendent will determine the type and design of barrier or enclosure and ensure it is constructed in accordance with the work plan. Barriers may be simple hazard-flagging ribbon or more restrictive based on site circumstances.

When using integrated water delivery systems, ensure the following:

- Pressure and flow rate of water will be controlled in accordance with the tools manufacturers' specifications.
- Tools and equipment shall have water delivery systems installed per manufacturer's recommendations and specifications.
- Wet slurry will be cleaned from work surfaces when the work is completed via the wet sweeping method.

When using a dust collection system, ensure the following:

- Flow rate of air will be controlled in accordance with the tools manufacturer's specifications.
- Tools and equipment shall have dust collection systems installed per manufacturer's recommendations and specifications.
- Removal of dust containment bags shall be completed in accordance with the manufacturer's recommendations.

Administrative Control Methods

Administrative controls will be used in conjunction with the engineering controls. Administrative controls such as limiting the duration of exposure, training and warning signs will be used to reduce the potential for silica exposure.

Penn Installations will establish procedures for housekeeping, restricting work areas, personal hygiene, worker training, and supervision.

Safe Work Practices

The following safe work practices shall be followed to ensure airborne respirable silica dust is eliminated or reduced to allowable levels. Penn Installations equipment will be equipped with integrated water delivery systems or dust collection systems to reduce silica dust exposure.

Drywall Finishing

In order to reduce the production of airborne respirable silica dust, drywall finishing plaster will be substituted with silica free plaster or equipped with shroud with a commercially available dust collection system.

The equipment shall be installed, operated, and maintained in accordance with manufacturer's recommendations.

Respiratory protection is required when no using approved methods. Respiratory protection is required to meet Penn Installations Respiratory Protection Program.

Handheld Power Saw for Cutting Fiber-Cement Board

In order to reduce the production of airborne respirable silica dust, all operations must be conducted outdoors only. Power saws will be equipped with a commercially available dust collection system.

The equipment shall be installed, operated, and maintained in accordance with manufacturer's recommendations.

Respiratory protection is not required when equipment operation is within manufacturer's recommendations when used outdoors only.

Handheld Cut-Off Saw

In order to reduce the production of airborne respirable silica dust, all handheld cut-off saws will be equipped with an integrated water delivery system that continuously feeds water to the blade.

The equipment shall be installed, operated, and maintained in accordance with manufacturer's recommendations.

Respiratory protection is required when operating the saw greater than four (4) hours per shift. Respiratory protection is required to meet Penn Installations Respiratory Protection Program and has a minimum assigned protection factor of 10 when used outdoors only.

Handheld Grinder (other than mortar removal)
In order to reduce the production of airborne respirable silica dust, all handheld grinders will be equipped with an integrated water delivery system that continuously feeds water to the blade or a shroud/cowling with a commercially available dust collection system.

The equipment shall be installed, operated, and maintained in accordance with manufacturer's recommendations.

Respiratory protection is not required when equipment operation is within manufacturer's recommendations when used outdoors only.

Handheld Grinder (for mortar removal, tuckpointing)
In order to reduce the production of airborne silica dust, all handheld grinders will be equipped with a commercially available shroud and dust collection system.

The equipment shall be installed, operated, and maintained in accordance with manufacturer's recommendations.

Respiratory protection is required when performing this operation at all times. Respiratory protection with a protection factor of 10 must be worn when operating grinder for four (4) hours per shift. When operation is greater than four (4) hours per shift, respiratory protection with a protection factor of 25 must be worn. Respiratory protection is required to meet Penn Installations Respiratory Protection Program.

Handheld Drill
In order to reduce the production of airborne respirable silica dust, all handheld drills will be equipped with a shroud or cowling with a commercially available dust collection system.

The equipment shall be installed, operated, and maintained in accordance with manufacturer's recommendations.

Respiratory protection is not required when equipment operation is within manufacturer's recommendations when used outdoors only.

Jackhammers and Chipping Tools
In order to reduce the production of airborne respirable silica dust, all jackhammers and chipping tools will be equipped with an integrated water delivery system that continuously supplies a stream or spray of water at point of impact or a shroud/cowling with a commercially available dust collection system.

The equipment shall be installed, operated, and maintained in accordance with manufacturer's recommendations.

Respiratory protection is required when using equipment with an integrated water delivery system when operating greater than four (4) hours per shift. Respiratory protection is required to meet Penn Installations Respiratory Protection Program and has a minimum assigned protection factor of 10 when used outdoors only.

Respiratory protection is not required when equipment is equipped with a shroud/cowling with a commercially available dust collection system when used outdoors only.

Housekeeping
In order to reduce the production of airborne respirable silica dust, wet sweeping or HEPA-filtered vacuuming will be used to clean-up potential silica containing material.

Dry sweeping or the use of compressed air is not a permitted method for clean-up.

Respiratory Protection
All employees engaged in tasks that require the use of a respirator, will follow Penn Installations Respiratory Protection Program.

Respirators must be selected based on expected exposure level and the assigned protection factor of respirators.

All employees will be trained on the requirements set forth in the Respiratory Protection Program.

Health Monitoring
In the event, where an employee is required to wear a respirator for thirty (30) or more days, medical surveillance will be provided at no cost to the employee.

Initial and periodic examinations will be completed by a Physician or other Licensed Health Care Professional (PLHCP). Penn Installations shall provide the PLHCP with required documentation to ensure examination meets requirements. The employee will be notified by the PLHCP and Penn Installations within thirty (30) days.

Training
Penn Installations shall provide training to all employees involved in work operations that expose or have the potential to expose those employees to respirable silica dust. The training shall be completed prior to using or working with materials that contain crystalline silica. The employee must have the knowledge and understanding of the following:

- Health hazards associated with exposure to respirable crystalline silica;
- Tasks that could result in exposure to crystalline silica;
- Control measures Penn Installations has implemented to protect employees;

- The contents of this written program and CFR 1926.1153;
- The designated competent person;
- The purpose and a description of the medical surveillance requirements; and
- Shall make this written program and CFR 1926.1153 available to each employee.

The training shall be conducted by Penn Installations Safety Director or an employee who is knowledgeable on the subject matter.

Refresher training shall be provided when work conditions change or when there is reason to believe that an employee has deviated from procedure or their knowledge seems inadequate. Training will be conducted annually.

Table 1 Exposure Control Methods

Equipment/task	Engineering and work practice control methods	Required respiratory protection and minimum assigned protection factor (APF)	
		≤ 4 hours/shift	>4 hours/shift
Stationary masonry saws	Use saw equipped with integrated water delivery system that continuously feeds water to the blade. Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions.	None	None
Handheld power saws (any blade diameter)	Use saw equipped with integrated water delivery system that continuously feeds water to the blade. Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions:		
	-When used outdoors	None	APF 10
	-When used indoors or in an enclosed area	APF 10	APF 10
Handheld power saws for cutting fiber-cement board (with blade diameter of 8 inches or less)	For tasks performed outdoors only: Use saw equipped with commercially available dust collection system. Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions. Dust collector must provide the air flow recommended by the tool manufacturer, or greater, and have a filter with 99% or greater efficiency.	None	None
Walk-behind saws	Use saw equipped with integrated water delivery system that continuously feeds water to the blade. Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions:		
	-When used outdoors	None	None
	-When used indoors or in an enclosed area	APF 10	APF 10
Drivable saws	For tasks performed outdoors only: Use saw equipped with integrated water delivery system that continuously feeds water to the blade. Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions.	None	None

Equipment/task	Engineering and work practice control methods	Required respiratory protection and minimum assigned protection factor (APF)	
		≤ 4 hours/shift	>4 hours/shift
Rig-mounted core saws or drills	Use tool equipped with integrated water delivery system that supplies water to cutting surface. Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions.	None	None
Handheld and stand-mounted drills (including impact and rotary hammer drills)	Use drill equipped with commercially available shroud or cowling with dust collection system. Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions. Dust collector must provide the air flow recommended by the tool manufacturer, or greater, and have a filter with 99% or greater efficiency and a filter-cleaning mechanism. Use a HEPA-filtered vacuum when cleaning holes.	None	None
Dowel drilling rigs for concrete	For tasks performed outdoors only: Use shroud around drill bit with a dust collection system. Dust collector must have a filter with 99% or greater efficiency and a filter cleaning mechanism. Use a HEPA-filtered vacuum when cleaning holes.	APF 10	APF 10
Vehicle-mounted drilling rigs for rock and concrete	Use dust collection system with close capture hood or shroud around drill bit with a low-flow water spray to wet the dust at the discharge point from the dust collector	None	None
	OR		
	Operate from within an enclosed cab and use water for dust suppression on drill bit	None	None

Equipment/task	Engineering and work practice control methods	Required respiratory protection and minimum assigned protection factor (APF)	
		≤ 4 hours/shift	>4 hours/shift
Jackhammers and handheld powered chipping tools	Use tool with water delivery system that supplies a continuous stream or spray of water at the point of impact:		
	-When used outdoors	None	APF 10
	-When used indoors or in an enclosed area	APF 10	APF 10
	OR Use tool equipped with commercially available shroud and dust collection system. Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions. Dust collector must provide the air flow recommended by the tool manufacturer, or greater, and have a filter with 99% or greater efficiency and a filter-cleaning mechanism:		
	-When used outdoors	None	None
	-When used indoors or in an enclosed area	APF 10	APF 10
Handheld grinders for mortar removal (*i.e.*, tuckpointing)	Use grinder equipped with commercially available shroud and dust collection system. Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions. Dust collector must provide 25 cubic feet per minute (cfm) or greater of airflow per inch of wheel diameter and have a filter with 99% or greater efficiency and a cyclonic pre-separator or filter-cleaning mechanism.	APF 10	APF 25

Equipment/task	Engineering and work practice control methods	Required respiratory protection and minimum assigned protection factor (APF)	
		≤ 4 hours/shift	>4 hours/shift
Handheld grinders for uses other than mortar removal	For tasks performed outdoors only: Use grinder equipped with integrated water delivery system that continuously feeds water to the grinding surface. Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions.	None	None
	OR		
	Use grinder equipped with commercially available shroud and dust collection system. Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions. Dust collector must provide 25 cubic feet per minute (cfm) or greater of airflow per inch of wheel diameter and have a filter with 99% or greater efficiency and a cyclonic pre-separator or filter-cleaning mechanism:		
	When used outdoors	None	None
	When used indoors or in an enclosed area	None	APF 10
Walk-behind milling machines and floor grinders	Use machine equipped with integrated water delivery system that continuously feeds water to the cutting surface Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions	None	None
	OR		
	Use machine equipped with dust collection system recommended by the manufacturer. Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions. Dust collector must provide the air flow recommended by the manufacturer, or greater, and have a filter with 99% or greater efficiency and a filter-cleaning mechanism. When used indoors or in an enclosed area, use a HEPA-filtered vacuum to remove loose dust in between passes.	None	None

Equipment/task	Engineering and work practice control methods	Required respiratory protection and minimum assigned protection factor (APF)	
		≤ 4 hours/shift	>4 hours/shift
Small drivable milling machines (less than half-lane)	Use a machine equipped with supplemental water sprays designed to suppress dust. Water must be combined with a surfactant. Operate and maintain machine to minimize dust emissions.	None	None
Large drivable milling machines (half-lane and larger)	For cuts of any depth on asphalt only: Use machine equipped with exhaust ventilation on drum enclosure and supplemental water sprays designed to suppress dust. Operate and maintain machine to minimize dust emissions.	None	None
	For cuts of four inches in depth or less on any substrate: Use machine equipped with exhaust ventilation on drum enclosure and supplemental water sprays designed to suppress dust. Operate and maintain machine to minimize dust emissions.	None	None
	OR		
	Use a machine equipped with supplemental water spray designed to suppress dust. Water must be combined with a surfactant. Operate and maintain machine to minimize dust emissions.	None	None
Crushing machines	Use equipment designed to deliver water spray or mist for dust suppression at crusher and other points where dust is generated (e.g., hoppers, conveyers, sieves/sizing or vibrating components, and discharge points). Operate and maintain machine in accordance with manufacturer's instructions to minimize dust emissions. Use a ventilated booth that provides fresh, climate-controlled air to the operator, or a remote control station.	None	None

Equipment/task	Engineering and work practice control methods	Required respiratory protection and minimum assigned protection factor (APF)	
		≤ 4 hours/shift	>4 hours/shift
Heavy equipment and utility vehicles used to abrade or fracture silica-containing materials (*e.g.*, hoe-ramming, rock ripping) or used during demolition activities involving silica-containing materials	Operate equipment from within an enclosed cab	None	None
	When employees outside of the cab are engaged in the task, apply water and/or dust suppressants as necessary to minimize dust emissions	None	None
Heavy equipment and utility vehicles for tasks such as grading and excavating but not including: Demolishing, abrading, or fracturing silica-containing materials	Apply water and/or dust suppressants as necessary to minimize dust emissions	None	None
	OR		
	When the equipment operator is the only employee engaged in the task, operate equipment from within an enclosed cab	None	None

Respiratory Protection Program

This Respiratory Protection Program is to ensure compliance with all aspects of the OSHA requirements for Respiratory Protection and to provide technical information to Penn Installations supervisory personnel. A respirator shall be provided to each employee when necessary to protect the health of such employee. Penn Installations shall provide respirators which are applicable and suitable for the purpose intended. Respirators shall only be used when engineering controls are not possible and emergency applications.

Administrative Duties

The Respiratory Protection Program is administered and evaluated by Penn Installations Safety Director. The Safety Director is responsible for all facets of the program and has full authority to make necessary decisions to ensure success of this program.

The Safety Director shall be qualified, by appropriate training and experience that is appropriate with the complexity of the program, to administer and conduct the required evaluations of program effectiveness.

Respirator Selection

Respirators are selected based on the type of work performed, respiratory hazards to which the worker is exposed and factors that affect respirator performance and reliability. The program administrator will make all respirator selections and ensure compliance with the program.

Respirator Selection:

- Identify and evaluate the respiratory hazards in the workplace.
- The atmosphere will be considered immediately dangerous to life or health (IDLH) when exposure cannot be determined.
- Select and provide respirators based on the evaluated respiratory hazards to which a worker is exposed and factors that affect respirator performance and reliability.
- Respirators selected must be NIOSH approved.

When selecting respirators for IDLH:

- A full facepiece pressure demand self-contained breathing apparatus (SCBA) certified by NIOSH for a minimum service life of thirty minutes, or
- A combination full facepiece pressure demand supplied-air respirator (SAR) with auxiliary self-contained air supply.
- Respirators approved for escape from IDLH atmospheres shall be NIOSH-certified for escape from atmosphere in which the will be used.

When selecting respirators for NON-IDLH:

- Provide a respirator that is adequate to protect the health of the employee and ensure compliance with all other OSHA statutory and regulatory requirements, under routine and reasonably foreseeable emergency situations.

- Select respirators appropriate for the chemical state and physical form of the contaminant.
- For protection against gases and vapors, provide:
    1. An atmosphere supplying respirator; or
    2. An air purifying respirator, provided that: (1) The respirator is equipped with an end-of-service life indicator (ELSI) certified by NIOSH for the contaminant; or (2) If there is no ESLI appropriate for conditions in our work site, implement a change schedule for canisters and cartridges that is based on objective information or data that will ensure that canisters and cartridges are changed before the end of their service life.
- For protection against particulates, provide:
    1. An atmosphere supplying respirator; or
    2. An Air-purifying respirator equipped with a filter certified by NIOSH under 30 CFR part 11, as a high efficiency particulate air (HEPA) filter, or an air purifying respirator with a filter certified for particulates by NIOSH under 42 CFR 84; or
    3. For contaminants consisting primarily of particles with mass median aerodynamic diameters (MMAD) of at least 2 micrometers, an air purifying respirator equipped with any filter certified for particulates by NIOSH.

Medical Evaluations

Medical evaluations shall be used to determine whether an employee is eligible to use a respirator and is necessary to prevent injuries, illnesses, and even, in rare cases, death from the physiological burden imposed by respirator use.

No employee shall be assigned to tasks requiring the use of respirators nor fit tested unless it has been determined that the employee is physically able to perform the work and use the respirator. Penn Installations Medical Questionnaire (Appendix C) will be completed.

All medical questionnaires and examinations are confidential and handled during the employee's normal working hours, or at a time and place convenient to the employee. All employees are provided an opportunity to discuss the questionnaire and examination results with their physician or other licensed health care professional (PLHCP).

Before initial examination or questionnaire is given, the PLHCP will be supplied with the following:

- Type and weight of the respirator to be used by the employee;
- Duration and frequency of respirator use (including use for rescue and escape);
- Expected physical work effort;
- Additional protective clothing and equipment to be worn;
- Temperature and humidity extremes that may be encountered.

Once the PLHCP determines whether the employee has the ability to use or not use a respirator, he/she shall send Penn Installations a written recommendation containing only the following information:

- Limitations on respirator use related to the medical condition of the employee, or the workplace conditions, including whether or not the employee is medically able to use the respirator;
- The need, if any, for follow-up medical evaluations; and
- A statement that the PLHCP has provided the employee with a copy of the PLHCP's written recommendation.

Follow-up medical examination:

A follow-up medical examination will be provided if a positive response is given to any question among questions 1 through 9 of the Medical Questionnaire (Appendix C), or if an employee's initial medical examination demonstrates the need for a follow-up medical examination.

If the respirator is a negative pressure respirator and the PLHCP finds a medical condition that may place the employee's health at risk if the respirator is used, Penn Installations will provide a powered air-purifying respirator (PAPR) if the PLHCP's medical evaluation finds that the employee can use such a respirator. If a subsequent medical evaluation finds that the employee is medically able to use a negative pressure respirator, then we are no longer required to provide PAPR.

If additional medical examinations are required or needed, Penn Installations will provide as needed.

Fit Testing Procedures

It is self-evident that respirators must fit properly to provide protection. A tight seal must be maintained between the facepiece and the employee's face to ensure contaminated air will not be drawn into the facepiece.

Qualitative fit testing (QLFT) involves the introduction of a gas, vapor, or aerosol test agent into an area around the head of the respirator user. If the user can detect the presence of the test agent through subjective means, such as odor, taste, or irritation, the respirator fit is inadequate.

In a quantitative respirator fit test (QNFT), the adequacy of respirator fit is assessed by measuring the amount of leakage into the respirator, either by generating a test aerosol as a test atmosphere, using ambient aerosol as a test agent, or using controlled negative pressure to measure the volumetric leak rate. Appropriate instrumentation is required to quantify respirator fit in QNFT.

Penn Installations will ensure employees are fit tested with the same make, model, style, and size of respirator that will be used:

- Before an employee is required to use any respirator with negative or positive pressure tight-fitting facepiece;
- Whenever a different respirator face piece (size, style, model, or make) is used;
- At least annually;
- Whenever the employee reports, or our company, PLHCP, supervisor, or Safety Representative makes visual observations of changes in the employee's physical condition that could affect respirator fit. Such conditions include, but are not limited to, facial scarring, dental changes, cosmetic surgery, or an obvious change in body weight; and
- When the employee, subsequently after passing a fit test, notifies Penn Installations that the fit of the respirator is unacceptable. That employee will be retested with a different respirator facepiece.

Proper Use Procedures

Once the respirator has been properly selected and fitted, its protection efficiency must be maintained by proper use.

Face piece Seal Protection

- Respirators with tight-fitting facepieces shall not be worn by employees who have:
    1. Facial hair that comes between the sealing surface of the facepiece and the face or that interferes with valve function; or
    2. Any condition that interferes with the face-to-facepiece seal or valve function.
- If an employee wears corrective glasses or goggles or other personal protective equipment, ensure that such equipment is worn in a manner that does not interfere with the seal of the facepiece to the face of the user
- For all tight-fitting respirators, ensure that employees perform a user seal check each time they put on the respirator using the procedures in Appendix A.

Continuing Respirator Effectiveness

- Appropriate surveillance must be maintained of work area conditions and degree of employee exposure or stress. When there is a change in work area conditions or degree of employee exposure or stress that may affect respirator effectiveness, reevaluate the continued effectiveness of the respirator.
- Ensure that employees leave the respirator use area:
    1. To wash their faces and respirator facepieces as necessary to prevent eye or skin irritation associated with respirator use; or
    2. If they detect vapor or gas breakthrough, changes in breathing resistance, or leakage of the face piece; or
    3. To replace the respirator or the filter, cartridge, or canister elements.
- If the employee detects vapor or gas breakthrough, changes in breathing resistance, or leakage of the facepiece, replace or repair the respirator before allowing the employee to return to the work area.

Procedures for IDLH Atmospheres

Ensure that:

- One employee or, when needed, more than one employee is located outside the IDLH atmosphere;
- Visual, voice, or signal line communication is maintained between the employee(s) in the IDLH atmosphere and the employee(s) located outside the IDLH atmosphere;
- The employee(s) located outside the IDLH atmosphere are trained and equipped to provide effective emergency rescue;
- The employer or designee is notified before the employee(s) located outside the IDLH atmosphere enter the IDLH atmosphere to provide emergency rescue;
- The employer or designee authorized to do so by the company, once notified, provides necessary assistance appropriate to the situation;
- Employee(s) located outside the IDLH atmospheres are equipped with:
    1. Pressure demand or other positive pressure self-contained breathing apparatuses (SCBAs), or a pressure demand or other positive pressure supplied-air respirator with auxiliary SCBA; and either:
    2. Appropriate retrieval equipment for removing the employee(s) who enter(s) these hazardous atmospheres where retrieval equipment would contribute to the rescue of the employee(s) and would not increase the overall risk resulting from entry; or

3. Equivalent means for rescue where retrieval equipment is not required under the bullet item above this one.

Maintenance and Care Procedures

Cleaning & Disinfecting

Penn Installations provides each respirator user with a respirator that is clean, sanitary, and in good working order. Respirators are required to be provided in a clean and sanitary manner using the procedures established in Appendix B or equally effective manner.

Dust mask type respirators are to be disposed of after each use. They are not to be re-used by another employee.

Respirators issued for the exclusive use of an employee will be cleaned as often as necessary to be maintained in a sanitary condition, typically after each workday.

Respirators issued to more than one employee will be cleaned and disinfected before being worn by another individual.

Respirators being maintained for emergency use will be cleaned and disinfected after each use.

Respirators that are used in fit testing and training will be cleaned and disinfected after each use.

Storage

Storage of respirators must be done properly to ensure that the equipment is protected and not subject to environmental conditions that may cause deterioration. Respirators are to be stored properly to protect them from damage, contamination, dust, sunlight, extreme temperatures, excessive moisture, and damaging chemicals.

Inspection

In order to assure the continued reliability, respirators must be inspected on a regular basis. The frequency of inspection is related to the frequency of use. Below are the frequencies of inspection:

- All types of respirators used in routine situations will be inspected before each use and during cleaning.
- Respirators maintained for use in emergency situations will be inspected at least monthly and in accordance with the manufacturer's recommendations, and checked for proper function before and after each use.
- Emergency escape-only respirators will be inspected before being carried into the workplace for use.

Respirator inspections include checks for the following:

- Respirator function, tightness of connections, and the condition of the various parts, including, but not limited to, the facepiece, head straps, valves, connecting tube, and cartridges, canisters or filters; and
- Elastomeric parts for pliability and signs of deterioration.

- In addition to the requirements above, self-contained breathing apparatus shall be inspected monthly. Air and oxygen cylinders shall be maintained in a fully charged state and shall be recharged when the pressure falls to 90% of the manufacturer's recommended pressure level. It shall be determined that the regulator and warning devices function properly.

Respirators maintained for emergency use:

- Certify the respirator by documenting the date the inspection was performed, the name (or signature) of the person who made the inspection, the findings, required remedial action, and a serial number or other means of identifying the inspected respirator.
- Provide this information on a tag or label that is attached to the storage compartment for the respirator, is kept with the respirator, or is included in the inspection reports. This information shall be maintained until replaced following a subsequent certification.

Repairs

Respirators that fail an inspection or are otherwise found to be defective shall be removed from service, and discarded or repaired or adjusted in accordance with the following procedures:

- Repairs or adjustments to respirators are to be made only by persons appropriately trained to perform such operations and only with the respirator manufacturer's NIOSH-approved parts designed for the respirator;
- Repairs must be made according to the manufacturer's recommendations and specifications for the type and extent of repairs to be performed; and
- Reducing and admission valves, regulators, and alarms must be adjusted or repaired only by the manufacturer or technician trained by the manufacturer.

Discarding of respirators

Respirators that fail an inspection or are otherwise not fit for use and cannot be repaired must be discarded and made inoperable.

Air Quality Procedures

When atmosphere-supplying respirators are being used to protect employees, it is essential to ensure the air being breathed is of sufficiently high quality. The procedures to ensure adequate air quality, quantity, and flow of breathing air for atmosphere-supplying respirators includes coverage of the following OSHA requirements:

Compressed Air, Compressed Oxygen, Liquid Air, and Liquid Oxygen Used for Respirators:

- Compressed and liquid oxygen must meet the United States Pharmacopoeia requirements for medical or breathing oxygen.
- Compressed breathing air must meet the requirements for Grade D breathing air described in ANSI/Compressed Gas Association Commodity Specification for Air, G-7.1-1989, to include:
    1. Oxygen content (v/v) of 19.5-23.5%;
    2. Hydrocarbon (condensed) content of 5 milligrams per cubic meter of air or less;
    3. Carbon monoxide (CO) content of 10 parts per million (ppm) or less;
    4. Carbon dioxide content of 1,000 ppm or less; and
    5. Lack of a noticeable odor.

- Ensure that compressed oxygen is not used in atmosphere-supplying respirators that have previously used compressed air.
- Ensure that oxygen concentrations greater than 23.5% are used only in equipment designed for oxygen service or distribution.

Cylinders Used to Supply Breathing Air to Respirators:

- Cylinders must be tested and maintained as prescribed in the Shipping Container Specification Regulations of the Department of Transportation (49 CFR 180).
- Cylinders of purchased breathing air must have a certificate of analysis from the supplier that the breathing air meets the requirements for Grade D breathing air.
- The moisture content in the cylinder must not exceed a dew point of -50 deg. F (-45.6 deg. C) at 1 atmosphere pressure.

Compressors:

- Ensure that compressors used to supply breathing air to respirators are constructed and situated so as to:
    1. Prevent entry of contamination air into the air-supply system;
    2. Minimize moisture content so that the dew point at 1 atmosphere pressure is 10 degrees F (5.56 deg. C) below the ambient temperature;
    3. Have suitable in-line air-purifying sorbent beds and filters to further ensure breathing air quality. Sorbent beds and filters must be maintained and replaced or refurbished periodically following the manufacturer's instructions; and
    4. Have a tag containing the most recent change date and the signature of the person authorized to perform the change. The tag must be maintained at the compressor.
- For compressors that are not oil-lubricated, ensure that carbon monoxide levels in the breathing air do not exceed 10 ppm.
- For oil-lubricated compressors, use a high-temperature or carbon monoxide alarm, or both, to monitor carbon monoxide levels. If only high-temperature alarms are used, the air supply must be monitored at intervals sufficient to prevent carbon monoxide in the breathing air from exceeding 10 ppm.

Breathing Air Couplings:

- Ensure that breathing air couplings are incompatible with outlets for jobsite air compressors or other gas/air systems. No asphyxiating substance must be introduced into breathing air lines.

Breathing Gas Containers

- Use breathing gas containers marked in accordance with NIOSH respirator certification standard 42 CFR part 84

Filters, Cartridges, and Canisters:

- Ensure that all filters, cartridge and canisters used in the workplace are labeled and color coded with the NIOSH approval label and that the label is not removed and remain legible

Training

Employee training is an important part of the respiratory protection program and is essential for correct respirator use. Penn Installations shall provide training for new employees as follows:

1. Respiratory hazards to which our employees are potentially exposed during routine and emergency situations, and
2. Proper use of respirators, including putting on and removing them, any limitations on their use, and their maintenance.

This training is provided prior to requiring an employee to use a respirator. However, if an employee has received training within 12 months addressing the seven basic elements (see below) of respiratory protection and the employee can demonstrate that he/she has knowledge of those elements, then that employee is not required to repeat such training initially.

Seven basic elements:

Employees are trained sufficiently to be able to demonstrate knowledge of at least these seven elements:

1. Why the respirator is necessary and how improper fit, usage, or maintenance can compromise the protective effect of the respirator.
2. What the limitations and capabilities of the respirator are.
3. How to use the respirator effectively in emergency situations, including situations in which the respirator malfunctions.
4. How to inspect, put on, remove, use, and check the seals of the respirator.
5. What the procedures are for maintenance and storage of the respirator.
6. How to recognize medical signs and symptoms that may limit or prevent the effective use of respirators.
7. The general requirements of OSHA 19 CFR 1910.134.

Information for employees using respirators when not required under the standard

Respirators are an effective method of protection against designated hazards when properly selected and worn. Respirator use is encouraged, even when exposures are below the exposure limit, to provide an additional level of comfort and protection for workers. However, if a respirator is used improperly or not kept clean, the respirator itself can become a hazard to the worker.

When an employee is provided a respirator for your voluntary use by Penn Installations, or when an employee provides their own respirator, certain precautions must be made to ensure the respirator itself does not present a hazard. The following must be understood prior to using a respirator voluntary:

1. Read and follow all instructions provided by the manufacturer on use, maintenance, cleaning and care, and warnings regarding the respirators limitations.
2. Choose respirators certified for use to protect against the contaminant of concern. NIOSH, the National Institute for Occupational Safety and Health of the U.S. Department of Health and Human Services, certifies respirators. A label or statement of certification should appear on the respirator or respirator packaging. It will tell you what the respirator is designed for and how much it will protect you.

3. Do not wear your respirator into atmospheres containing contaminants for which your respirator is not designed to protect against. For example, a respirator designed to filter dust particles will not protect against gases, vapors, or very small solid particles of fumes or smoke.
4. Keep track of your respirator so that you do not mistakenly use someone else's respirator.

Appendix D – Voluntary Respirator Use Form must be read, understood and signed prior to using a respirator voluntary.

Penn Installations requires employees to be retrained annually and when the following situations occur:

- Changes in the workplace or the type or respirator render previous training obsolete;
- Inadequacies in the employee's knowledge or use of the respirator indicate that the employee has not retained the requisite understanding or skill; or
- Any other situation arises in which retraining appears necessary to ensure safe respirator use.

Recordkeeping

The Safety Director maintains records for each particular project as it relates to the Respiratory Protection Program. Upon completion of the project, relevant records, such as medical evaluations and fit testing records are maintained at the Corporate Office and made available.

Medical Surveillance

Medical evaluation records will be kept in the employee's record files and by the occupational medical panel provider. The records include at least the following information:

- The name of tested employee.
- A copy of the employee's medical examination results, including the medical history, questionnaire responses, results of any tests, and physician's recommendations.
- Physician's written opinions.
- Any employee medical complaints related to wearing respiratory protection.
- This record is maintained for the duration of employment plus thirty (30) years, in accordance with OSHA 29 CFR 1910.1020.

Fit Testing

Fit testing records will be kept on the employees personnel file. The records include at least the following information:

- The name of tested employee.
- The date and type of fit test performed.
- Specific make, model, and size of respirator tested.
- The pass/fail results for QLFT's or fit factor and strip chart recording or other recording of the test results for QNFT's
- This record is maintained until the next fit test is administered.

Training Records

Employee training records will be kept for one (1) year beyond the last date of employment.

Availability

Upon request, exposure records will be made available for examination and copying to affected employees, former employees, designated representatives, and the Assistant Secretary, in accordance with OSHA 29 CFR 1910.1020(a) through (e) and (g) through (i).

Transfer of Records

We comply with the requirements concerning transfer of records set forth in OSHA 29 CFR 1910.1020 (h). If we ever cease to do business and there is no successor employer to receive and retain the records for the prescribed period, we shall notify the Director at least 90 days prior to disposal and, upon request, transmit them to the Director.

Program Evaluation

It is inherent in respirator use that problems with protection, irritation, breathing resistance, comfort, and other respirator-related factors occasionally arise in most respirator protection programs. Although it is not possible to eliminate all problems associated with respirator use, we try to eliminate as many problems as possible to improve respiratory protection and encourage employee acceptance and safe use of respirators.

Penn Installations will evaluate the program annually and will be evaluated according to the following:

- Conducting evaluations of the workplace as necessary to ensure that the provisions of the current written program are being effectively implemented and that it continues to be effective.
- Regularly consulting employees required to use respirators to assess their views on program effectiveness and to identify any problems. Any problems that are identified during this assessment must be corrected. Factors to assess include, but are not limited to:
    - Respirator fit (including the ability to use the respirator without interfering with effective workplace performance).
    - Appropriate respirator selection for the hazards to which the employee is exposed.
    - Proper respirator use under the workplace conditions the employee encounters.
    - Proper respirator maintenance.
- Any problems that are identified during this assessment shall be corrected.

Appendix A - User Seal Check Procedures

The individual who uses a tight-fitting respirator is to perform a user seal check to ensure that an adequate seal is achieved each time the respirator is put on. Either the positive and negative pressure checks listed in this appendix, or the respirator manufacturers recommended user seal check method shall be used. User seal checks are not substitutes for qualitative or quantitative fit tests.

I. Facepiece Positive and/or Negative Pressure Checks

- ***Positive pressure check.*** Close off the exhalation valve and exhale gently into the facepiece. The face fit is considered satisfactory if a slight positive pressure can be built up inside the facepiece without any evidence of outward leakage of air at the seal. For most respirators this method of leak testing requires the wearer to first remove the exhalation valve cover before closing off the exhalation valve and then carefully replacing it after the test.
- ***Negative pressure check.*** Close off the inlet opening of the canister or cartridge(s) by covering with the palm of the hand(s) or by replacing the filter seal(s), inhale gently so that the facepiece collapses slightly, and hold the breath for ten seconds. The design of the inlet opening of some cartridges cannot be effectively covered with the palm of the hand. The test can be performed by covering the inlet opening of the cartridge with a thin latex or nitrile glove. If the facepiece remains in its slightly collapsed condition and no inward leakage of air is detected, the tightness of the respirator is considered satisfactory.

II. Manufacturer's Recommended User Seal Check Procedures

- The respirator manufacturer's recommended procedures for performing a user seal check may be used instead of the positive and/or negative pressure check procedures provided that the employer demonstrates that the manufacturer's procedures are equally effective.

Appendix B – Respirator Cleaning

I. Procedures for Cleaning Respirators

- Remove filters, cartridges, or canisters. Disassemble facepieces by removing speaking diaphragms, demand and pressure- demand valve assemblies, hoses, or any components recommended by the manufacturer. Discard or repair any defective parts.
- Wash components in warm (110 deg. F maximum) water with a mild detergent or with a cleaner recommended by the manufacturer. A stiff bristle (not wire) brush may be used to facilitate the removal of dirt.
- Rinse components thoroughly in clean, warm (110 deg. F maximum), preferably running water. Drain.
- When the cleaner used does not contain a disinfecting agent, respirator components should be immersed for two minutes in one of the following:
    - Hypochlorite solution (50 ppm of chlorine) made by adding approximately one milliliter of laundry bleach to one liter of water at 110 deg. F; or,
    - Aqueous solution of iodine (50 ppm iodine) made by adding approximately 0.8 milliliters of tincture of iodine (6-8 grams ammonium and/or potassium iodide/100 cc of 45% alcohol) to one liter of water at 110 deg. F; or,
    - Other commercially available cleansers of equivalent disinfectant quality when used as directed, if their use is recommended or approved by the respirator manufacturer.
- Rinse components thoroughly in clean, warm (110 deg. F maximum), preferably running water. Drain. The importance of thorough rinsing cannot be overemphasized. Detergents or disinfectants that dry on facepieces may result in dermatitis. In addition, some disinfectants may cause deterioration of rubber or corrosion of metal parts if not completely removed.
- Components should be hand-dried with a clean lint-free cloth or air-dried.
- Reassemble facepiece, replacing filters, cartridges, and canisters where necessary.
- Test the respirator to ensure that all components work properly.

Appendix C - Medical Questionnaire

To the employer: Answers to questions in Section 1, and to question 9 in Section 2 of Part A, do not require a medical examination.

To the employee:

Can you read (circle one): Yes/No

Your employer must allow you to answer this questionnaire during normal working hours, or at a time and place that is convenient to you. To maintain your confidentiality, your employer or supervisor must not look at or review your answers, and your employer must tell you how to deliver or send this questionnaire to the health care professional who will review it.

Part A. Section 1. (Mandatory) The following information must be provided by every employee who has been selected to use any type of respirator (please print).

1. Today's date: _____

2. Your name: _____

3. Your age (to nearest year):_____

4. Sex (circle one): Male/Female

5. Your height:_____ ft. _____ in.

6. Your weight: _____ lbs.

7. Your job title:_____

8. A phone number where you can be reached by the health care professional who reviews this questionnaire (include the Area Code):_____

9. The best time to phone you at this number: _____

10. Has your employer told you how to contact the health care professional who will review this questionnaire (circle one): Yes/No

11. Check the type of respirator you will use (you can check more than one category):
a. _____ N, R, or P disposable respirator (filter-mask, non-cartridge type only).
b. _____ Other type (for example, half- or full-facepiece type, powered-air purifying, supplied-air, self-contained breathing apparatus).

12. Have you worn a respirator (circle one): Yes/No

If "yes," what type(s):_____

Part A. Section 2. (Mandatory) Questions 1 through 9 below must be answered by every employee who has been selected to use any type of respirator (please circle "yes" or "no").

1. Do you *currently* smoke tobacco, or have you smoked tobacco in the last month: Yes/No

2. Have you *ever had* any of the following conditions?

   a. Seizures: Yes/No

   b. Diabetes (sugar disease): Yes/No

   c. Allergic reactions that interfere with your breathing: Yes/No

   d. Claustrophobia (fear of closed-in places): Yes/No

   e. Trouble smelling odors: Yes/No

3. Have you *ever had* any of the following pulmonary or lung problems?

   a. Asbestosis: Yes/No

   b. Asthma: Yes/No

   c. Chronic bronchitis: Yes/No

   d. Emphysema: Yes/No

   e. Pneumonia: Yes/No

   f. Tuberculosis: Yes/No

   g. Silicosis: Yes/No

   h. Pneumothorax (collapsed lung): Yes/No

   i. Lung cancer: Yes/No

   j. Broken ribs: Yes/No

   k. Any chest injuries or surgeries: Yes/No

   l. Any other lung problem that you've been told about: Yes/No

4. Do you *currently* have any of the following symptoms of pulmonary or lung illness?

   a. Shortness of breath: Yes/No

   b. Shortness of breath when walking fast on level ground or walking up a slight hill or incline: Yes/No

   c. Shortness of breath when walking with other people at an ordinary pace on level ground: Yes/No

   d. Have to stop for breath when walking at your own pace on level ground: Yes/No

e. Shortness of breath when washing or dressing yourself: Yes/No

f. Shortness of breath that interferes with your job: Yes/No

g. Coughing that produces phlegm (thick sputum): Yes/No

h. Coughing that wakes you early in the morning: Yes/No

i. Coughing that occurs mostly when you are lying down: Yes/No

j. Coughing up blood in the last month: Yes/No

k. Wheezing: Yes/No

l. Wheezing that interferes with your job: Yes/No

m. Chest pain when you breathe deeply: Yes/No

n. Any other symptoms that you think may be related to lung problems: Yes/No

5. Have you *ever had* any of the following cardiovascular or heart problems?

a. Heart attack: Yes/No

b. Stroke: Yes/No

c. Angina: Yes/No

d. Heart failure: Yes/No

e. Swelling in your legs or feet (not caused by walking): Yes/No

f. Heart arrhythmia (heart beating irregularly): Yes/No

g. High blood pressure: Yes/No

h. Any other heart problem that you've been told about: Yes/No

6. Have you *ever had* any of the following cardiovascular or heart symptoms?

a. Frequent pain or tightness in your chest: Yes/No

b. Pain or tightness in your chest during physical activity: Yes/No

c. Pain or tightness in your chest that interferes with your job: Yes/No

d. In the past two years, have you noticed your heart skipping or missing a beat: Yes/No

e. Heartburn or indigestion that is not related to eating: Yes/No

d. Any other symptoms that you think may be related to heart or circulation problems: Yes/No

7. Do you *currently* take medication for any of the following problems?

a. Breathing or lung problems: Yes/No

b. Heart trouble: Yes/No

c. Blood pressure: Yes/No

d. Seizures (fits): Yes/No

8. If you've used a respirator, have you *ever had* any of the following problems? (If you've never used a respirator, check the following space and go to question 9:)

a. Eye irritation: Yes/No

b. Skin allergies or rashes: Yes/No

c. Anxiety: Yes/No

d. General weakness or fatigue: Yes/No

e. Any other problem that interferes with your use of a respirator: Yes/No

9. Would you like to talk to the health care professional who will review this questionnaire about your answers to this questionnaire: Yes/No

Questions 10 to 15 below must be answered by every employee who has been selected to use either a full-facepiece respirator or a self-contained breathing apparatus (SCBA). For employees who have been selected to use other types of respirators, answering these questions is voluntary.

10. Have you *ever lost* vision in either eye (temporarily or permanently): Yes/No

11. Do you *currently* have any of the following vision problems?

a. Wear contact lenses: Yes/No

b. Wear glasses: Yes/No

c. Color blind: Yes/No

d. Any other eye or vision problem: Yes/No

12. Have you *ever had* an injury to your ears, including a broken ear drum: Yes/No

13. Do you *currently* have any of the following hearing problems?

a. Difficulty hearing: Yes/No

b. Wear a hearing aid: Yes/No

c. Any other hearing or ear problem: Yes/No

14. Have you *ever had* a back injury: Yes/No

15. Do you *currently* have any of the following musculoskeletal problems?

a. Weakness in any of your arms, hands, legs, or feet: Yes/No

b. Back pain: Yes/No

c. Difficulty fully moving your arms and legs: Yes/No

d. Pain or stiffness when you lean forward or backward at the waist: Yes/No

e. Difficulty fully moving your head up or down: Yes/No

f. Difficulty fully moving your head side to side: Yes/No

g. Difficulty bending at your knees: Yes/No

h. Difficulty squatting to the ground: Yes/No

i. Climbing a flight of stairs or a ladder carrying more than 25 lbs: Yes/No

j. Any other muscle or skeletal problem that interferes with using a respirator: Yes/No

Part B: Any of the following questions, and other questions not listed, may be added to the questionnaire at the discretion of the health care professional who will review the questionnaire.

1. In your present job, are you working at high altitudes (over 5,000 feet) or in a place that has lower than normal amounts of oxygen: Yes/No

If "yes," do you have feelings of dizziness, shortness of breath, pounding in your chest, or other symptoms when you're working under these conditions: Yes/No

2. At work or at home, have you ever been exposed to hazardous solvents, hazardous airborne chemicals (e.g., gases, fumes, or dust), or have you come into skin contact with hazardous chemicals: Yes/No

If "yes", name the chemicals if you know them:_____

_____

_____

3. Have you ever worked with any of the materials, or under any of the conditions, listed below:

a. Asbestos: Yes/No

b. Silica (*e.g.*, in sandblasting): Yes/No

c. Tungsten/cobalt (e.g., grinding or welding this material): Yes/No

d. Beryllium: Yes/No

e. Aluminum: Yes/No

f. Coal (for example, mining): Yes/No

g. Iron: Yes/No

h. Tin: Yes/No

i. Dusty environments: Yes/No

j. Any other hazardous exposures: Yes/No

If "yes," describe these exposures:

4. List any second jobs or side businesses you have: _____

_____

5. List your previous occupations: _____

_____

6. List your current and previous hobbies: _____

_____

7. Have you been in the military services? Yes/No

If "yes," were you exposed to biological or chemical agents (either in training or combat): Yes/No

8. Have you ever worked on a HAZMAT team? Yes/No

9. Other than medications for breathing and lung problems, heart trouble, blood pressure, and seizures mentioned earlier in this questionnaire, are you taking any other medications for any reason (including over-the-counter medications): Yes/No

If "yes," name the medications if you know them: _____

10. Will you be using any of the following items with your respirator(s)?

a. HEPA Filters: Yes/No

b. Canisters (for example, gas masks): Yes/No

c. Cartridges: Yes/No

11. How often are you expected to use the respirator(s) (circle "yes" or "no" for all answers that apply to you)?:

a. Escape only (no rescue): Yes/No

b. Emergency rescue only: Yes/No

c. Less than 5 hours *per week:* Yes/No

d. Less than 2 hours *per day:* Yes/No

e. 2 to 4 hours per day: Yes/No

f. Over 4 hours per day: Yes/No

12. During the period you are using the respirator(s), is your work effort:

a. *Light* (less than 200 kcal per hour): Yes/No

If "yes," how long does this period last during the average shift: hrs. mins.

Examples of a light work effort are *sitting* while writing, typing, drafting, or performing light assembly work; or *standing* while operating a drill press (1-3 lbs.) or controlling machines.

b. *Moderate* (200 to 350 kcal per hour): Yes/No

If "yes," how long does this period last during the average shift: hrs. mins.

Examples of moderate work effort are *sitting* while nailing or filing; *driving* a truck or bus in urban traffic; *standing* while drilling, nailing, performing assembly work, or transferring a moderate load (about 35 lbs.) at trunk level; *walking* on a level surface about 2 mph or down a 5-degree grade about 3 mph; or *pushing* a wheelbarrow with a heavy load (about 100 lbs.) on a level surface. c. *Heavy* (above 350 kcal per hour): Yes/No

If "yes," how long does this period last during the average shift:_____ hrs. _____ mins.

Examples of heavy work are *lifting* a heavy load (about 50 lbs.) from the floor to your waist or shoulder; working on a loading dock; *shoveling; standing* while bricklaying or chipping castings; *walking* up an 8-degree grade about 2 mph; climbing stairs with a heavy load (about 50 lbs.).

13. Will you be wearing protective clothing and/or equipment (other than the respirator) when you're using your respirator: Yes/No

If "yes," describe this protective clothing and/or equipment: _____
_____

14. Will you be working under hot conditions (temperature exceeding 77 deg. F): Yes/No

15. Will you be working under humid conditions: Yes/No

16. Describe the work you'll be doing while you're using your respirator(s):

17. Describe any special or hazardous conditions you might encounter when you're using your respirator(s) (for example, confined spaces, life-threatening gases):

18. Provide the following information, if you know it, for each toxic substance that you'll be exposed to when you're using your respirator(s):

Name of the first toxic substance:_____
Estimated maximum exposure level per shift:_____
Duration of exposure per shift:_____
Name of the second toxic substance:_____
Estimated maximum exposure level per shift:_____
Duration of exposure per shift:_____
Name of the third toxic substance:_____
Estimated maximum exposure level per shift:_____
Duration of exposure per shift:_____
The name of any other toxic substances that you'll be exposed to while using your respirator:
_____
_____
_____

19. Describe any special responsibilities you'll have while using your respirator(s) that may affect the safety and well-being of others (for example, rescue, security):

_____

Appendix D - Voluntary Respirator Use

Respirators are an effective method of protection against designated hazards when properly selected and worn. Respirator use is encouraged, even when exposures are below the exposure limit, to provide an additional level of comfort and protection for workers. However, if a respirator is used improperly or not kept clean, the respirator itself can become a hazard to the worker. Sometimes, workers may wear respirators to avoid exposures to hazards, even if the amount of hazardous substance does not exceed the limits set by OSHA standards. If your employer provides respirators for your voluntary use, or if you provide your own respirator, you need to take certain precautions to be sure that the respirator itself does not present a hazard.

You should do the following:

1. Read and heed all instructions provided by the manufacturer on use, maintenance, cleaning and care, and warnings regarding the respirators limitations.

2. Choose respirators certified for use to protect against the contaminant of concern. NIOSH, the National Institute for Occupational Safety and Health of the U.S. Department of Health and Human Services, certifies respirators. A label or statement of certification should appear on the respirator or respirator packaging. It will tell you what the respirator is designed for and how much it will protect you.

3. Do not wear your respirator into atmospheres containing contaminants for which your respirator is not designed to protect against. For example, a respirator designed to filter dust particles will not protect you against gases, vapors, or very small solid particles of fumes or smoke.

4. Keep track of your respirator so that you do not mistakenly use someone else's respirator.

Penn Installations provides N95 particulate respirators for use. All other respirators will be provided as needed when type of work requires the use. Additional fit testing, medical examinations, and training will be provided when other types of respirators are provided.

By signing this record, I indicate I have read and been provided a copy of Appendix D of the OSHA Regulations. I understand that any voluntary use of respirator provided to me by Penn Installations, or that I bring into the workplace, cannot be used where respirator use is required.

Name: _____ Signature: _____ Date: _____

Cell Phone Policy

Purpose

The purpose of this policy is to establish rules, guidelines and responsibilities for use of cell phones while operating company owned vehicles.

General Requirements

Responsibilities

- Management
  - Ensure periodic reviews of this written program are conducted.
  - Ensure periodic audits, at least annually, of employee's utilization of this program. If deviations or inadequacies are identified, management will take necessary action to correct.
  - Ensure an adequate level of training is provided for all employees and
  - Complete and sign the policy form.
- Supervisors
  - Ensure the guidelines found within this program are being followed through periodic audits and discipline.
- Employees
  - Employees shall comply with the procedures stated in this program.

Guidelines

- No employee operating company owned vehicles is permitted to use or operate a cell phone while the vehicle is in motion. This covers all applications of a phone, including but not limited to emails, texts, phone calls and application use.
  - All vehicles must come to a complete stop and brake applied prior to use of a cell phone.
  - Failure to follow the cell phone program can result in disciplinary action from review, suspension, and up to termination.
- Personal calls are only permitted in the event of an emergency.
  - Personal calls shall be limited to break and/or lunch time.

Training

The following training will be implemented to all affected employees under the Cell Phone Program for Compliance:

- Educate on the requirements for cell phone compliance set by this program.
- Cover disciplinary actions for failure to implement or adhere to this program.

Cell Phone Policy

Driving and using a cell phone leads to an increased risk of having an accident due to the lack of attention while driving. In the same regard, personal cell phone use during working hours can lead to an increased risk of accidents as well.

Therefore, our policy regarding the use of cell phones is as follows:

- Cell phone use while driving company vehicles without the use of hands-free device is strictly prohibited including but not limited to emails, texts, phone calls and application use.
- If you need to place or receive a call, email, text or use an application; pull off the road to a safe location.
- Ask a passenger to take or make the call for you.
- Finally, the most important point, Keep Your Hands on the Wheel and Your Eyes and Mind on the Road While Driving AT ALL TIMES.
- Personal cell phone calls while at work are only permitted in the case of an emergency.
- Personal calls shall be limited to break and/or lunch time.
- Before accepting or making a call, ensure safety will not be compromised.
- No walking while talking, pay attention to the surroundings.

Failure to follow the Cell Phone Policy can result in disciplinary action.

I have read the above policy and will abide by it at all times.

_____ _____

Employee Signature Date

Powered Industrial Trucks (Forklift)

Purpose

The purpose of this program is to prevent employee injury involving Powered Industrial Trucks (PIT) through implementation of general safety requirements, practices, and precautions regarding the safe operation of powered industrial trucks.

This document applies to all employees of the Company who operate Powered Industrial Trucks as well as all subcontractors engaged in Powered Industrial Truck operations.

To ensure all operators are effectively trained and certified in the safe operation of Powered Industrial Trucks.

General Requirements

Responsibilities:

Management:

- Ensure compliance with this written program and OSHA 29 CFR 1910.178.
- Ensure periodic reviews of this written program are conducted.
- Ensure periodic audits of employees utilizing the procedures within this written program are conducted. If deviations or inadequacies are identified, management will take necessary action to correct.
- Ensure an adequate level of training is provided for all employees covered by this written program.

Supervisors:

- Ensure the procedures found within this program are being followed through periodic audits and corrective action.
- Ensure that all employees covered by this program have access to and review this written program.

Employees:

- Employees shall comply with the procedures stated in this Powered Industrial Truck Program
- Certified operators are responsible for the safe operation of the vehicle in which they are operating.
- Employees NOT certified to operate a Powered Industrial Truck as per the training requirements established in this program are not permitted to operate Powered Industrial Trucks.

General Requirements:

- Only trained and authorized employees and subcontractors shall be permitted to operate a forklift truck.
- Modifications and additions (counterweights), which affect capacity and safe operation, shall not be performed without manufacturer's prior written approval. Capacity, operation, and maintenance instruction plates, tags, or decals shall be changed accordingly.

- If a location with the potential to contain hazardous concentrations of flammable or combustible vapors is present, a hazard evaluation shall be conducted and the correct class, designation, and type of Powered Industrial Truck shall be utilized.
- Battery charging operations shall be located in areas designated for that purpose. These areas shall be isolated, and ventilated.
- Trucks shall be properly positioned and the brake shall be applied before attempting to charge the Powered Industrial Truck.
- Smoking is Prohibited in the charging area
- Precautions shall be taken to prevent open flames, sparks, electric arcs, and other sources of ignition in the battery charging areas.
- The metal covers over the battery shall be opened during recharging.
- Safety Glasses, Face Shield, and Gloves shall be worn when refilling a battery.
- Industrial vehicles should be equipped with an audible back up alarm and a top safety light- refer to the manufactures specifications.
- Vehicle guarding shall not be removed.
- An overhead guard shall be used as protection against falling objects.
- A load backrest extension shall be used to prevent load falling rearward.
- Employees shall receive classroom instruction, have access to a copy of this procedure, pass a written examination, and demonstrate adequate skill competency under a supervised skills evaluation to operate a Powered Industrial Truck.
- A written evaluation of the operator's knowledge regarding safe operation of Powered Industrial Trucks shall be completed and kept on file (written examination).
- An evaluation of powered industrial operation shall be conducted by an authorized supervisor to ensure skill competency. Skills assessment evaluation shall be completed and maintained on file.
- A visual pre-operation inspection shall be conducted before each shift the Powered Industrial Truck will be used-
- Approved employees shall receive a Powered Industrial Truck Operators License

Loading Trailers:

- The brakes of highway trucks shall be set and chocks placed under the rear wheels to prevent trucks from rolling when boarded with Powered Industrial Trucks
- The flooring of trailers and trucks shall be checked for breaks and weakness before being boarded by a Powered Industrial Truck
- Dock Boards and Bridge Plates, shall be properly secured before use.

Vehicle Operation:

- Trucks shall not be driven up to a person standing in front of a fixed object, where the person is blocked from escape.
- No person shall be allowed to stand or pass under the elevated portion of any truck, whether loaded or empty.
- Additional personnel shall not be permitted to ride on Powered Industrial Trucks unless that vehicle has designed passenger seating.
- Employees shall not be lifted on pallets as an alternative to a ladder or lift basket/ platform.
- The following requirements must be complied with when forklifts, which are not equipped with controls that elevate with the lifting carriage, are used to lift personnel. The personnel platform shall:

- Be sufficiently strong to support any load(s), which may be imposed on it.
- Be securely attached to the lifting carriage or forks, which shall be secured so they do not pivot upward.
- Be designed so that the employees will not be exposed to an ingoing nip point, which can be created between the rear of the platform and the structure of the Powered Industrial Truck, as a platform is raised and lowered.
- Be designed so that personnel on the platform are protected from moving parts of the truck.
- Be horizontal and centered and not tilted forward or rearward when elevated.
- Be moved in a smooth steady fashion when personnel are on it.
- Be moved only when the personnel on it specifically request that it be moved.
- Be moved after it has been elevated, when there are personnel on it, only when there is a need for minor horizontal adjustments.
- Be provided with a fall protection system if it is elevated more than four feet above the walking/working surface or is above or adjacent to dangerous equipment. If a guardrail system is used, it shall:
    - Consist of a top rail, approximately 42" in height, a mid rail approximately 21" in height, and a toe board, if operating conditions necessitate such equipment.
    - Be provided with a top rail, which will not deflect to less than 39" above the platform, when a 200 lb. force is imposed on it.
    - Be provided with a top rail which will not fail when a 200 lb. force is imposed on it.
    - Be provided with fall protection, at the opening used for access and egress from it, which provides protection equivalent to that of a standard guardrail system, and
    - Have a slip resistant surface.

The Powered Industrial Truck shall:

- Be operated on a level surface and have firm and level footing.
- Be operated so that overhead obstructions are avoided
- Be operated so that personnel do not come closer to overhead electrical equipment than permitted
- Be equipped with overhead protection if operating conditions necessitate such protection.
- Have all operating controls set at neutral and the parking brake set when personnel are on an elevated platform.
- Have a qualified operator at the controls whenever personnel are on an elevated platform.
- Not be moved after the platform has been raised into position, while personnel are on the platform, except when minor horizontal adjustments of the platform must be made.
- Be loaded to no more than one-half the capacity of the truck, as indicated on the nameplate of the truck on which the platform is used.
- Effective means of communications between the truck operator and the personnel on the platform shall be provided.
- Never use a pallet for lifting any person.
- Make sure the lifting mechanism is operating smoothly. Raise and lower the platform alone to test its operation before allowing anyone on it.
- Employee shall not ride on pallets as a means to stabilize a load during transport. Tie downs of adequate capacity, or the equivalent, shall be used if a load may shift during transport.

A Powered Industrial Truck is considered unattended when the operator is 25 feet or more away from the vehicle, or whenever the vehicle is not in his/her view. When a Powered Industrial Truck is left unattended:

- Load engaging means shall be fully lowered, forks tilted forward so tips touch the ground, controls neutralized, power off, and brakes set.
- Wheels shall be blocked if the truck is parked on an incline.
- Fire aisles, access to stairways, and fire equipment shall be kept clear.
- When following another vehicle, operators shall maintain a minimum of 3-truck lengths distance from the lead vehicle. Vehicles shall not pass at cross aisles and intersections.
- The maximum speed limit for Powered Industrial Trucks may be governed by the field site or can generally be described as a "quick walking pace" (approx. 5 mph), but operators shall use discretion when sharing space with people (< 5 mph).
- Operator shall conduct a pre-operation inspection of the Powered Industrial Truck at the beginning of each shift that it will be operated. A documented inspection form should be completed and maintained
- Should a maintenance issue develop with a Powered Industrial Truck that may affect safe operation, it shall be:
- Placed out of service (apply "out of service" or similar tag or otherwise make inoperative and notify all affected persons)
- Repaired according to manufacturer's specifications.

Vehicle Operator:

- The operator shall slow down and sound the horn at cross aisles and other locations where vision is obstructed. If the load being carried obstructs forward view, the driver may travel with the load trailing or be guided by a signal person.
- The driver shall look in the direction, and keep clear view, of the path of travel.
- An operator shall not leave their vehicle while the load is raised.
- When descending grades in excess of 10 percent, loaded trucks shall be driven with the load trailing. When ascending grades in excess of 10 percent, loads shall be leading.
- Operator's arms or legs are prohibited from being placed between the uprights of the mast or outside the running lines of the truck.
- Stunt driving and horseplay is not permitted.
- Forks should be approximately three to five inches from ground when traveling indoors. When outdoors, forks should be as low as terrain allows.

Safe Approach Distances for Electrical Lines:

Voltage Range	Minimum Safe Approach Distance	
(Phase to Phase)	(Feet)	(Meters)
0 to 300 V	Avoid Contact	
Over 300 V to 50 kV	10	3.05
Over 50 kV to 200 kV	15	4.60
Over 200 kV to 350 kV	20	6.10
Over 350 kV to 500 kV	25	7.62
Over 500 kV to 750 kV	35	10.67
Over 750 kV to1000 kV	45	13.72

Training

All training and evaluations must be completed before an operator is permitted to use a Powered Industrial Truck without continual and close supervision. The operator skills assessment evaluation will be documented. All training certifications and completed evaluation forms should be kept on file.

Training shall be conducted by a person that has the knowledge and ability to instruct and evaluate operators.

A certificate, which is valid for 3 years, will be issued to each employee who receives Powered Industrial Truck safety training which includes:

Operating instructions:

- Differences between autos and PIT
- Engine type and operation
- PIT controls and instrumentation
- Maneuvering and steering
- Visibility
- Forks and adaptations
- Load capacities
- Vehicle stability
- Inspection Procedures
- Refueling and/or charging batteries
- Operating limitations and other precautions

Workplace-related topics:

- Surface Conditions
- Load types
- Stacking Loads
- Pedestrian Traffic
- Narrow aisles and restrictive areas
- Ramps/sloped surfaces
- Carbon Monoxide and/or exhaust fumes
- Other potentially hazardous areas or environments in the workplace
- Review of this written program
- OSHA regulation 1910.178
- Pedestrian rules
- Safety Fundamentals Quiz
- Skills Assessment Evaluation

Refresher Training and Evaluations:

- Formal training for both newly assigned operators and experienced operators will consist of the forklift truck-related topics and workplace-related topics.
- Refresher training, including evaluation of the effectiveness of that training, shall be conducted as required by the following items to ensure that the operator has the knowledge and skills needed to operate safely.

- The operator has been observed to operate the vehicle in an unsafe manner
- The operator has been involved in an accident or near-miss incident.
- The operator has received an evaluation that reveals that the operator is not operating the truck safely.
- The operator is assigned to drive a different type of truck.
- A condition in the workplace changes in a manner that could affect safe operation of the truck.
- Operator's performance shall be evaluated at least once every three years.
- If an operator has previously received training and evaluation, as mentioned above, and such training is appropriate to the truck and working conditions encountered, additional training in that topic is not required.

Certification:
The employer shall certify that each operator has been trained and evaluated. The certification shall include the name of the operator, the date of the training, the date of the evaluation, and the identity of the person(s) performing the training or evaluation.

Aerial Lift Safety Program

Purpose

To ensure Penn Installations complies with OSHA standard 29 CFR 1926.453 and ensure the safe operation of aerial lift equipment by Penn Installation employees and subcontractors. This procedure is applicable to all aerial lifts including boom lifts and scissor lifts used by Penn Installations employees.

General Requirements

Aerial lifts shall be designed and constructed in conformance with the applicable requirements of the American National Standards for "Vehicle Mounted Elevating and Rotating Work Platforms," ANSI A92.2-1969, including appendix.

Inspections

- The operator shall perform a pre-use inspection prior to using the equipment. The inspection will occur at the beginning of each day or at the beginning of each shift, whichever is more frequent. The inspection shall be documented on the Aerial Lift Inspection Report.
- The completed Aerial Lift Inspection Report shall be kept with the lift during use and then given to the Superintendent at the end of the shift.
- During the inspection, when items are found to need repaired or appear unsafe, document the issue on the Aerial Lift Inspection Report.
- Place a “Do Not Operate” tag on the aerial lift and remove the lift from service. Do not use the lift until repairs are made by a qualified personal.
- Report the condition to the Superintendent.

Operations

- When moving the aerial lift, the basket shall be fully lowered and must follow behind the boom.
- A spotter is required when the aerial lift is being operated in tight quarters or when the operator is unable to safely maneuver the aerial lift to the work location.
- The area below the elevated work area shall be barricaded on all sides to prevent unauthorized entry below the work area.
- Manufacturers specified load limits shall not be exceeded.

Fall Protection

- The operator and passenger(s) are required to wear a full body harness with the appropriate lanyard/fall limiter and attach to the manufacturers anchor point provided in the lift at all times.
- When working from the lift, both feet shall be firm and flat on the floor of the lift.
- If the operator or passenger(s) in the lift exits, they shall be tied off 100%.
- Only lifts with manufacturers supplied anchor points shall be used.
- Lifts can be retrofitted with anchor points by the manufacturer only. The manufacturer shall provide documentation stating the certification and warranty of the modification.
- Anchoring to adjacent pole, structure, or equipment while working from an aerial lift shall not be permitted.

The brakes shall be set when outriggers are used. Outriggers shall be positioned on pads or a solid surface. Wheel chocks shall be installed before using an aerial lift on an incline provided they can be safely installed.

Aerial lifts may be "field modified" for uses other than those intended by the manufacturer. The modification must be certified in writing by the manufacture or by any other equivalent entity, such as a nationally recognized testing laboratory, to be in conformity with all applicable provisions of ANSI A92.2-1969 and to be at least as safe as the equipment was before the modification.

All welding shall conform to the following standards as applicable:

- Standard Qualification Procedure, AWS B3.0-41.
- Specifications for Welding Highway and Railway Bridges, AWS D2.0-6.

Aerial lift operators shall ensure that no part of the aerial lift or any conductive object come closer than the distances provided in the table below to overhead power lines.

Voltage	Min. Distance
Less than 50,000 volts (50kV)	10 feet
Greater than 50,000 volts (50kV)	10 feet plus 0.4 inches for each 1 kV over 50kV

Training

Initial Training

- Each operator shall be trained by a qualified person prior to operating any aerial lift covered by this procedure. Only trained persons shall be permitted to operate lifts.
- The training shall consist of reviewing this procedure, passing a written test and a hands-on operation test administrated by a qualified person.

Refresher Training

Employee must undergo refresher training and hands-on evaluation testing if any of the following conditions are observed:

- The operator has been observed to operate the aerial lift in an unsafe manner.
- The operator has been involved in an accident or near-miss incident.
- The operator has received an evaluation that reveals that the operator is not operating the aerial lift safely.
- The operator is assigned to drive a different type of aerial lift.
- A condition in the workplace changes in a manner that could affect safe operation of the aerial lift.
- Operator's performance shall be evaluated at least once every three years.
- If an operator has previously received training and evaluation, as mentioned above, and such training is appropriate to the aerial lift and working conditions encountered, additional training in that topic is not required.

Penn Installations

Aerial Lift Inspection Report

Operator's Name:	**Machine Type:**	**Date:**
Job Location:	**Equipment #:**	**Hour Meter:**

✓ Each Box

D = Deficient (Do Not Operate) R= Repair S = Satisfactory N/A = Not Applicable

BODY:	S	R	D	N/A
Annual Inspection				
Safety Decals				
Operator's Manual				
Lights/Beacon				
Fire Extinguisher				
Damaged, Loose, Missing Parts				
Anchor Points				
Floor Landing				
Access-Steps/ Non skid				
Grab Handles				
Guard Rail/Toeboard				
Load Chart				
Boom Angle Indicator				
Track/Tire Condition				
Hyd. Control Valve and Cylinders				
COMPONENTS:				
Fuel Level				
Hydraulic Fluid Level				
Engine Oil Level				
Engine Coolant Level				
OPERATION:				
Movement Alarm				
Platform and Ground Controls				
Auxiliary Power				
Tilt Sensor Alarm				
Limit Switches				
Horn				
Drive Functions				
Boom Functions				
Steer Functions				
Battery				
Operator Controls				

SYSTEMS CHECK:	S	R	D	N/A
Engine System				
Cooling System (Hoses, Water)				
Air Induction System				
Fuel System				
Electrical Systems				
Exhaust System				
Hydraulic System				
Frame / Sheet metal				
Steering Clutches				
Control Levers				
Rollers and Sprockets				
Blade and Cutting Edge				
Emergency Stops				
Emergency Descent Device (EPU)				

Comments: _____

_____

_____

_____

_____

_____

_____

	Return to Vendor
	Awaiting Repair
	Tagged Out

Supervisor Name: _____ **Date:** _____

Lockout/Tagout

Purpose

The purpose of this program is to prevent injury to an employee or employees from the unexpected energizing of machines, equipment, or electrical circuits under maintenance, service or repair.

In addition, it is to prevent injury resulting from the uncontrolled release of hazardous energy. For example: electrical, mechanical, hydraulic, pneumatic, chemical, thermal, stored/residual, or other energy.

General Requirements

Responsibilities

Management

- Ensure employees are provided with the necessary equipment to successfully lock out the equipment to be serviced.
- Ensure periodic reviews, at least annually, of this written program are conducted.
- Ensure periodic audits, at least annually, of employees utilizing the procedures are conducted. If deviations or inadequacies are identified, management will take necessary action to correct.
- Ensure an adequate level of training is provided for all employees covered by this program.
- Ensure employee involvement in the lockout/tagout process.
- Ensure an investigation is conducted for all incidents involving lockout/tagout activity. Causes and deficiencies should be identified and corrective actions implemented to prevent recurrence.

Supervisors

- Ensure the procedures found within this program are being followed through periodic audits and discipline.
- Ensure that all employees covered by this program have access to and review this written program.

Employees

- Employees shall comply with the procedures stated in this program.
- Employees shall not by-pass any system or procedure intended to protect them from the unexpected energizing of machines, equipment, or electrical circuits under maintenance, service or repair.

Hazardous Energy Control Requirements:

Each authorized employee will be issued individual locks, keys and tags. The locks and tags shall be marked so as to identify the person to whom they belong.

The locks and tags will be:

- Durable – capable of withstanding the environment to which they are exposed for the maximum period of time that exposure is expected.

- Standardized – devices shall be standardized within the facility in at least one of the following criteria: color, shape, or size. In the case of tagout devices, print and format shall be standardized.
- Substantial – Lockout devices shall be substantial enough to prevent removal without the use of excessive force or unusual techniques, such as with the use of bolt cutters or other metal cutting tools.

Three forms of hazardous energy control shall be permitted:

- Individual Employee Hazardous Energy Control Procedure will be followed for minor maintenance, service, adjustment, cleaning, inspection, operating conditions, and the like. The work shall be permitted to be performed without the placement of a lockout/tagout device provided the disconnecting means is adjacent to the equipment on which the work is being performed and is clearly visible to the individual qualified employee involved in the work, and the work does not extend beyond one shift.
- Simple Lockout/Tagout Procedure. All lockout/tagout procedures that involve only a qualified person(s) de-energizing one energy source (i.e. one set of conductors or circuit part source). Refer to section titled "Simple Lockout/Tagout Procedure".
- Complex Lockout/Tagout Procedure. Refer to section titled "Complex Lockout/Tagout". All lockout/tagout procedures where one or more of the following exist:
  - Multiple energy sources
  - Multiple crews
  - Multiple crafts
  - Multiple locations
  - Multiple employers
  - Different disconnecting means
  - Particular Sequences
  - A job or task that continues for more than one work period.

Following the application of lockout or tagout devices to energy isolating devices, all potentially hazardous stored or residual energy shall be relieved, disconnected, restrained & otherwise rendered safe. If there is a possibility of accumulation of stored energy level, verification of isolation shall be continued until the servicing or maintenance is completed, or until the possibility of such accumulation no longer exists.

Preparation for Lockout/Tagout

- The authorized employee shall conduct a survey to locate and identify all isolating devices to be certain which switches, valves, or other energy isolating devices apply to the equipment to be locked out. If more than one energy source, refer to "Multi-Energy Source Procedures" provided in this program. The appropriate tagging system will be dictated by the Multi-energy source Procedure.
- Before an authorized employee shuts down any machine or equipment, they shall have knowledge of the type and magnitude of the energy, the hazards of that energy, and the methods to control it.

Equipment shall be de-energized, locked out, tagged, and placed into Zero Energy State (ZES) prior to performing work.

Electrical equipment shall be tested to ensure Zero Energy State – refer to section in this program titled "Electrical Test Verification of De-energized Circuits".

If ZES is not possible, the work will not be conducted until employees receive approval from management personnel, who shall insure an equal level of employee safety through task specific procedures.

Positioning Machines, Equipment, or Components:

In situations where lockout devices must be temporarily removed from the energy isolating device to test or position the machine, equipment or component thereof, the following sequence of actions shall be followed:

- Clear the machine or equipment of tools and materials.
- Remove employees from the machine or equipment area.
- Remove the lockout/tagout devices.
- Energize and proceed with testing or positioning.
- De-energize all systems and reapply energy control measures to continue the servicing and/or maintenance.

Restoring Machines, Equipment, and/or Electrical Circuits to Normal Production:

- After the servicing and/or maintenance are complete and equipment is ready for normal production operations, check the area to ensure that all persons and tools are clear.
- After all tools have been removed, guards have been reinstalled, and employees are in the clear, remove all lockout / tagout devices and notify affected employees of their removal.
- The only persons who may remove a lockout lock are:
    - The authorized person who placed the lock, and;
    - A project foreman (or designee) and employee representative after following all elements for "removal of lockout / tagout devices by other than the authorized employee". This will only be allowed when an employee leaves site without removing his/her lock. Employees who leave the site without removing his/her lock may be subject to disciplinary action (unless instructed to do so).

Removal of Lockout/Tagout Devices by Other than the Authorized Employee:

If the employee who applied the lock is not available, prior to removal, the project manager (or designee) and employee representative must:

- Complete the Lock Removal Authorization Form found in **Attachment 1.**
- Verify that the authorized person who placed that lock is not on site.
- Make a reasonable effort to contact the employee to advise them that their lock is going to be removed or to instruct them to return to the facility to remove their lock.
- If the employee is unable to be contacted, the supervisor and management representative shall perform a walk-down inspection of the lockout area to ensure the person is no longer on site and not in danger when a lock is removed.
- Ensure that the authorized employee is advised of his/her lockout lock's removal by returning their lock to them when they start their shift.

- All areas involved in a lockout must be notified before the lock is removed. The individual removing the lock is responsible for returning the lock to the identified employee at the start of that employee's shift.

Simple Lockout Tagout Procedure:

- All lockout/tagout procedures that involve only a qualified person(s) de-energizing one energy source (i.e. one set of conductors or circuit part source) are Simple Lockouts.
- Alert the operator and other users of the system or equipment that is to be shut off and the reason.
- Plan the shutdown to ensure that the system will be off. This will be coordinated with an owner representative and Company project foreman. If the machine, equipment, or circuit is operating, shut it down by standard procedure.
- The authorized employee(s) servicing the system or equipment will lockout the energy source with his/her issued lock. No other employee may lockout the energy source for the authorized employee.
- Electrical equipment shall be tested to ensure Zero Energy State – refer to section in this program titled "Electrical Test Verification of De-energized Circuits".
- Tryout the lockout / tagout procedure to be sure the system has been successfully placed into a Zero Energy State. CAUTION: Return operating controls to neutral or off positions after the test.
- When work is completed, the authorized employee will notify any affected persons that the system or equipment will have its energy source restored.
- Only after all affected employees have been warned of re-energizing, will the authorized employee(s) remove their lock(s).
- Do not permit employees to remove another's lock. Be sure employees do not expose other employees to danger. Before re-energizing the machine or equipment, verify that the equipment is clear, and post a watch, if necessary.

Complex Lockout / Tagout Procedure:

All lockout/tagout/tryout procedures where one or more of the following exist require a complex lockout/tagout/tryout procedure:

- Multiple energy sources
- Multiple crews
- Multiple crafts
- Multiple locations
- Multiple employers
- Different disconnecting means
- Particular Sequences
- A job or task that continues for more than one work period.

A person shall be in charge of a complex lockout. This person shall:

- Be a qualified individual who is specifically appointed with overall responsibility to ensure that all energy sources are under lockout and to account for all persons working on the job/task.
- Be permitted to install locks/tags, or direct their installation, on behalf of other employees.
- Accountable for safe execution of the complex lockout.

A written procedure (in addition to this written program) is required for all complex lockout jobs and/or tasks. The written procedure will include at least the following:

- Identify the person in charge;
- Address all the concerns of employees who might be exposed.
- Identify the method to account for all persons who might be exposed to electrical hazards in the course of the lockout. This shall be achieved through one of the following:
    - Each individual will install his/her own personal lock on each lockout and/or tagout device
    - The person in charge shall lock his/her key in a lockbox and each individual will install his/her own personal lock on each lockout and/or tagout device.
    - The person in charge shall maintain a sign in/out log for all persons entering/exiting the area
    - Another equally effective methodology.
- All machinery and equipment with more than one energy source shall have a written energy control procedure.
- Each specific hazardous energy control procedure for Multi-Energy Source Machines must provide the following information:
    - Identification of the system or equipment and its location
    - Identification of energy sources needed dissipated, locked out and tagged out.
    - Step by step shutdown procedures.
    - The types of lockout / tagout devices that will be used.
    - A start-up procedure ensuring the equipment is clear prior to start up.
- Multi-energy source machines or equipment shall be turned off or shutdown using the procedures established and maintained by the equipment owner.
- Lockout devices shall hold the source of energy in the safe or off position.
- After the application of a lockout device to a machine, all potentially hazardous, stored, or residual energy shall be relieved, disconnected, restrained, or otherwise rendered safe.
- Lock out devices shall be affixed to each energy isolating device by authorized employees
- Where Tagout devices are used with energy isolation devices designed with the capability of being locked, the tag attachment shall be fastened at the same point at which the lock would have been attached. Where a tag cannot be affixed directly to the energy isolating device, the tag shall be located as close as safely as possible to the device in a position that will be immediately obvious to anyone attempting to operate the device.
- Electrical equipment shall be tested to ensure Zero Energy State – refer to section in this program titled “Electrical Test Verification of De-energized Circuits”.
- Prior to starting work, the authorized employee shall verify isolation and ensure all energy to the machine or equipment has been eliminated.
- Before lockout/tagout devices are removed and energy is restored to the equipment, the work area shall be inspected to ensure all nonessential items have been removed and that the machine or equipment components are operationally intact. Authorized employees shall be notified that their lockout/tagout device(s) must be removed. Affected employees shall be notified that the machine or equipment will be energized.

Shift or Personnel Change:

- A change over period will be established so that authorized employees may exchange their locks/tags.

- Authorized employees assuming control of the lockout shall be fully briefed in the scope and stage of work by those employees being relieved. The authorized employees assuming control will not begin until satisfied that the lockout/tagout condition is safe.

Periodic Inspections:

- At least annually, the effectiveness of this Lockout / Tagout Program will be evaluated. Any deviation or inadequacies found during the inspection will be documented and corrected.
- An authorized employee (other than the one performing the work) shall conduct the inspection.

Electrical Test Verification of De-energized Circuits:

- Only qualified electrical personnel may test electrical equipment.
- Testing to Ensure Zero Energy State – Electrical Tryout
- After properly interrupting the load current, open the disconnecting device(s) for each source.
- When possible, visually verify that all blades of the disconnecting device(s) are fully open or that draw out-types circuit breakers are withdrawn to the fully disconnected position.
- Use an adequately rated voltage detector to test each phase conductor or circuit part to verify they are de-energized. Test each phase conductor or circuit part both phase-to-phase and phase-to-ground. Before and after each test, determine that the voltage detector is operating satisfactorily.
- Apply grounds when necessary (i.e. potential for induced voltages or stored electrical energy exists).
- An Energized Electrical Work Permit may be required for the test.
- Work in Panelboards
    - Panelboards should be equipped with a lockable cover. If the permanent cover cannot be installed, a temporary cover of a suitable material, with hasps and locks will be fabricated. If fabrication requires an unusual design, the electrician will consult a supervisor for direction.
    - In the process of working within or testing the panelboard, the panelboard shall not be left unattended or effectively isolated.

Training

Company employees will receive training according to their level of participation regarding the lockout process and their normal work duties.

Three levels of training are: authorized, affected, and awareness.
Authorized Personnel:

- Authorized personnel are those employees that perform maintenance or service and are required to work under the protection of a lockout lock. Authorized personnel shall be instructed in the following:
    - The recognition of hazardous energy sources.
    - The type and magnitude of the energy in the workplace.
    - The methods and means necessary for energy isolation and control.
    - Identification of single and multi-energy source equipment.
    - Purpose and use of Hazardous Energy Control Procedures.
    - Nature and limitations of tags. A tag is not to be removed without authorization. The tag is never to be ignored or defeated in any way.

- Conditions for restarting machinery and equipment or removing lockout / tagout devices.
- Relative elements of Subpart S – Electrical.
- Relative elements of NFPA 70E.

Affected Personnel:

- Affected personnel are those employees whose normal job duty is to operate the equipment or machines OR have job tasks in the area in which a lockout/tagout is being performed. Affected personnel shall be instructed in the following:
  - The purpose and use of the energy control procedures.
  - Type and magnitude of the energy sources.
  - Purpose and use of Hazardous Energy Control Procedures.
  - Nature and limitations of tags. A tag is not to be removed without authorization. The tag is never to be ignored or defeated in any way.
  - Conditions for restarting machinery and equipment or removing lockout / tagout devices, and location of isolation devices for the energy sources.

Awareness Level Personnel:

- Awareness level personnel are those employees whose work operations are or may be in an area where energy control procedures may be utilized. Awareness personnel shall be instructed about the procedure, and about the prohibition relating to attempts to restart or reenergize machines or equipment, which are locked out or tagged out.

Retraining shall be provided for authorized and affected personnel when there is:

- a change in job assignments;
- a change in machines, equipment or processes that present a new hazard;
- a change in the energy control procedure;
- when the periodic inspection reveals, or when there is reason to believe that there are deviations from or inadequacies in the employee's knowledge or use of the energy control procedures.
- All training and/or retraining must be documented and signed by both the instructor and attendee(s).

Attachment 1 - Lock Removal Authorization Form

**** USE THIS FORM WHEN REMOVING A LOCKOUT LOCK THAT WAS INADVERTENTLY LEFT ON AN ENERGY ISOLATING DEVICE****

Notice!

In the event of an emergency or should an employee forget to remove his/her lock prior to leaving site and a lock needs to be removed, the project foreman (or designee) will make every effort possible to contact that individual to remove the lock.

If the person is contacted, he/she will remove the lock or give their verbal permission to remove their lock. The project foreman (or designee) and employee representative will proceed with the lock removal, documenting the conversation.

If the person cannot be contacted, insure the employee accountable for the lock has actually left the premises.

Exhaust all reasonable efforts to locate the employee who left the lock on the equipment.

To remove the lock a "walk-down" of the area must be completed by the project foreman (or designee) and employee representative. A "walk-down" includes a search of the premises to ensure the employee, who left the lock on the equipment, is not in danger.

Check the equipment to be energized to be sure that it is safe to remove the lock.

When the project foreman (or designee) and employee representative participating in the "walk-down" determine that the lock can be removed, they will execute their signatures on this form authorizing the removal of the lock.

The lock shall be removed with all members of the "walk-down" present.

Advise the employee that his/her lock has been removed before he/she reports to the next work shift. It is requested and advised that the employee be met at the entrance at which time the lock is returned and the employee notified of the removal.

Employee Name* _____ **Lock ID (#):** _____

Company Official _____ **Date:** _____

Employee Representative _____ **Date:** _____

*** Enter the name and lock number of the employee whose lock was removed.**

Trenching and Excavation Safety Program

This Excavation Safety Program has been developed to protect employees from safety hazards that may be encountered during work in trenches and excavations. This program is intended to assure that:

- Employees who perform work in excavations are aware of their responsibilities and know how to perform the work safely.
- Penn Installations has appointed one or more individuals within the company to assure compliance with the requirements of this program.
- The responsibilities of the Superintendent and workers are clearly detailed.
- All persons involved in excavation and trenching work have received appropriate training in the safe work practices that must be followed when performing this type of work.

Assignment of Responsibility

Employer

In administering the Excavation Safety Program, Penn Installations will:

- Monitor the overall effectiveness of the program.
- Provide atmospheric testing and equipment selection as needed.
- Provide personal protective equipment as needed.
- Provide protective systems as needed.
- Provide training to affected employees and supervisors.
- Provide technical assistance as needed.
- Preview and update the program on at least an annual basis, or as needed.

Superintendent

The Superintendent acts as the competent person for Penn Installations in reference to this program, and must assure that:

- The procedures described in this program are followed.
- Employees entering excavations or trenches are properly trained and equipped to perform their duties safely.
- All required inspections, tests, and recordkeeping functions have been performed.

Employees

All employees, including contractor personnel, who work in or around excavations, must comply with the requirements of this program. Employees are responsible for reporting hazardous practices or situations to Penn Installations management, as well as reporting incidents that cause injury to themselves or other employees to the superintendent and/or safety director.

Training

Training Schedule

- All personnel involved in trenching/excavation work shall be trained in the requirements of this program by the Superintendent/Safety Director.
- Training shall be performed before employees are assigned duties in excavations.
- Retraining will performed when work site inspections indicate that an employee does not have the necessary knowledge or skill to safely work in or around excavations, or when change to this program are made.
- Training records will be maintained by Superintendent/Safety Director.

Training Components

The training provided to all personnel who perform work in excavations shall include:

- The work practices that must be followed during excavating or working in excavations.
- The use of personal protective equipment that will typically be required during work in excavations, including but not limited to safety shoes, hardhats, and fall protection devices.
- Procedures to be followed if a hazardous atmosphere exists or could reasonably be expected to develop during work in an excavation.
- The OSHA Excavation Standard, 29 CFR 1926, Subpart P.
- Emergency and non-entry rescue methods, and the procedure for call rescue services.
- Penn Installations policy on reporting incidents/ near misses.

Training and Duties of Program Manager

The Superintendent shall receive the training detailed in this program as well as training on the requirements detailed in the OSHA Excavation Standard. The Superintendent shall:

- Coordinate, actively participate in, and document the training of all employees affected by this program.
- Ensure on a daily basis, or more often as detailed in this program, that worksite conditions are safe for employees to work in excavations.
- Determine the means of protection that will be used for each excavation project.
- Ensure, if required, that the design of a protective system has been completed and approved by a registered professional engineer before work begins in an excavation.
- Make available a copy of this program and the OSHA Excavation Standard to any employee who requests it.

Excavation Requirements

Utilities and Pre-work Site Inspection

Prior to excavation, the site shall be thoroughly inspected by superintendent to determine if special safety measures must be taken.

Surface Encumbrances

All equipment, materials, supplies, permanent installations (i.e., buildings or roadways), trees, brush, boulders, and other objects at the surface that could present a hazard to employees working in the excavation shall be removed or supported as necessary to protect employees.

Underground Installations

- The location of sewer, telephone, fuel, electric, water, or any other underground installations or wires that may be encountered during excavation work shall be determined and marked prior to opening an excavation. Arrangements shall be made as necessary by the Superintendent with the appropriate utility entity for the protection, removal, shutdown, or relocation of underground installations.
- If it is not possible to establish the exact location of these installations, the work may proceed with caution if detection equipment or other safe and acceptable means are used to locate the utility.
- Excavation shall be done in a manner that does not endanger the underground installations or the employees engaged in the work. Utilities left in place shall be protected by barricades, shoring, suspension, or other means as necessary to protect employees.

Protection of the Public

Barricades, walkways, lighting, and posting shall be provided as necessary for the protection of the public prior to the start of excavation operations.

- Guardrails, fences, or barricades shall be provided on excavations adjacent to walkways, driveways, and other pedestrian or vehicle thoroughfares. Warning light or other illumination shall be maintained as necessary for the safety of the public and employees from sunset to sunrise.
- Walkways or bridges protected by standard guardrails shall be provided where employees and the general public are permitted to crossover excavations. Where workers in the excavation may pass under these walkways or bridges, a standard guardrail and toe board shall be used to prevent the hazard of falling objects. Information on the requirements for guardrails and toe boards may be obtained by contacting the Superintendent.

Protection of Employees

Stairs, ladders, or ramps shall be provided at excavation sites where employees are required to enter trench excavations over four (4) feet deep. The maximum distance of lateral travel (along the length of the trench) necessary to reach the means of egress shall not exceed 25 feet.

Structural Ramps

- Structural ramps used solely by employees as a means of access or egress from excavation shall be designed by a competent person. Structural ramps used for access or egress of equipment shall be designed by a person qualified in structural design, and shall be constructed in accordance with the design.
- Ramps and runways constructed of two or more structural members shall have the structural members connected together to prevent movement or displacement.
- Structural members used for ramps and runways shall be of uniform thickness.

- Cleats or other appropriate means used to connect runway structural members shall be attached to the bottom of the runway or shall be attached in a manner to prevent tripping.
- Structural ramps used in place of steps shall be provided with cleats or other surface treatments on the top surface to prevent slipping.

Ladders

- When portable ladders are used, the ladder side rails shall extend a minimum of three (3) feet above the upper surface of the excavation.
- Ladders shall have nonconductive side rails if work will be performed near exposed energized equipment or systems.
- Two or more ladders, or a double-cleated ladder, will be provided where 25 or more employees will be conducting work in an excavation where ladders serve as the primary means of egress, or where ladders serve two-way traffic.
- Ladders will be inspected prior to use for signs of damage or defects. Damaged ladders will be removed from service and marked with "Do Not Use" until repaired.
- Ladders shall be used only on stable and level surfaces unless secured. Ladders placed in any location where they can be displaced by workplace activities or traffic shall be secured, and barricades shall be used to keep these activities away from the ladders.
- Non self-supporting ladders shall be positioned so that the foot of the ladder is one-quarter of the working length away from the support
- Employees are not permitted to carry any object or load while on a ladder.

Exposure to Vehicular Traffic

Employees exposed to vehicular traffic shall be provided with, and shall wear high visibility vests or other suitable garments marked with or made of reflective or high-visibility material. Emergency lighting, such as spotlights or portable lights, shall be provided as needed to perform work safely.

Exposure to Falling Loads

No employee is permitted underneath loads being handled by lifting or digging equipment. Employees are required to stand away from any vehicle being loaded or unloaded to avoid being struck by any spillage or falling materials. Operators may remain in the cabs of vehicles being loaded or unloaded when the vehicles provide adequate protection for the operator during loading and unloading operations.

Warning System for Mobile Equipment

A warning system shall be used when mobile equipment is operated adjacent to the edge of an excavation if the operator does not have a clear and direct view of the edge of the excavation. The warning system shall consist of barricades, hand or mechanical signals, or stop logs. If possible, grade should be away from the excavation.

Hazardous Atmospheres

- Superintendent will test the atmosphere in excavations over four (4) feet deep if a hazardous atmosphere exists or could reasonably be expected to exist. A hazardous atmosphere could be expected, for example, in excavations in landfill areas, areas where hazardous substances are stored nearby, or near areas containing gas pipelines.

- If a hazardous atmosphere is detected. Penn Installations Confined Space program shall be initiated. The trench/excavation will be treated as a Permit Required Confined Space.
- Adequate precautions shall be taken to prevent employee exposure to atmospheres containing less than 19.5 percent oxygen and other hazardous atmospheres. These precautions include providing proper respiratory protection or forced ventilation of the workspace.
- Forced ventilation or other effective means shall be used to prevent employee exposure to an atmosphere containing a flammable gas in excess of the (10) percent of the lower flammability limit of the gas.
- When controls are used that are intended to reduce the level of atmospheric contaminants to acceptable levels, continuous air monitoring will be performed by Superintendent. The device used for atmospheric monitoring shall be equipped with an audible and visual alarm.
- Atmospheric testing will be performed using a properly calibrated direct reading gas monitor. Direct reading gas detector tubes or other acceptable means may also be used to test potentially toxic atmospheres.
- Each atmospheric testing instrument shall be calibrated by the competent person on a schedule and in the manner recommended by the manufacturer. In addition:
    - Any atmospheric testing instrument that has not been used within 30 days shall be recalibrated prior to use.
    - Each atmospheric testing instrument shall be calibrated at least every six (6) months.
- Each atmospheric testing instrument will be field checked immediately prior to use to ensure that it is operating properly.

Personal Protective Equipment

- All employees working in trenches or excavations shall wear appropriate personal protective equipment.
- Employees performing welding, cutting, or brazing operations, or are exposed to the hazards produced by these tasks, shall wear approved spectacles or a welding face shield or helmet, as determined by the Safety Director.
- Employees shall wear gloves or other suitable hand protection when required.
- Employees using or working in the immediate vicinity of hammer drills, masonry saw, jackhammers, or similar high-noise producing equipment shall wear suitable hearing protection.
- Each employee working at the edge of an excavation six (6) feet or more deep shall be protected from falling. Fall protection shall include guardrail systems, fences, barricades, covers, or a tie-back system meeting OSHA requirements.
- Emergency rescue equipment, such as breathing apparatus, a safety and line, and a stokes basket, shall be readily available where hazardous atmospheric conditions exist or may develop during work in an excavation. This equipment shall be attended when in use. Only personnel who have received approved training and have appropriate equipment shall attempt retrieval that would require entry into a hazardous atmosphere. If entry into a known hazardous atmosphere must be performed, then the Safety Director shall be given advance notice so that the hazards can be evaluated and rescue personnel placed on standby if necessary.

Walkways and Guardrails

Walkways shall be provided where employees or equipment are permitted to cross over excavations. Guardrails shall be provided where walkways, accessible only to on-site project personnel, are six (6) feet or more above lower levels.

Protection from Water Accumulation Hazards

- Employees are not permitted to work in excavations that contain or are accumulating water unless precautions have been taken to protect them from the hazards posed by water accumulation. Precautions may include special support or shield systems to protect from cave-ins, water removal to control the level of accumulating water, or use of safety harnesses and lifelines.
- If water is controlled or prevented from accumulating by the use of water removal equipment, the water removal equipment and operation shall be monitored by a person trained in the use of that equipment.
- If excavation work interrupts the natural drainage of surface water (such as streams), diversion ditches, dikes, or other suitable means shall be used to prevent surface water from entering the excavation. Precautions shall also be taken to provide adequate drainage of the area adjacent to the excavation. Excavations subject to runoff from heavy rains shall be re-inspected by the competent person after each rain incident to determine if additional precautions, such as special support or shield systems to protect from cave-ins, water removal to control the level of accumulating water, or use of safety harnesses and lifelines, should be used.
- The Superintendent shall inform affected workers of the precautions or procedures that are to be followed if water accumulates or is accumulating in an excavation.

Stability of Adjacent Structures

The competent person will determine if the excavation could affect the stability of adjoin buildings, walls, sidewalks, or other structures.

- Support systems (such as shoring, bracing, or underpinning) shall be used to assure the stability of structures and the protection of employees where excavation operation could affect the stability of adjoining buildings, walls, or other structures.
- Excavation below the level of the base or footing of any foundation or retaining wall that could be reasonably expected to pose a hazard to employees shall not be permitted, except when:
    a. A support system, such as underpinning, is provided to ensure the safety of employees and the stability of the structure;
    b. The excavation is in stable rock;
    c. A registered professional engineer has approved the determination that the structure is sufficiently removed from the excavation so as to be unaffected by the excavation activity; or
    d. A registered professional engineer has approved the determined unless a support system or other method of protection is provided to protect employees from the possible collapse of such structures.
- Sidewalks, pavements, and appurtenant structures shall not be undermined unless a support system or other method of protection is provided to protect employees from the possible collapse of such structures.
- Where review or approval of a support system by a registered professional engineer is required, the Superintendent shall secure this review and approval in writing before the work begins.

Protection from Falling Objects and Loose Rocks or Soil

- Adequate protection shall be provided to protect employees from loose rock or soil that could pose a hazard by falling or rolling from an excavation face. Such protection shall consist of:

a. Scaling to remove loose material;
b. Installation of protective barricades, such as wire mesh or timber, at appropriate intervals on the face of the slope to stop and contain falling material; or
c. Benching sufficient to contain falling material.

- Excavation personnel shall not be permitted to work above one another where the danger of falling rock or earth exists.
- Protection shall be provided by keeping such materials or equipment at least two (2) feet from the edge of excavations, by use of restraining devices that are sufficient to prevent materials or equipment from falling or rolling into excavations, or by a combination of both if necessary.
- Materials and equipment may, as determined by a competent person, need to be stored further than two (2) feet from the edge of the excavation if a hazardous loading condition is created on the face of the excavation.
- Materials piled, grouped, or stacked near the edge of an excavation must be stable and self-supporting.

Inspection by Superintendent

- The Superintendent, shall conduct daily inspections of excavations, adjacent areas, and protective systems for evidence of a situation that could result in possible cave-ins, failure of protective systems, hazardous atmospheres, or other hazardous conditions. An inspection shall be conducted by a competent prior to the start of work and as needed throughout the shift. Inspections shall also be made after every rainstorm or other hazard-increasing occurrence. These inspections are only required when the trench will be or is occupied by employees.
- Where the competent person finds evidence of a situation that could result in a possible cave-in, failure of protective systems, hazardous atmosphere, or other hazardous conditions, exposed employees shall be removed from the hazardous area immediately until precautions have been taken to assure their safety.
- The Superintendent shall maintain a written log of all inspections conducted. This log shall include the date, work site location, results of the inspection, and a summary of any action taken to correct existing hazards.

Protective System Requirements

Protection of Employees

- Employees in an excavation shall be protected from cave-ins by using either an adequate sloping and benching system or an adequate support or protective system. The only exceptions are:
    a. Excavations made entirely in stable rock; or
    b. Excavations less than five (5) feet in depth where examination of the ground by the competent person provides no indication of a potential cave-in.
- Protective systems shall be capable of resisting all loads that could reasonably be expected to be applied to the system.

Protective Systems

Excavations and trenches shall be protected as if in Type C Soil, regardless of the actual classification unless written permission is obtained by the Safety Director.

Allowable configurations

- Excavations shall be sloped at an angle no steeper than one and one-half horizontal to one (1 ½:1) vertical (34 degrees measured from the horizontal).

Design by a registered professional engineer

- Sloping or benching systems designed in a manner other than those described in the preceding option shall be approved by a registered professional engineer.
- Designs shall be in written form and shall include at least the following information:
  a. The maximum height and angle of the slopes that were determined to be safe for a particular project, and
  b. The identity of the registered professional engineers who approved the design.
- At least on copy of the design shall be maintained at the jobsite while the slope is being constructed. After that time, the design may be stored off the jobsite, and shall be maintained.

Design of Support, Shield, and Other Protective Systems

The design of support systems, shield systems, and other protective systems shall be selected and constructed by a competent person in accordance with the following requirements:

Designs using manufacturer's tabulated data

- Support systems, shield systems, and other protective systems designed from manufacturer's tabulated data shall be constructed and used in accordance with all specifications, recommendations, and limitations issued or made by the manufacturer.
- Deviation from the specifications, recommendations, and limitations issued or made by the manufacturer shall be allowed only after the manufacturer issues specific written approval.
- Manufacturer's specifications, recommendations, and limitations, as well as the manufacturer's written approval to deviate from the specifications, recommendations, and limitations, shall be kept in written form at the jobsite during construction of the protective systems(s). After that time, the information may be stored off the jobsite, and shall be maintained.

Designs using other tabulated data

Designs of support systems, shield systems, and other protective systems shall be selected from and constructed in accordance with tabulated data, such as tables and charts.

- The tabulated data shall be in written form and shall include all of the following:
  a. Identification of the factors that affect the selection of a protective system drawn from such data;
  b. Identification of the limits of the use of such data; and
  c. Information needed by the user to make a correct selection of a protective system from the data.

- At least one written copy of the tabulated data, which identifies the registered professional engineer who approved the data, shall be maintained at the jobsite during construction of the protective system. After that time, the data may be stored off the jobsite and shall be maintained.

Materials and Equipment

- Materials and equipment used for protective systems shall be free from damage or defects that might affect their proper function.
- Manufactured materials and equipment used for protective systems shall be used and maintained in accordance with the recommendations of the manufacturer, and in a manner that will prevent employee exposure to hazards.
- When materials or equipment used for protective systems are damaged, the Superintendent shall ensure that these systems are examined to evaluate suitability for continued use. If the Superintendent cannot assure that the material or equipment is able to support the intended loads or is otherwise suitable for safe use, then such material or equipment shall be removed from service immediately. The material or equipment shall then be evaluated and approved by a registered professional engineer before being returned to service.

Installation and Removal of Supports

General

- Members of support systems shall be securely connected together to prevent sliding, falling, kick-outs, or other potential hazards.
- Support systems shall be installed and removed in a manner that protects employees from cave-ins, structural collapses, or from being struck by members of the support systems.
- Individual members of the support systems shall not be subjected to loads exceeding those that they were designed to support.
- Before temporary removal of individual support members begins, additional precautions shall be taken to ensure the safety of employees (i.e., the installation of other structural members to carry the loads imposed on the support system).
- Removal of support systems shall begin at, and progress from, the bottom of the excavation. Members shall be released slowly. If there is any indication of possible failure of the remaining members of the structure or possible cave-in of the sides of the excavation, the work shall be halted until it can be examined.
    a. Backfilling shall progress in conjunction with the removal of support systems from excavations.

Additional Requirements

- Excavation of material to a level no greater than two (2) feet below the bottom of the members of a support system is allowed, but only if the system is designed to resist the forces calculated for the full depth of the trench. There shall be no indications of a possible loss of soil from behind or below the bottom of the support system while the trench is open
- Installation of a support system shall be closely coordinated with the excavation of trenches.

Accident Investigations

All incidents that result in injury to workers, as well as near misses, regardless of their nature, shall be reported and investigated. Investigations shall be conducted by Superintendent and Safety Director to identify the cause and means of prevention to eliminate the risk of reoccurrence

Changes to Program

Any Changes to the Excavation Safety Program shall be approved by the Safety Director, and shall be reviewed by a qualified person as the job progresses to determine additional practices, procedures, or training needs necessary to prevent injuries. Affected employees shall be notified of procedure changes, and trained if necessary. A copy of this program shall be maintained.

Glossary

Accepted engineering practices: the standards or practice required by a registered professional engineer.

Aluminum hydraulic shoring: a manufactured shoring system consisting of aluminum hydraulic cylinders (cross braces) used with vertical rails (uprights) or horizontal rails (wales). This system is designed to support the sidewalls of an excavation and prevent cave-ins.

Bell-bottom pier hole: a type of shaft or footing excavation, the bottom of which is made larger than the cross section above to form a bell shape.

Benching system: a method of protecting employees from cave-ins by excavating the sides of an excavation to form one or more horizontal steps, usually with vertical or near-vertical surfaces between levels.

Cave-in: the movement of soil or rock into an excavation, or the loss of soil from under a trench shield or support system, in amounts large enough to trap, bury, or injure and immobilize a person.

Competent person: a person who has been trained to identify hazards in the workplace, or working conditions that are unsafe for employees, and who has the authority to have these hazards corrected.

Cross braces: the horizontal members of a shoring system installed from side to side of the excavation. The cross braces bear against either uprights or wales.

Excavation: any man-made cut, cavity, trench, or depression in an earth surface formed by earth removal.

Faces or side: the vertical or inclined earth surfaces formed as a result of excavation work.

Failure: the movement or damage of a structural member or connection that makes it unable to support loads.

Hazardous atmosphere: an atmosphere that is explosive, flammable, poisonous, corrosive, oxidizing, irritating, oxygen deficient, toxic, or otherwise harmful, that may cause death, illness, or injury.

Kick-out: the accidental movement or failure of a cross brace.

Superintendent: the individual within the company who oversees excavation work and is responsible for assuring compliance with this program.

Protective system: a method of protecting employees from cave-ins, from material that could fall or roll from an excavation face into an excavation, or from the collapse of adjacent structures. Protective systems include support systems, sloping and benching systems, shield systems, and other systems that provide the necessary protection.

Ramp: an inclined walking or working surface that is used to gain access to one point from another. A ramp may be constructed from earth or from structural materials such as steel or wood.

Sheeting: the members of a shoring system that retain the earth in position and in turn are supported by other members of the shoring system.

Shield system: a structure used in an excavation to withstand cave-ins and which will protect employees working within the shield system. Shields can be permanent structures or portable units moved along as work progresses. Shields used in trenches are usually referred to as trench boxes or trench shields.

Shoring system: a structure that is built or put in place to support the sides of an excavation to prevent cave-ins.

Sides: see **faces**

Sloping system: sloping the sides of an excavation away from the excavation to protect employees from cave-ins. The required slope will vary with soil type, weather, and surface loads that may affect the soil in the area of the trench (such as adjacent buildings, vehicles near the edge of the trench, etc.)

Stable rock: natural solid mineral material that can be excavated with vertical sides that will remain intact while exposed.

Support system: a structure used as underpinning, bracing or shoring, which provides support to an adjacent structure, underground installation, or the sides of an excavation.

Tabulated data: tables and charts approved by a registered professional engineer and used to design and construct a protective system.

Trench: a narrow excavation (in relation to its height) made below the surface of the ground.

Trench box or trench shield: see **shield**.

Uprights: the vertical members of a trench shoring system placed in contact with the earth and usually positioned so the individual members do not contact each other. Uprights placed so that individual members are closely spaced, in contact with or interconnected to each other, are often called **sheeting**.

Wales: horizontal members of a shoring system placed in the direction of the excavation face whose sides bear against the vertical members of the shoring system or earth (the uprights or sheeting).

Daily Excavation Inspection

Competent Person's Name:	Project Site:
Permit Begin: Date: Time:	Permit Expires: Date: Time:
Location and Dimensions of Excavation:	
Description of Work:	
Surface Encumbrances:	

Inspection	Protective System
All open trenches being worked are inspected? _____ Yes _____ No_____ N/A	**Check Type of Protective System Used** Sloping:_____ Angle of Slope: _____ Shielding:_____ Type: _____ Shoring:_____ Type: _____ Other:_____ Type: _____
Preplanning for emergencies and rescue complete? _____ Yes _____ No_____ N/A	
Any tension cracks along the top of any slopes? _____ Yes _____ No_____ N/A	
Evidence of significant fractures in the soil or rock? _____ Yes _____ No_____ N/A	**Atmospheric Testing** % Oxygen _____ % Test Time:_____ (19.5%-23.5%) _____ % Test Time:_____ CO _____ PPM Test Time:_____ (<35PPM) _____ PPM Test Time:_____ LEL _____ % Test Time:_____ (<10%) _____ % Test Time:_____ H_2S _____ PPM Test Time:_____ (<10PPM) _____ PPM Test Time:_____
Evidence of caving or sloughing of soil? _____ Yes _____ No_____ N/A	
Any water seepage in trench walls or bottom? _____ Yes _____ No_____ N/A	
Protection from water accumulation?(Dike/Curb) _____ Yes _____ No_____ N/A	
Underground utilities located and marked? (One Call) _____ Yes _____ No_____ N/A	
Systems Locked out / Tagged out? _____ Yes _____ No_____ N/A	
Trench protected from Pedestrian/Vehicle traffic? _____ Yes _____ No_____ N/A	One Call Ticket Number:
Protected from falling loads? (spoils 2' from edge) _____ Yes _____ No_____ N/A	Soil Type:
Adjacent structures supported adequately? _____ Yes _____ No_____ N/A	Soil Test Method:
Access/Egress provided? (Travel Distance <25') _____ Yes _____ No_____ N/A	Weather Conditions:
Trench box(s) certified? (Tabulated Data) _____ Yes _____ No_____ N/A	Emergency Services:_____ Contact Number:_____ Method of Contact:_____
Bracing/Shoring installed per design? _____ Yes _____ No_____ N/A	
Atmospheric testing completed? _____ Yes _____ No_____ N/A	Additional Comments:
Is a Confined Space Entry Permit required? _____ Yes _____ No_____ N/A	

Competent Person Signature:_____ Date:_____ Time: _____

Crane Safety Program

Purpose

The purpose of this program is to provide guidance for the safe operation and control of cranes. This program will also provide guidance for the protection of personnel operating mobile cranes and personnel working in the area of operation.

Responsibilities

Operator

- Will conduct a pre-operational daily inspection of the assigned crane.
- Will operate in a safe and secure manner.
- Seize operation when conditions are deemed unsafe for operation.
- Assumes full responsibility of crane operations, the safety of themselves and those working around/with the crane operation.

Superintendent

- Ensure the following procedures are followed and in accordance with local, state and federal regulations.
- Ensure the operator is qualified and licensed to operate the make and model of mobile crane.
- Ensure signal person and riggers are qualified to perform duties.

Training, Qualifications and Certification

All operators are required to have their CCO (Certified Crane Operator) certification and applicable State License on their person at all times. A copy will be placed on file at the jobsite and a copy in their personnel file.

Authorized Operators must:

- Be qualified to operate the equipment
- Be thoroughly familiar with the controls/power system
- Have knowledge of crane inspection to be aware of any problems in the crane structure, hoisting assembly or drive train
- Understand the capabilities of the specific crane in use
- Understand the crane capacity charts
- Understand the proper programming and setup of the Load Moment Indicator, if the crane is equipped with the system
- Be familiar with the operator and maintenance manuals supplied with the crane

All personnel involved in rigging activities, are required to be a qualified rigger. Qualified riggers are required to maintain their qualification on their persons at all times. A copy will be placed on file at the jobsite and a copy in their personnel file.

Qualified Riggers must have knowledge of:

- Inspection requirements
- Application of rigging devices
- The rigging triangle

All personnel involved in signaling operations, are required to be a qualified signaler. Qualified signalmen are required to maintain their qualification on their persons at all times. A copy will be placed on file at the jobsite and a copy will be placed in their personnel file.

Each Qualified Signaler must meet the following criteria as per1926.1428(c):

- Know and understand the various types of signals used and permitted
- Be competent in the application of the types of signals required and used
- Have knowledge and understanding of lifting equipment operations and limitations

All personnel involved in crane operations, will receive training on the program requirements at initial hire or prior to working with crane operations. Refresher training will occur annually thereafter.

Operations and Practices

Whenever there is a concern as to safety of a lift, the operator has the authority to stop and refuse to handle loads until a qualified person has determined that safety is assured.

No person(s) shall ride on the machine, headache ball, the hook, or the load being handled by the crane. All operations involving the use of a suspended personnel basket or platform shall comply with required regulations.

Accessible areas within the swing radius of all cranes must be barricaded to prevent unauthorized employees entering crush zone. Barricades must be constructed in such a manner to guard employees from being struck or crushed by the crane. Swing radius protection may not be required if the bottom of the crane upper works counterweight is greater than 7 feet above the ground. Follow all local, state and federal regulatory requirements.

Safety latches are required on all crane hooks.

Taglines shall be used for all loads. Personnel must keep clear of all suspended loads. No employee is permitted in the fall zone with the exception of personnel engaged in:

- Hooking, unhooking or guiding a load;
- Initial attachment of the load to a component or structure;
- Operating a concrete bucket.

The route for suspended loads shall be preplanned and precautions taken to ensure that the operator does not swing loads over personnel. The only exception is the employees engaged in hooking and unhooking of a load.

All outriggers on all mobile cranes will be fully extended, set and crane leveled before making any lifts. When the outriggers cannot be fully extended, do not exceed rated “on rubber” capacity chart or manufactures requirements.

Never leave a machine with a load suspended.

The qualified rigger must not attempt any lift for which they believe conditions are inadequate or unsafe.

The designated signal person will be the only one communicating with the operator, unless anyone becomes aware of a safety problem. The worker recognizing a safety concern must signal the operator for an emergency stop.

At any time, if communication is lost between the signal person and the operator, the operator must safely stop operation until communication is reestablished.

Weather Conditions

Discontinue crane operations during thunderstorms or when wind speed exceeds the manufacturer’s recommended safe working limits.

When using a suspended personnel platform, a qualified person must determine if the weather conditions are safe enough to proceed with the lift. Wind speeds of 20 mph or greater at the height of the platform or other indications of hazardous weather are means for the lift to be postponed or terminated if in progress.

Ground Conditions

Cranes must not be assembled or used unless ground conditions are firm, drained, and graded to a sufficient extent so that, in conjunction (if necessary) with the use of supporting materials, the equipment manufacturer's specifications for adequate support and degree of level of the equipment are met. Supporting material may include blocking, crane mats, cribbing or similar supporting material.

Potential hazards beneath the crane such as voids, tanks, utilities, etc. must be researched and identified prior to crane set up.

It is imperative that the Job Superintendent and Authorized Crane Operator walk the travel path of the crane and all questionable ground conditions be observed and noted. Soft ground conditions must be corrected by compaction.

Assembly/Disassembly

As per 1926.1404(a)(2), all assembly and disassembly operations must be supervised and directed by an Assembly/Disassembly Director who meets the criteria of both a competent person and a qualified person. The A/D Director must meet the following criteria:

- Have knowledge of the applicable A/D procedures
- Review appropriate procedures prior to the commencement of A/D
- Instruct A/D crew on their tasks, the hazards associated with their tasks, and hazardous locations that must be avoided during the A/D process
- Protect A/D crew members that are out of the operator’s view via communication with the operator
- Will not allow A/D crew members to work under suspended loads or in an area where unintended dangerous movement of components could occur
- See that all rigging is overseen by a qualified rigger during A/D process
- Ensure a post assembly inspection is performed to verify the crane is assembled/disassembled per the manufacturer’s specifications

The assembly and disassembly of a crane or crane attachments will be under the direction of the A/D Supervisor and shall follow all local, state, federal regulations and crane manufacturer’s specifications for the assembly/disassembly of the specific crane.

Power Line Safety

A crane will not be assembled, disassembled, or operated under any circumstances wherein any part of the crane, load line, or load (including rigging and lifting accessories) will come closer than 20 feet to a power line. If so, the following requirements must be met:

- Option 1 – The power line must be de-energized and then grounded. Must be grounded at the work location.
- Option 2 – Ensure that no part of the crane, load line, or load (including rigging and lifting accessories), get closer than 20 feet to the power line by implementing encroachment precautions established in OSHA 1926.1407 paragraph (b) or OSHA 1926.1408 paragraph (b).
- Option 3 – Determine the lines voltage and the minimum clearance distance permitted per Table A –Minimum Clearance Distances OSHA 1926.1408. If any part of the crane, load line, or

load (including rigging and lifting accessories) gets closer than the minimum clearance distance in Table A, the measures set forth in OSHA 1926.1410 must be strictly followed.

For power lines that are rated over 350 kV but less than 1000kV, wherever the distance “20 feet” is specified, and the distance “50 feet” must be substituted in the above procedures.

For power lines over 1000 kV, the minimum clearance distance must be established by utility owner/operator or registered professional engineer who is a qualified person with respect to electrical power transmission and distribution.

All lines will be considered energized unless the person or utility owning the lines indicates in writing that they are not energized and the lines are grounded at the point of operation.

In situations where a crane must come as close as possible to the 20 foot minimum clearance distance from a power line, a dedicated spotter and a signalperson shall be used to communicate the distance of the boom from the power line to the operator. The spotter and/or signal person shall be equipped with a visual aid to assist in identifying the minimum clearance distance. Examples of a visual aid include, but are not limited to: a clearly visible line painted on the ground; a clearly visible line of stanchions; and a set of clearly visible line-of-sight landmarks (such as a pole behind the dedicated spotter). Audible aids such as handheld air horns shall also be utilized to alert the operator that he/she is approaching the minimum clearance distance.

If there is any question in regard to the minimum clearance distances required, while transporting a load, refer to Table A shown below.

Table A. Minimum Clearance Distances

Voltage (nominal, kV, alternating current)	Minimum clearance distance (feet)
up to 50	10
over 50 to 200	15
over 200 to 350	20
over 350 to 500	25
over 500 to 750	35
over 750 to 1,000	45
over 1,000	(As established by the utility owner/operator or registered professional engineer who is a qualified person with respect to electrical power transmission and distribution).

The procedures in the event of electrical contact with a power line:

- The operator is to safely remain inside the cab except where there is an imminent danger of a fire, an explosion, or other emergency that necessitates leaving the cab.
- The safety means of evacuating from equipment that may be energized.
- The danger of the potentially energized area around the equipment.
- The need for the crew in the area to avoid approaching or touching the equipment and the load.
- Safe clearance distance from power lines.

Inspections

Prior to the each shift, a competent person (crane operator) must conduct a visual inspection of the crane and equipment that will be used. The visual inspection must consist of observation for apparent deficiencies. Any defective equipment must be repaired before continued operation of the crane or equipment. All visual inspections must be documented and returned to the Corporate Office. All corrections of deficiencies must be documented.

If a crane has not been in use for an extended period of time (a month or longer), an inspection must be completed by a qualified individual (mechanic) to ensure the crane is in good working order. The inspection form will be housed at the jobsite and maintained in a file for each specific crane.

When using a Suspended Personnel Platform, the competent person must complete additional visual inspections in accordance with the Pre-Lift Checklist prior to each use. The competent person must inspect the equipment that is in use as well as the ground conditions and the components of the personnel platform before and after each trial lift. If any deficiencies are discovered during an inspection, the lift is not to proceed until they can be repaired.

Post assembly inspections shall be completed prior to operation. The inspection will be completed based on manufacturer instructions, prohibitions, limitations, and specifications. If manufacturer information is unavailable, a registered professional engineer familiar with the type of crane or equipment involved, will completed the inspection. The approval will be obtained in writing that specified requirements are met.

A qualified person (3rd Party) must complete a thorough inspection of all hoisting equipment at least annually. The annual inspection must be documented and must be posted on the equipment. Any defective equipment must be repaired before continued operation.

A qualified rigger shall inspect all rigging prior to use and as necessary during its use to ensure it is safe for use. If a deficiency is found with the rigging, the qualified rigger will determine the category of deficiency (OSHA 1926.1413(a)). Based on the deficiency and category, the qualified will repair or remove from service.

The Job Superintendent is responsible for ensuring daily, monthly, and additional inspections are completed.

Fall Protection

For non-assembly/disassembly work, the employer must provide and ensure the use of fall protection equipment for employees who are on a walking/working surface with an unprotected side or edge more than 6 feet above a lower level as follows:

- When moving point-to-point
- On non-lattice booms
- On lattice booms that are not horizontal
- On horizontal lattice booms where the fall distance is 15 feet or more
- On any part of the equipment, except when the employee is at or near draw-works (when the equipment is running), in the cab, or on the deck

When using a Suspended Personnel Platform, fall protection must be used at any time a worker is within the platform. The fall arrest system must connect to a structural member within the personnel platform that satisfies the criteria for a fall arrest anchor point.

Working Over or Near Water

Any time employees are to be working over water US Coast Guard-approved life jackets must be provided. Life vests must be inspected before and after each use to check for and deficiencies that would alter their strength or buoyancy.

Ring buoys with at least 90 feet of rope must be provided within 200 feet of each other as well as at least one lifesaving watercraft immediately available.

Suspended Personnel Platforms

Hoisting personnel is only permissible if there is no feasible alternative and an approved platform is used, unless otherwise specified by 29 CFR 1926.1431(b).

Before lifting personnel, a Job Safety Analysis (JSA) and the Pre-Lift Checklist must be completed. If any of the pre-lift criteria is not met, the lift is not permissible.

Cranes to be used for personnel lifting must have the appropriate technology as required by the OSHA 1926.1431(d)(5) standards. All cranes to be used in lifting personnel must be equipped with:

- A boom angle indicator
- A boom hoist limiting device
- Anti two-block system
- A system other than the hoist brake which regulates the speed of the hoist mechanism
- A jib angle indicator and jib hoist limiting device if applicable
- Automatic overload protection if articulating
- A boom length indicator if telescopic

The total load when personnel are lifted may never exceed 50% of the crane's capacity. Cranes are to remain stationary with all brakes and locking devices set when working from suspended platforms. Movement of cranes is prohibited when lifting personnel.

Rigging and platforms used for hoisting personnel may not be used for any other purpose.

Rigging must be rated to hold a minimum of five times the maximum intended load. If rotation resistant wire rope is used, it must be rated to support ten times the maximum intended load.

Platforms must be compliant with the requirements in the OSHA part 1926.1431(e) standard. Platforms must be:

- Designed by a qualified person
- Modified only by a certified welder
- Designed to remain level regardless of boom angle
- Capable of supporting its own weight and at least five times the maximum intended load
- Conspicuously marked with its weight and rated capacity
- Equipped with an appropriate guardrail system and grab rail around the entire inside perimeter of the platform

- Equipped with adequate fall protection anchor points to accommodate the anticipated number of workers to be hoisted
- Designed so that access gates do not swing outward and are unable to accidentally open
- Constructed so that employees have sufficient headroom to stand upright
- Constructed to provide overhead protection from falling objects without obscuring the view of the operator or occupants if necessary
- Free of sharp edges which employees could contact

Suspended Platform Lift Requirements

A pre-lift meeting must be conducted before the suspended platform can be used. The operator, signal person(s), employees to be lifted, and supervisor must have a pre-lift meeting before any lift at a new worksite or when any new employees are involved.

Prior to any personnel entering the platform, a trial lift must be conducted with their anticipated weight within the platform. Trial lifts must be conducted before any shift that will require personnel to be hoisted or after any repositioning of the crane is done. After the trial lift, a competent person must inspect the platform and rigging for any defects or damage done. If any issues are found the lift is not to be completed.

After the trial lift, personnel and the load to be lifted in the platform must be hoisted a few inches so that the competent person can ensure that the load is evenly distributed, properly secured, and no deficiencies are present before the lift proceeds.

Before the platform is initially used on a new site or after any modifications are done, it must be proof tested to hold 125% its rated capacity while suspended for five minutes.

Employees working from a suspended platform must wear appropriate PPE and keep all limbs within the basket any time it is in motion. The crane operator must remain at the controls any time there are workers using a suspended platform. The operator is also responsible for stopping any lift if at any point they feel necessary.

Suspended Personnel Platform Pre-Lift Checklist

A.	**Description and Type of Work To Be Performed** *Provide details concerning duties, location, surrounding obstructions, and potential hazards.*			
B.	**Less Hazardous Alternatives** *After each of the following, state reason(s) as to why this method may not be used to perform the work operation.*			
	1.	Ladder and/or stairways (step, extension, A-Frame)		
	2.	Scaffolds (buck, tubular, two-point suspended)		
	3.	Aerial lifts (power platform, vehicle-mounted elevating and rotating work platforms – scissors lifts, JLGs, high-lift boom truck)		
	4.	Personnel hoist (elevators, spider lift)		
	5.	Other mechanical method (clam-shell, magnet, drag)		
	If one of the above methods is feasible, that method must be used to perform the work. If not, continue completing this checklist.			
C.	**Crane Requirements** *Indicate if not applicable*			
	1.	Boom angle indicator	☐ Yes	☐ No
	2.	Boom hoist limiting device	☐ Yes	☐ No
	3.	Boom extension indicator (if telescopic)	☐ Yes	☐ No
	4.	Anti-two block device or damage prevention features	☐ Yes	☐ No
	5.	Wire rope, lifting bridle, and associated hardware; safety factor of 5	☐ Yes	☐ No
	6.	Brakes, pawls, or dogs in good condition	☐ Yes	☐ No
	7.	Controlled load lowering (no free fall)	☐ Yes	☐ No
	8.	Uniformly level (1 percent of level grade)	☐ Yes	☐ No
	9.	Appropriate ground conditions	☐ Yes	☐ No
	10.	Outriggers extended and set	☐ Yes	☐ No
	11.	Automatic overload protection (if articulating)	☐ Yes	☐ No

	12.	Jib angle indicator		☐ Yes	☐ No
	13.	Jib hoist limiting device		☐ Yes	☐ No
	14.	(a)	Crane gross capacity	_____	**ton**
		(b)	Net capacity (after all deductions)	_____	**ton**
		(c)	50 percent of net capacity	_____	**ton**
	15.	Inspected (crane and support) per manufacturer's requirements		☐ Yes	☐ No
D.	**Suspended Personnel Platform Requirements** *Indicate if not applicable*				
	1.	Designed by a qualified engineer		☐ Yes	☐ No
	2.	Welded by a qualified welder		☐ Yes	☐ No
	3.	Rigging has NOT been used for lifting materials other than Suspended Personnel Platform		☐ Yes	☐ No
	4.	Secured to remain balanced and level		☐ Yes	☐ No
	5.	Safety factor of 5 for basket design		☐ Yes	☐ No
	6.	Perimeter guarding		☐ Yes	☐ No
	7.	Inward swinging gate		☐ Yes	☐ No
	8.	Grab rails entire perimeter		☐ Yes	☐ No
	9.	Overhead protection		☐ Yes	☐ No
	10.	Interior free of sharp edges		☐ Yes	☐ No
	11.	Capacity and weight indicators		☐ Yes	☐ No
	12.	Platform identification markings		☐ Yes	☐ No
	13.	Number of radios needed for lift		_____	
	14.	Number of workers permitted for work:		_____	
	15.	Total weight of basket, rigging, workers, and materials		_____	**ton**
	WARNING: If Item D-15 is greater than C-14(c), DO NOT MAKE LIFT!				
E.	**Testing and Inspections**				
	1.	Suspended personnel platform annually inspected		☐ Yes	☐ No
	2.	Platform inspected per use		☐ Yes	☐ No
	3.	Test lift at work location of platform		☐ Yes	☐ No
	4.	Proof test (125% of basket capacity) at each crane setup		☐ Yes	☐ No
	5.	Satisfactory structural condition (welds, supports, etc.)		☐ Yes	☐ No
	6.	Crane level after test lift		☐ Yes	☐ No
	7.	Crane supports after test lift		☐ Yes	☐ No
F.	**Pre-Lift Meeting**				
	1.	Operator's responsibility and duties reviewed		☐ Yes	☐ No
	2.	Signal person's responsibilities and duties reviewed		☐ Yes	☐ No
	3.	Person(s) to be lifted responsibilities and duties reviewed		☐ Yes	☐ No
	4.	Person(s) to be lifted supplied with correct PPE		☐ Yes	☐ No
	5.	Supervision aware of responsibilities and duties reviewed		☐ Yes	☐ No
	6.	Review job safety analysis with all participants		☐ Yes	☐ No
	7.	Penn Installations Crane Safety Program reviewed with all participants		☐ Yes	☐ No
	8.	Load is secure and platform sits level when raised		☐ Yes	☐ No

AUTHORIZATION

We the undersigned, as Project/Site Management of _____ (project name) at _____ (project location) approve the use of a suspended personnel platform at _____ (site location where suspended personnel platform will be used) on _____ (date).

The use of the suspended personnel platform will be in accordance with 29 CFR 1926.1431 or equivalent requirements concerning hoisting personnel baskets/platforms from cranes and derricks, other applicable regulatory standards, and Penn Installations policies and procedures.

APPROVAL SIGNATURES

Position/Title	**Name**	**Signature**	**Date**

RIGGING PRACTICES

Purpose

The purpose of this procedure is to provide guidelines for the safe use of rigging equipment and the inspection of this equipment.

Procedure

Applying wire Rope Clips

- The U-bolts of all clips should always be on the short (dead) end of the rope. Tighten nuts evenly to manufacturer's recommended torque. Before lifting, be sure that all clips have been torqued. After lateral lifts, re-torque all clips. Only drop forged Crosby clips may be used.

Number and Spacing of U-Bolt Wire Rope Clips			
Improved Plow Steel Rope Diameter Inches	Number of Clips Drop Forged	Number of Clips Other Material	Minimum Spacing (Inches)
½	3	4	3
5/8	3	4	3-¾
¾	4	5	4-½
7/8	4	5	5-¼
1	5	6	6
1-1/8	6	6	6-¾
1-¼	6	7	7-½
1-3/8	7	7	8-¼
1-½	7	8	9

General Precautions for Riggers

- All rigging shall be performed by a qualified rigger.
- Know the safe working capacity of all rigging and equipment. Do not exceed this limit.
- Know the load weight; including the weight of the rigging. Avoid sudden snatching, swinging or stopping of loads.
- Inspect all rigging before and during use and remove any defective equipment from service.
- When the temperature is below freezing, extreme caution must be exercised to prevent shock loading to any rigging. Brittle fracture of the steel can occur at these temperatures.
- The most frequent killer in the rigging operations is electrocution caused by contacting overhead power lines. Always maintain a safe working distance from any power line.
- There are specific procedures that must be followed when operating near a power line.
    - A crane will not be assembled, disassembled or operated under any circumstances

wherein any part of the crane, load line, or load (including rigging and lifting accessories) will come closer than 20 feet to a power line. If so, the following requirements must be met:

  - Option 1 – De-energize and ground the power line at the point of work.
  - Option 2 – Ensure that no part of the crane, load line, or load (including rigging and lifting accessories), gets closer than 20 feet to the power line by implementing the measures in OSHA Subpart CC Cranes and Derricks in Construction 1926.1407 paragraph (b) or 1926.1408 paragraph (b).
  - Option 3 – Determine the line's voltage and the minimum clearance distance permitted per Table A – Minimum Clearance Distances in OSHA Subpart CC Cranes and Derricks in Construction 1926.1408. If any part of the crane, load line, or load (including rigging and lifting accessories), gets closer than the minimum clearance distance in Table A, the measures listed in OSHA Subpart CC Cranes and Derricks in Construction 1926.1410 must be strictly followed.

- For lines rated over 350 kV but less than 1000 kV, substitute "50 feet" for "20 feet" in the above procedures.
- For power lines over 1000 kV, the minimum clearance distance must be established by utility owner/operator or registered professional engineer who is a qualified person with respect to electrical power transmission and distribution.
- All lines will be considered energized unless the person or utility owning the lines indicates in writing that they are not energized and the lines are grounded at the point of operation.

- Discontinue operations during thunderstorms or when winds exceed manufacturers' recommended safe working limits.
- Always keep the load line plumb to maintain a stable load. Cranes shall not be side loaded.
- When using slings:
  - Inspect slings before each use.
  - Never use kinked or otherwise damaged slings.
  - Each sling should be marked with its rated capacity.
  - Never sharply bend a sling as this will kink and permanently weakening it.
  - Whenever two or more rope eyes are placed over a hook, use a shackle with the shackle pin resting on the load hook. This will prevent the spread of the sling legs from opening the throat of the hook.
  - Install and secure softeners on all sharp edges.

- Loads must be kept under control at all times. Tag lines shall be used to prevent spinning and guide the load.
- Loads must be safely landed and stable before unhooking. Chocks, blocks or other means must be used to prevent movement of materials while hooking or unhooking.
- NEVER pull slings out from under a load. Use cribbing to allow for safe removal of slings. The sling may catch and suddenly fly free with extreme force causing serious injury.
- Do not give signals to the operator unless it is an emergency stop or you are the designated qualified signal person. Only qualified signal persons may signal the crane.

- Always use double slings when rigging loads like pipe, rebar or lumber over 12 feet long. Shackles are required when two or more slings are in the hook.
- Never ride the load or headache ball.
- Stay out from under suspended loads.
- Keep hands off suspended loads unless absolutely necessary.

Rigger's Guideline

Safety is a continuing concept, requiring daily attention to every detail. It takes only an instant to become "unsafe" and this very instant may cause an accident or injury. The following rigging guideline establishes the minimum requirements to be followed prior to making a lift.

- Lifting equipment general condition - Inspect all equipment for proper working condition. Check for damaged cables, safety devices, fluid levels and operator qualifications.
- Verifying load weight - Know the weight of the load to be lifted. Check vendor drawings or equipment tags for shipping weights. If necessary, estimate weights from material weight charts.
- Check equipment capacity - Calculate motorized equipment capacity from approved load charts. Check equipment tags for rated capacity.
- All safety latches and guards in place - Inspect safety latches for proper operation. Be sure all guards are in place and properly working.
- Shackle capacity - Verify shackle size, which is imprinted on the side of the shackle. Use your shackle chart to determine adequate safe load capacity.
- Rig load for proper balance - Calculate load center of gravity. When in doubt, use multiple sling rigging.
- Crane load line over load center - Load line position should be such that load cannot swing into personnel or equipment.
- Secure the load from swinging free - When lifting a load free from a previously anchored position, such as cutting out piping that has been in service, removing equipment from foundations or dismantling structural members, attach a security device such as a come-a-long, chain fall or rope.
- Tag line installed and manned - Have a tag installed and adequately manned before attempting to swing or transport any load. “NO TAG LINE, NO LIFT”
- Plan the sequence of the work - Have your lift planned, including the swing path and lay down area. Review this work sequence with your flag person, operator and tag line personnel. Make sure all concerned fully understand the sequence of events prior to making the lift.
- Be sure to follow the guidelines for clearance from any electric power lines.
- Rigging equipment for material handling will be inspected prior to use on each shift. Defective rigging equipment will be removed from service.
- Check all loads for loose material that might fall out if load is bumped or jarred.
- When rigging, always pick up the load a few inches off working level and check load for balance and security.
- When making a lift, use softeners on sharp edges and secure them so they will not fall-out when sling is released.
- Approved standard hand signals will be posted on each crane and used to signal operators. Review hands signals with all personnel involved in rigging. Review radio signals if that is the method used for signaling.
- Never raise or swing the load over personnel.

Shackles and Hooks

Shackles will be used in sling eyes to secure the load on hooks when two or more slings are used.

The following table will assist in determining safe working loads for shackles, except that higher loads are permissible when recommended by the manufacturer.

Safe Working Load for Shackles
(In Tons of 2000 Pounds)

Material Size (Inches)	Pin Diameter (Inches)	Safe Working Load
1/2	5/8	1.4
5/8	3/4	2.2
3/4	7/8	3.2
7/8	1	4.3
1	1 1/8	5.6
1 1/8	1 1/4	6.7
1 1/4	1 3/8	8.2
1 3/8	1 1/2	10.0
1 1/2	1 5/8	11.9
1 3/4	2	16.2
2	2 1/4	21.2

All hooks must be inspected before each use for defects if spreading and or defects are noted, they will be taken out of service immediately.

All hooks must have a safety latch.

Slings

The following practices will be observed whenever a sling is used:

- Slings will not be shortened with knots or other makeshift devices.
- Slings will not be loaded in excess of their rated capacities.
- Slings used in a basket hitch will have the loads balanced to prevent slippage.
- Slings will be securely attached to their loads.
- Slings will be padded or protected from the sharp edges of their loads.
- Suspended loads will be kept clear of all obstructions.
- All employees will be kept clear of loads about to be lifted and of suspended loads.
- Hands or fingers will not be placed between the sling and its load while the sling is being tightened around the load.
- Shock loading is prohibited.
- A sling will not be pulled from under a load when the load is resting on the sling.
- All slings will be used, tested, maintained and inspected according to OSHA Construction Regulations.
- Each day before being used, the sling and all fastenings and attachments will be inspected for damage or defects by the qualified rigger. Additional inspections will be performed during the use of the sling, where service conditions warrant. Damaged or defective slings will be removed immediately from service.

Wire Rope Slings

Sling Use:

- The safe working load recommended by the manufacturer will be followed and shall never be exceeded. A safety factor shall be maintained.
- Protruding ends of strands in splices will be blunted or covered.
- Wire rope shall not be secured by knots.

Safe Operating Temperatures:

- Fiber core wire rope slings of all grades will be permanently removed from service if they are exposed to temperatures in excess of 200°F. When non-fiber core wire rope slings of any grade are used at temperatures above 400°F or below minus 60°F, recommendations of the sling manufacturer will be followed.

Synthetic Web Slings

Sling Use:

- Synthetic web slings will not be used with loads in excess of the manufacturer's rated capacities.
- Each sling will be marked or tagged to show the rated capacities for each type of hitch application.

Environmental Conditions:

When synthetic web slings are used, the following precautions will be taken:

- Nylon web slings will not be used where fumes, vapors, sprays, mists, or where liquid acids of phenolic are present.
- Polyester and polypropylene web slings will not be used where fumes, vapors, sprays, mists, or liquids of caustics are present.
- Web slings with aluminum fittings will not be used where fumes, vapors, sprays, mists, or liquids of caustics are present.

Removal from Service:

Synthetic web slings will be immediately removed from service and cut into two pieces to avoid accidental use by others if any of the following conditions are present:

- Acid or caustic burns.
- Melting or charring of any part of the sling surface.
- Snags, punctures, tears, or cuts.
- Broken or worn stitches.
- Distortion of fittings.

Wire rope (slings or hoist rope) shall be immediately removed from service if any of the following conditions are present:

- Wire rope slings shall not be used if there are ten randomly distributed broken wires in one rope lay; five broken wires in one strand in one rope lay.
- Wire rope used as hoist cable on a mobile crane shall not be used if there are six randomly distributed broken wires in one rope lay; three broken wires in one strand in one rope lay.
- Wire rope that shows signs of damage such as excessive wear - wear or scraping of one-third the original diameter of outside individual wires.

- Kinking, crushing, unstranding, bird caging or any other damage resulting in distortion of the rope structure.
- Evidence of heat damage.
- End attachments that are cracked, deformed, or worn.
- Corrosion of the rope or end attachments.

Hooks

Items, such as the following, shall be visually inspected by the user prior to use:

- Crack(s), nick(s), gouge(s)
- Deformation
- Damage from chemicals.
- Damage, engagement or malfunction of latch (if provided).
- Evidence of heat damage.

A qualified person shall examine deficiencies and a determination will be made as to whether they constitute a safety hazard and whether a more detailed inspection is required.

Regular Inspection

Hooks having any of the following conditions shall be removed from service until repaired or replaced:

- *Deformation* - Any bending or twisting exceeding 10 degrees from the plane of the unbent hook.
- *Throat Opening* - Any distortion, causing an increase in throat opening exceeding 15%.
- *Wear* - Any wear exceeding 10% of the original section dimension of the hook or its load pin.
- *Crack(s)*
- If a latch is provided, and it becomes inoperative because of wear or deformation, or fails to fully bridge the throat opening, the hook shall be removed from service until the device has been repaired or replaced; and the throat opening has been assessed per above.
- Dated and signed inspection records shall be kept on file and readily available.
- Hooks shall receive a Non-Destructive Test annually in accordance with applicable standards.

Rigging Accessories

A visual inspection shall be conducted at the beginning of each work shift or prior to use by the user for the following:

- Wear
- Corrosion
- Crack(s)
- Nicks and gouges
- Distortion such as bending or twisting
- Evidence of heat damage

Documented regular inspections shall be conducted for the following items:

- Crack(s)
- Distortion or deformation exceeding 15% of new conditions
- Any sign of incipient failure in shear for shackle pins
- Wear exceeding 10% of original dimensions
- Excessive corrosion
- Excessive heat damage
- Shackles not marked with the manufacturer's name or trademark, size, and rated capacity.

Chain Falls

Lifting chain falls are low-speed, geared for precision lifting and have built-in, no-slip brakes. There are two lifting hooks; one swivel hook mounted on the housing and the other located at the end of the lifting chain. Chain falls are available in a variety of weight capacities ranging from 1/4 ton to 10 tons with assorted pulling chain lengths for longer reaches to the work area.

Chain falls are designed primarily for vertical lifting. The lifting hooks on the housing and chain are tempered but can be bent or partially straightened and must therefore be provided with a safety clip latch to prevent hooks from being dislodged. Before making a lift with the chain fall, be sure the load is rigged properly and the lift area is barricaded and free of personnel. Make all lifts true vertically to prevent shifting, swaying load and undue wear on the hoist. Never use a chain fall for a horizontal pull. The designated chain sprocket engagement will not be obtained.

Come-A-Longs

This compact hoist offers efficient use in close quarters, toolbox size storage and versatility in almost any lifting and pulling situation. The come-a-long is more popular because of its heavy-duty construction and greater lifting ability. The lifting chain or cable is moved by a ratchet lever. The lever has three positions: Forward for lifting or pulling, neutral for free gear travel and reverse for lowering or releasing tension.

Considered the most versatile of the hand-operated hoists, the come-a-long can be used in vertical lifting, pulling and binding on any plane and in tugging heavy objects. Pulling or releasing is accomplished by a ratchet movement of the hand lever, even under tension. Therefore, if it takes two persons to crank the hand lever, the hoist is overloaded for the job. Avoid using cable-type lever hoists if the cable is frayed or damaged. Never use a cheater bar on the handle of the come-a-long.

Chain Falls and Come-A-Longs

- Never put on a load heavier than the capacity of the chain fall or come-a-long. Equipment will be equipped with an automatic load brake to prevent load from dropping. Load brake will be the fail-safe type.
- Never leave a load suspended by chain falls or come-a-longs for any length of time, whenever possible.
- Never wrap the load chain around the load.
- Never hook the load on the end of the hook; always hook it in the center.
- Never stand or have any part of the body below a load suspended on a chain fall or come-a-long.
- Inspections, in addition to before each use, must be made at least annually (certification) and recorded for filing.

Inspections

- Rigging equipment will be inspected by the user before each use and as necessary during its use to ensure that it is safe. Defective rigging equipment will be removed from service immediately and be repaired or destroyed.
- All rigging equipment including, but not limited to, slings (wire and nylon), chain-falls, come-a-longs, spreaders, lifting beams, etc., shall be inspected on a regular basis by a qualified person. Defective rigging equipment will be tagged "*DO NOT USE*" and removed from service immediately and be repaired or destroyed.

Rigging Inspection Report

INSPECTION OF RIGGING HARDWARE

INSPECTION FREQUENCY

- ✓ A VISUAL INSPECTION SHALL BE COMPLETED BY THE USER OR COMPETENT PERSON PRIOR TO USE.
- ✓ A PERIODIC INSPECTION SHALL BE COMPLETED BY A DESIGNATED COMPETENT PERSON, AT LEAST ANNUALLY.
- ✓ WRITTEN RECORDS ARE NOT REQUIRED.

REMOVE FROM SERVICE CRITERIA

- MISSING OR ILLEGIBLE MANUFACTURER'S NAME OR TRADEMARK AND/OR RATED LOAD CAPACITY (OR SIZE AS REQUIRED)
- A 10% OR MORE REDUCTION OF THE ORIGINAL DIMENSION
- BENT, TWISTED, DISTORTED, STRETCHED, ELONGATED, CRACKED OR BROKEN LOAD BEARING COMPONENTS
- EXCESSIVE NICKS, GOUGES, PITTING AND CORROSION
- INDICATIONS OF HEAT DAMAGE INCLUDING WELD SPLATTER OR ARC STRIKES, EVIDENCE OF UNAUTHORIZED WELDING
- LOOSE OR MISSING NUTS, BOLTS, COTTER PINS, SNAP RINGS, OR OTHER FASTENERS AND RETAINING DEVICES
- UNAUTHORIZED REPLACEMENT COMPONENTS OR OTHER VISIBLE CONDITIONS THAT CAUSE DOUBT AS TO THE CONTINUED USE OF SLING

ADDITIONALLY INSPECT WIRE ROPE CLIPS FOR:

- INSUFFICENT NUMBER OF CLIPS
- INCORRECT SPACING BETWEEN CLIPS
- IMPROPERLY TIGHTENED CLIPS
- INDICATIONS OF DAMAGED WIRE ROPE OR WIRE ROPE SLIPPAGE
- IMPROPER ASSEMBLY

ADDITIONALLY INSPECT WEDGE SOCKETS FOR:

- INDICATIONS OF DAMAGED WIRE ROPE OR WIRE ROPE SLIPPAGE
- IMPROPER ASSEMBLY

ADDITIONAL REMOVE FROM SERVICE CRITERIA

- ANY VISIBLY OR APPARENT BEND OR TWIST FROM THE PLANE OF THE UNBENT HOOK
- ANY DISTORTION CAUSING AN INCREASE IN THROAT OPENING OF 5%, NOT TO EXCEED ¼"
- MISSING OR ILLEGIBLE RATED LOAD CAPACITY
- MISSING OR ILLEGIBLE HOOK MANUFACTURER'S IDENTIFICATION OR SECONDARY MFG. IDENTIFICATION

INSPECTION OF SLINGS

INSPECTION FREQUENCY

- ✓ A VISUAL INSPECTION FOR DAMAGE SHALL BE COMPLETED BY THE USER OR COMPETENT PERSON PRIOR TO USE.
- ✓ A COMPLETE INSPECTION FOR DAMAGE SHALL BE COMPLETED PERIODICALLY BY A COMPETENT PERSON, AT LEAST ANNUALLY.
- ✓ WRITTEN RECORDS OF MOST RECENT PERIODIC INSPECTION SHALL BE MAINTAINED.

REMOVE FROM SERVICE CRITERIA

- MISSING OR ILLEGIBLE SLING IDENTIFICATION; EVIDENCE OF HEAT DAMAGE; SLINGS THAT ARE KNOTTED; FITTINGS THAT ARE PITTED, CORRODED, CRACKED, BENT, TWISTED, GOUGED, OR BROKEN; OTHER CONDITIONS, INCLUDING VISIBLE DAMAGE, THAT CAUSE DOUBT AS TO THE CONTINUED USE OF THE SLING

WIRE ROPE SLINGS	CHAIN SLINGS	WEB SLINGS	ROUND SLINGS
• EXCESSIVE BROKEN WIRES, FOR STRAND-LAID AND SINGLE PART SLINGS, 10 RANDOMLY DISTIBUTED BROKEN WIRES IN ONE ROPE LAY OR 5 BROKEN WIRES IN ONE STRAND IN ONE ROPE LAY • SEVERE LOCALIZED ABRASION OR SCRAPPING, KINKING, CRUSHING, BIRDCAGING • ANY OTHER DAMAGE RESULTING IN DAMAGE TO THE ROPE STRUCTURE • SEVERE CORROSION OF THE ROPE OR END ATTACHMENT	• CRACKS OR BREAKS • EXCESSIVE WEAR, NICKS OR GOUGES • STRETCHED CHAIN LINKS OR COMPONENTS • BENT, TWISTED OR DEFORMED CHAIN LINKS OR COMPONENTS • EXCESSIVE PITTING OR CORROSION • LACK OF ABILITY OF CHAIN OR COMPONENTS TO HINGE FREELY • WELD SPLATTER	• ACID OR CAUSTIC BURNS • MELTING OR CHARRING OF ANY PART OF THE SLING • HOLES, TEARS, CUTS OR SNAGS • BROKEN OR WORN STITCHING IN LOAD BEARING SPLICES • EXCESSIVE ABRASIVE WEAR • DISCOLORATION AND BRITTLE OR STIFF AREAS ON ANY PART OF THE SLING, WHICH MAY MEAN CHEMICAL OR ULTRAVIOLET/SUNLIGHT DAMAGE	• ACID OR CAUSTIC BURNS • EVIDENCE OF HEAT DAMAGE • HOLES, TEARS, CUTS OR ABRASIVE WEAR OR SNAGS THAT EXPOSE THE CORE YARNS • BROKEN OR DAMAGED CORE YARNS • WELD SPLATTER THAT EXPOSES CORE YARNS • DISCOLORATION AND BRITTLE OR STIFF AREAS ON ANY PART OF THE SLINGS, WHICH MAY MEAN CHEMICAL OR OTHER DAMAGE

Rigging Inspection Report

Chain Sling Inspection Report

Date	Size & Capacity	Type	Length	Serial #	OKAY	REPAIR	REPLACE	Burns	Cut	Corrosion	Worn/Gouged	Stretched	Bent/Twisted	Weld Splatter	Damaged Fittings	Missing/Illegible Tag	Remarks

Inspected By: _____

Fleet Safety Program

Purpose

The purpose of this program is to provide guidance for the safe operation and control of motor vehicles. This program will also provide guidance for the protection of liability from vehicle accidents.

Company vehicles are provided to support business activities and are to be used only by qualified and authorized employees. They are not to be considered a part of an employee's compensation and must not be used as an inducement for employment.

Responsibilities

Penn Installations is responsible for providing the tools and resources necessary to implement this program and for ensuring that the provisions in this program are being followed by all employees.

Program Administrator:

- Ensure all qualified drivers are trained in the safe operation of company vehicles.
- Monitor drivers to ensure compliance with all elements of this program.
- Review and update this program for compliance to new rules, regulations and laws.
- Maintain an accurate qualified drivers list.
- Maintain accurate substance abuse testing records.
- Train employees on proper accident reporting procedures.
- Respond to incidents, investigate and remove hazards.

Fleet Manager:

- Train employees on preventative maintenance and vehicle inspection.
- Selection/procurement of all company vehicles.
- Maintain active insurance policies, registrations, and state inspections.
- Document and file all maintenance and repair records of company vehicles.
- Maintain company vehicles in a safe mechanical condition.
- Respond to vehicle inspection report deficiencies and repair in a timely manner.
- Approve authorized employees to operate company vehicles.

Driver/Operator:

- Pass alcohol/drug test.
- Wear Seatbelts (all occupants).
- Obey all motor vehicle laws.
- Report all accidents and information to your Supervisor.
- Parking and moving violations are sole responsibility of operator.
- Report all moving violations to your Supervisor.
- Ensure vehicle or equipment is properly maintained and clean at all times.
- Ensure all loads are loaded, secured, and flagged (when necessary) properly.
- Abide by Penn Installations Cell Phone Policy. Use of hands free devices only.

All traffic citations are sole responsibility of the driver, except for citations which resulted from faulty equipment. Penn Installations is not responsible for traffic citations from speeding, reckless driving, etc. which are directly under control of the operator. Failure to report violations will result in appropriate disciplinary action.

Vehicle Use

Company drivers and employees authorized to operate a company vehicle must have a valid driver's license issued in the state of residence for the class of the vehicle being operated and must be able to drive a vehicle. Obtaining a driver's license is a personal expense.

Company vehicles are provided for business purposes only. Personal use is not permitted.
Personal vehicles used for company business is strictly prohibited.

As a driver of a company vehicle, the authorized employee has been given certain privileges. He/she assumes the duty to obey all motor vehicle laws, properly maintain the vehicle at all times and otherwise follow the policies and procedures outlined below.

Qualifications

Driver qualifications are as follows:

- Authorized employee of Penn Installations.
- Must be at least 21 years of age.
- Have at least one year of experience in the class of vehicle that will be operated.
- Must meet licensing requirements.
- Employees may not qualify for a company vehicle if the driver has had any of the following experiences:
    a. Convicted of a felony.
    b. Convicted of selling, distributing, handling, or use of drugs.
    c. Cancellation, Declination, or un-renewed automobile insurance by a company
    d. Convicted of an alcohol or drug-related offense while driving.
    e. Suspended or Revoked driver's license
    f. Convicted of three or more speeding violations or one or more other serious violations
    g. Involved in two or more chargeable accidents.

Motor Vehicle Record (MVR)

It is Company policy and a requirement for employment, that every employee position with driving duties requires motor vehicle record (MVR) meeting company standards. This MVR policy applies to all drivers/operators of company owned vehicles.

MVRs will be examined prior to the start of employment and at least annually thereafter. Any job offer made to an employee-candidate for a position with driving duties shall be contingent upon an MVR meeting the required standards; continued employment in a position with driving duties also requires an MVR meeting the standards outlined below.

The standards for MVRs are as follows:

1. All drivers must have a valid driver's license for at least three years.
2. No new driver will be hired with a borderline or poor MVR.

3. Driving records must remain acceptable or clear for continued employment in positions with driving duties.

Any exceptions to these guidelines must be referred to senior management for written approval. The auto insurance carrier will be consulted on any/all MVRs not meeting the minimum criteria.

Examples of minor and major violations that affect an employee's MVR are listed in the table below:

Minor Violations:	Major Violations:
• Motor vehicle equipment, load or size requirement • Improper/failure to display license plates • Failure to sign or display registration • Failure to have driver's license in possession (if valid license exists) • Minor moving violations	• Driving under influence of alcohol/drugs • Failure to stop/report an accident • Reckless driving/speeding contest • Driving while impaired • Making a false accident report • Homicide, manslaughter or assault arising out of the use of a vehicle • Driving while license is suspended/revoked • Careless driving • Attempting to elude a police officer • Hit and run • Speeding in excess of 10 mph over posted limit

Seat Belts

The driver and all occupants are required to wear seat belts when the vehicle is in operation or while riding in a company vehicle. The driver is responsible for ensuring passengers wear their seat belts.

Impaired Driving

The driver must not operate a vehicle at any time when his/her ability to do so is impaired, affected, or influenced by alcohol, illegal drugs, prescribed or over the counter medication. Drivers must also never operate a vehicle when an injury, illness, or fatigue impairs their ability to drive.
If a driver uses a drug identified in 21 CFR 1308.11 (391.42(b)(12)) or any other substance such as amphetamine, a narcotic, or any other habit forming drug, the driver is medically unqualified.

Distracted and Aggressive Driving

Drivers must abide by the federal, state and local motor vehicle regulations, laws and ordinances. At no time, shall an employee operate a company vehicle while distracted. Full attention and focus while driving is important in order to prevent accidents. All electronic devices shall be hands free and not distract the operator from their driving tasks. Aggressive driving is also strictly prohibited. All posted traffic signs must be followed and defensive driving techniques used. Safe following distances behind other vehicles must also be maintained to allow for sudden stopping.

Commercial Driver's License (CDL) Operators

- All employees operating vehicles over 26001 GVW must have a copy of their CDL and Medical Card on file.
- CDL is NOT valid without a current medical card.

- Be physically and mentally qualified to drive a commercial motor vehicle and possess a valid medical certificate as defined in 49 CFR Part 391.
- Possess a current and valid commercial driver's license and proper endorsements for the type of commercial vehicle to be driven.
- Must not be disqualified to drive a commercial motor vehicle under the rules and regulations set forth in 49 CFR Part 391.15.
- Meets all of the requirements and able to perform all of the tasks and essential duties of the job description.

Compliance, Safety and Accountability Program (CSA)

The Federal Motor Carrier Safety Administration's Compliance, Safety and Accountability Program (CSA) track violations by Penn Installations DOT number. When a driver receives a citation for a moving violation, hours of service, vehicle maintenance or cargo securement, the law enforcement official will check the CSA database to review the safety record of our company. It is very important that each driver understands how their driving affects not only their safety record, but the company as well. The Program Administrator will review the CSA safety report as needed, and address areas where safety has diminished across the company. This may result in additional safety training or changes in drivers' statuses.

Vehicle Accidents

Every vehicle accident and near miss must be reported and investigated. The primary purpose of this reporting and investigating process is not to find fault, but to determine the root cause so that corrective actions can be made in order to eliminate future incidents.

In the event of a vehicle accident:

- If possible, move vehicle to a safe location out of the way of traffic.
- Call the police if injuries are involved. You may want to call police even if there are no injuries.
- Be polite and never argue with other drivers, witnesses, or police.
- Do not admit negligence or liability. Never apologize as it can be interpreted as admission of fault.
- Do not attempt settlement, regardless of how minor.
- Get name, address and phone number of all parties involved in accident, injured persons, and witnesses if possible.
- Exchange vehicle identification, insurance company name and policy numbers with the other driver.
- Take photographs of the scene of accident if possible.
- Never make a statement to the media or discuss details of the incident with anyone other than a representative of Penn Installations.
- Complete an accident report as soon as possible while information is still fresh in your memory
- Make detailed sketches/drawings of the accident scene noting the direction of travel for each vehicle involved.
- Turn all information over to your Supervisor within 4 hours.
- Safety Director must be notified of all vehicle incidents.

Vehicle and Equipment Maintenance

Authorized drivers shall ensure their vehicle is properly maintained at all times. Any vehicles with a defect that would inhibit safe operation during current and foreseeable weather and lighting conditions

shall not be operated. Preventive maintenance such as regular oil changes, lubrication, tire pressure, and fluid checks determine to a large extent, whether you will have a reliable, safe vehicle to drive and support work activities. You should have preventive maintenance completed on your vehicle as required in the owner's manual. Vehicle manufacturer's manuals are an important part of the vehicle maintenance plan as they define specific maintenance intervals by the manufacturer. If preventative maintenance services are not being done according to the guidelines of the manufacturer, the company may jeopardize any claim to a warranty. Preventative maintenance is performed on a mileage or time basis. Typical preventative maintenance includes oil/filter changes, lubrication, tightening belts and components, engine tune-ups, brake work, tire rotation, hose inspection/replacement and radiator maintenance. Maintenance shall be performed by the Maintenance Department or an authorized service provider. All documentation of preventative maintenance and any other work performed on a vehicle shall be kept and turned into the Fleet Manager.

Vehicle repairs or service in excess of $100 must have prior approval by the Fleet Manager.

Equipment

All equipment operators shall complete an equipment inspection report at the start of the shift. Preventative maintenance shall be performed in accordance with the manufacturers service manual. Any defects or deficiencies found during an inspection that affect safe operation shall be documented and repaired before operation of the equipment. Job Superintendents will review and return all inspection reports to the main office.

State Inspections

- Trucks 26001 GVW are inspected semi-annually
- Light trucks and small vehicles are inspected annually
- All inspections are done at a Certified Inspection Station.

Vehicle Inspections and Reports

Vehicle

- Driver's Vehicle Inspection Reports will be filled out for all vehicles requiring a CDL to operate at the start of a shift and in accordance with 49 CFR Part 396.
- Drivers Daily Log will be filled out for vehicles involved in interstate or intrastate commerce and weighing at least 10,001 pounds in accordance with 49 CFC Part 395.
- At the end of the shift Driver's Vehicle Inspection Reports will be turned in to their immediate Supervisor.
- The Supervisor will review and fax reports to main office by next working morning.
- Fleet Manager will review and assign mechanics for proper repairs.
- All defects or deficiencies found must be certified as repaired or corrected and documented in the vehicles file.

Drivers

Drivers must know the proper starting, shifting, and braking procedures to extend the life of the vehicle and must be vigilant in reporting his/her observations. No vehicle should be placed into service low on oil, antifreeze, transmission fluid, power steering fluid, or brake fluid. Windshield washer fluid must also be checked and filled. Drivers should be alert for unusual noises, bad tires, poor brakes, and clutch adjustments. All drivers should be completely familiarized with the vehicle including engine compartment, driver controls, and passenger safety devices. Drivers should be trained to recognize unusual noises and describe basic mechanical problems to their supervisor.

Pre/Post Trip Inspections

An important aspect of preventative maintenance is the establishment of strong communication between drivers and management. An easy way to ensure and document this communication link is through the use of the driver's daily vehicle inspection checklist that is either pre-trip or post-trip inspection. The driver should identify any defects and report them to their immediate supervisor. All defects or deficiencies found must be certified as repaired or corrected and documented in the vehicles file. All inspection checklists are to be maintained in the vehicles permanent file. The pre- and post-trip inspections forms shall be legibly completed and signed by the vehicle driver.

Electronic Logbooks/Vehicle Inspections

Electronic logbooks and vehicle inspections are used by commercial drivers who in the past were required to keep paper records of driver status in eight or more days out of every thirty days driving. This requirement has been mandated by the Federal Motor Carrier Safety Administration (FMCSA) and is currently being implemented at Penn Installations Our employees required to abide by this mandate have received training and proper electronic devices for their use. All pre- and post-trip inspections and logbook information for these employees is documented using the electronic devices and can be viewed by DOT officials on the electronic device itself or at the home office by accessing the management software that also records the information.

Cargo Securement

Cargo securement is extremely important to the safety of the driver, his or her vehicle and other vehicles using the road. Loads must be properly secured and tied-down when transporting any distance. Loads should be examined within the first 50 miles of initial transport and again at all following stops. All tie-downs, tarps, doors, hatches, blocks/chocks, straps/chains/binders, placards, lights, etc. are to be verified as secure, meaning they cannot damage the cargo or come loose and fall from the vehicle.

Driver Training

All drivers for Penn Installations must be qualified and meet requirements set forth in this program. During orientation, employees whose duties require them to operate passenger vehicles will be introduced to all documents, rules, procedures, and policies, many of which are included in this program, which will allow them to safely operate company passenger vehicles.

Commercial Drivers will be required to demonstrate their abilities in addition to the necessary requirements for CDL drivers that are set forth in this program. Commercial Drivers will demonstrate their abilities by performing the necessary functions while the Fleet Manager, or designee, rides along/evaluates in the vehicle or by observation. This will give the Fleet Manager, or designee, and opportunity to examine the new driver's skills and also give proper training while on the job. During this period the driver is considered a probationary employee. This ride along/training can be conducted as long as the Fleet Manager, or designee, deems necessary. Upon completion of this training, the Fleet Manager, or designee, will make a recommendation or determination to either retain or release him or her.

Employees shall be trained on the contents of this program during new hire orientation, upon violating any part of this program and when any changes to this program are made or a supervisor deems necessary.

When any driver of a company vehicle fails to comply with any part of the Fleet Safety Program they will be re-trained, suspended, or terminated based on the severity of the non-compliance.

Acknowledgment and Consent Agreement

I have read, or have been read to me, the entire contents of Penn Installations Fleet Safety Policy and I agree to comply with all requirements. I have been given an opportunity to ask questions and fully understand the meaning of the policy. Additionally, I understand that I should contact a company supervisor should I have any future questions or concerns. By signing below, I acknowledge having receipt of this policy and consent to agree to abide by the contents.

Name (print)_____

Signature_____ Date:_____

Penn Installations

Equipment Inspection Report

(Use for Backhoe, Skid Steer, Forklift, Loader, Etc.)

Operator's Name:	Machine Type:	Date:
Job Location:	Equipment #:	Hour Meter:

✓ Each Box

D = Deficient (Do Not Operate) R= Repair S = Satisfactory N/A = Not Applicable

BODY:	S	R	D	N/A
Annual Inspection				
Safety Decals				
Operator's Manual				
Lights/Beacon				
Fire Extinguisher				
Glass/Windows				
Mirrors				
Safety Bars (Lockout)				
Access-Steps/ Non skid				
Grab Handles				
Roll Over Protection (ROPS)				
Lifting Capacity/Load Chart				
Boom Angle Indicator				
Track/Tire Condition				
Hyd. Control Valve and Cylinders				
COMPONENTS:				
Fuel Level				
Brake Fluid				
Hydraulic Fluid				
Oil Level				
Transmission Level				
Engine Coolant Level				
Exhaust Scrubber				
OPERATION:				
Back-up Alarm				
Horn				
Breaks (Parking)				
Breaks (Service)				
Seat Belts/Seat Bar				
Gauges/Switches				
Battery				
Operator Controls				

SYSTEMS CHECK:	S	R	D	N/A
Engine System				
Cooling System (Hoses, Water)				
Air Induction System				
Fuel System				
Electrical Systems				
Exhaust System				
Hydraulic System				
Frame / Sheet metal				
Steering Clutches				
Control Levers				
Rollers and Sprockets				
Blade and Cutting Edge				
Emergency Stops				

Comments: _____

	Return to Vendor
	Awaiting Repair
	Tagged Out

Supervisor Name: _____ **Date:** _____

Concrete Work

Purpose

This procedure provides guidelines for the safe placement of materials and work associated with concrete work.

General

- All equipment and materials used in concrete construction and masonry work shall meet the applicable requirements for design, construction, inspection, testing, maintenance and operations.
- 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.
- Employees shall not be permitted to apply cement, sand and water mixture through a pneumatic hose unless they are wearing protective head and face equipment.
- Employees shall not be permitted to work above vertically protruding reinforcing steel unless it has been protected to eliminate the hazard of impalement.
- Wire mesh rolls shall be secured at each end to prevent dangerous recoiling action.
- When discharging on a slope, the wheels of ready-mix trucks shall be blocked and the brakes set to prevent movement.
- Handles of bull floats, used where they may contact energized electrical conductors, shall be construed of non-conductive material or insulated with a non-conductive sheath which electrical and mechanical characteristics provide the equivalent protection of a handle constructed of non-conductive material.
- 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).
- All trucks shall be directed by a designated signal person when backing up.

Cast-in-Place Concrete

- Formwork 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.
- Drawings and plans, including all revisions for the jack layout, formwork (including shoring equipment), working decks and scaffolds, must be available at the jobsite.
- 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.
- Shoring equipment found to be damaged must not be used for shoring. Erected 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.
- If single-post shores are used for on top of another (tiered), then additional shoring requirements must be met. The shores must be:

    - Designed by a qualified designer and the erected shoring must be inspected by an engineer qualified in structural design;
    - Vertically aligned;
    - Spliced to prevent misalignment; and
    - Adequately braced in two mutually perpendicular directions at the splice level. Each tier also must be diagonally braced in the same two directions.
- Adjustment of single-post shores to raise formwork must not be made after the placement of concrete.
- 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.
- The steel rods or pipes on which jacks climb or by which the forms are lifted must be (1) specifically designed for that purpose and (2) adequately braced where not encased in concrete. Forms must be designed to prevent excessive distortion of the structure during the jacking operation.
- Jacks and vertical supports must be positioned in such a manner that the loads do not exceed the rated capacity of the jacks.
- 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.
- The form structure must be maintained within all design tolerances specified for plumbness during the jacking operation. The predetermined safe rate of lift must not be exceeded.
- All vertical slip forms must be provided with scaffolds or work platforms where employees are required to work or pass.
- Reinforcing steel for walls, piers, columns and similar vertical structures must be adequately supported to prevent overturning and collapse.
- 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:
    - The plans and specifications stipulate conditions for removal of forms and shores, and such conditions have been followed, or
    - The concrete has been properly tested with an appropriate 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.
- 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.

Precast Concrete

- Precast 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.
- Lifting inserts that are embedded or otherwise attached to tilt-up wall panels must be capable of supporting at least two times the maximum intended load applied or transmitted to them; lifting inserts for other precast members must be capable of supporting 4 times the load.
- Employees are not permitted under precast concrete that is being lifted or tilted into position.

Masonry Construction

- Whenever a masonry wall is being constructed, a limited access zone will be established prior to construction meeting the following requirements;
    - Equal to the height of the wall to be constructed plus 4 feet, and shall run the entire length of the wall;
    - Shall be located on the side of the wall that will be unscaffolded;
    - Restricted to entry only by employees actively engaged in constructing the wall; and
    - 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 unsupported, in which case, it must be braced. The bracing must remain in place until permanent supporting elements of the structure are in place.

Fall Protection

Employees working on rebar walls, piers and on concrete form walls must have fall protection 100% of the time they are 6 feet above the ground. The use of retractable lifelines, static lifelines and rope grabs or the use of double lanyards may achieve this fall protection. Personnel working on rebar or formed walls and elevated piers generally require a work positioning lanyard (cannot be used for fall protection) and a fall protection lanyard. On vertical rebar walls, the safety lanyard shall be secured at a point above the workers head, either to a lifeline or a horizontal section of rebar.

- Employees working more than six feet above any adjacent working surfaces, placing and tying reinforcing steel in walls, columns, etc., shall be provided with fall protection.
- Large throat opening snap hooks (rebar or ladder hooks) are for positioning only and must be used with a shock absorbing lanyard and locking snap hook for fall protection. Using both while climbing is required to accomplish 100% fall protection.

Heat and Cold Stress

Purpose
This procedure explains how to recognize and prevent disorders that occur from working in hot and cold work environments.

General
Heat stress generally describes the effect of heat, from any source, on the organs of the body and the person as a whole. The stresses of heat on the body manifest themselves in five common ailments: heat exhaustion, heat cramps, heat stroke, heat syncope, and heat rash. Cold stress describes serious cold related illnesses and injuries that can occur when the body is unable to warm itself. Hypothermia and frostbite are examples of cold related hazards that can result from exposure to cold temperatures.

Responsibilities
Superintendent - Once heat/cold levels become higher or lower than recommended levels, for whatever reason, natural weather conditions or mechanical heat sources, the superintendent should develop a heat/cold stress management plan for the project.

The plan should contain the following data:

- Expected temperatures in the workplace based upon environmental factors such as air temperature, relative humidity, air velocity and thermal radiation.
- Based upon temperatures, the amount of work time versus rest periods, with work periods reducing while rest periods increase as temperature rises or drops.
- A medical monitoring program for those people exposed to heat or cold stress and those highly susceptible to heat stress
- The plan should include:
    - A cooler than ambient temperature rest location, delivery of iced drinking water and a plan for replenishment salt within the body or
    - A warmer temperature shelter location, warm fluids, and dry clothing
- An emergency plan for handling heat stroke and severe heat exhaustion or cold stress and frostbite injury.
- A plan to engineer out the sources of heat, cold or wind chill by shielding, insulating or mechanical methods of reducing heat or increasing air velocity.

Heat Stress
Heat stress is due primarily to sustained exertion in a warm or hot environment. The following factors may contribute to an individual's susceptibility to heat stress:

- personal physical fitness
- degree of acclimatization
- the rate at which water and salt that are lost through perspiration are replenished
- recent alcohol intake
- dehydration
- obesity
- medication such as diuretics, sedatives, tranquilizers, anticholinergic, drugs and some heart and blood pressure medicines

The potential for heat stress is greatest when working for long periods near heat sources, or when a worker is required to wear protective clothing for extended periods. During hot weather, the potential for heat stress is present in any non air-conditioned work location where temperatures exceed 85°F.

Recommended Heat Stress Action Levels

When heat stress conditions exceed the limits shown in the Temperature Action Levels, adhere to action recommendations. When other conditions take effect, such as employee physical condition; or when heavier clothing is worn, consult a physician.

Personal Protective Equipment (PPE)

Workers should wear clothing with adequate air and vapor permeability. When workers are required to wear clothing that does not have adequate air and vapor permeability, such as Nomex® clothing then the recommended limits may be too high.

Vests that can be cooled with ice or circulating water may be used for employee cooling purposes when excessive heat exposures are present. Vortex cool/heat devices are also recommended for use during jobs in hot or cold environments.

Engineering Controls

The type and amount of clothing worn can control convective heat gain, which occurs when air temperature exceeds skin temperature. Clothing affects the exchange of heat between the body and the environment.

The following can reduce radiative heat gain, which occurs when the temperature of surrounding solid objects exceeds skin temperature:

- placing shields or barriers that are radiant reflective or heat absorbent between the source of radiant heat and the worker
- isolating the source of radiant heat
- modifying an operation or process

Evaporative heat loss, which occurs when the body loses excess heat through evaporation, can be increased by the following means:

- increasing air movement around the worker by fan or some other means of ventilation
- reducing the humidity (water vapor content) in the air by air conditioning
- selecting worker clothing with the proper air and water vapor permeability

Administrative Controls

When engineering controls are inadequate or not feasible, work modifications and hygienic practices must be introduced to control exposures to both environmental and metabolic heat. The following examples of preventive work and hygienic practices have proven to be effective for reducing heat stress:

- limiting the time a worker spends in a hot environment through implementation of a work/rest cycles
- reducing the metabolic demands of the job through procedures such as mechanization, use of special tools, or increase in the number of workers per task
- raising heat tolerance through either a heat acclimatization or an increase in physical fitness
- training supervisors and workers to prevent heat stress conditions, to recognize the early symptoms of heat illnesses, and to administer first aid procedures

- Implementing a buddy system in which workers must observe fellow workers for the early symptoms of heat stress such as weakness, unsteady gait, irritability, perspiration levels, disorientation, or changes in skin color.
- Providing adequate amounts of cool (50 to 59°F), potable water near the work area and encouraging all workers to drink one cup of water every 15 to 20 minutes.

Information and Training

All un-acclimatized workers who work in areas where there is a likelihood of heat injury or illness must participate in continuing safety and health education programs that keep them informed on the following topics:

- heat/stress hazards
- signs and symptoms of heat injury and illness
- heat stress prevention and first aid procedures
- work practices and control procedures that protect the health and safety of workers, including reporting the development of heat stress symptoms
- the effects of therapeutic drugs, over-the-counter medications, and alcohol, which may reduce heat tolerance and increase the risk of heat injury or illness
- proper use of protective clothing and equipment

Cold Stress

Cold stress occurs when deep body temperature falls below 97°F. To protect all parts of the body, especially the head, hands and feet, from cold injuries, deep body temperature (or core temperature) must not drop lower than 95°F during any single exposure to a cold environment.

Unless there are unusual circumstances, cold injury, except to the head, hands or feet, will usually be accompanied by the initial signs of hypothermia.

Wind Chill Factor

The cooling effect of any combination of temperature and wind velocity or air movement is represented by the Wind Chill Factor. The Wind Chill index, a tabulation of the chill factors, can be utilized to determine the Equivalent Chill Temperature (ECT).

When referring to temperature, use the Wind Chill Index to determine the ECT.

Cold Protective Clothing and Equipment

Employees working in air temperatures below 40°F must wear dry, insulating clothing to help maintain a core temperature above 97°F. Wind chill cooling rate and the cooling power of air are critical factors that may affect the workers' ability to maintain this core temperature.

Do not expose skin for prolonged periods when the Equivalent Temperature is less than 26°F. Superficial or deep, local tissue freezing may occur at temperatures below 30°F, regardless of wind speed.

At air temperatures of 36°F or less, workers who become immersed in water or whose clothing becomes wet must be provided an immediate change of clothing and be treated for hypothermia.

When employees work at temperatures below 0°F, work/warm-up ratios should be considered.

Special protection for the hands is required, according to the following criteria, in order to maintain manual dexterity:

- When intricate work is being performed bare-handed for more than 10-20 minutes in temperatures below 61°F, use special equipment to keep the workers' hands warm, such as warm-air jets, radiant heaters, or contact warm plates.
- When fine manual dexterity is not required, workers must wear gloves in the following situations:
    - For sedentary work in temperatures below 61°F
    - For light work in temperatures below 39°F
    - For moderate work in temperatures below 19°F

To prevent contact frostbite, workers must observe the following precautions:

- Wear gloves when working with objects that have a surface temperature of less than 19°F. The supervisor must warn each worker against inadvertent contact between cold surfaces and bare skin.
- Wear mittens when working in air temperatures of 0°F or less. Machine controls and tools used in cold conditions must be designed for use without removing the mittens.

Workers with circulatory problems must take special precautions to protect against cold injury. Two such precautionary measures are the use of additional insulating clothing and a reduction of exposure. Determine the precautionary measures that are necessary on the basis of the worker's physical condition and the advice of a physician who is knowledgeable about cold stress.

Work and Hygiene Practices

When working continuously in an equivalent temperature of 19°F or below, heated warming shelters should be made available nearby. Workers should be encouraged to use these shelters at regular intervals, the frequency of which will depend on the severity of the environmental exposure.

When employees work at temperatures below 0°F, consider using a work warm-up regime.

When entering the heated shelter, workers should remove outer layers of clothing and either loosen remaining clothing to permit sweat evaporation or change into dry work clothing.

Dehydration occurs insidiously in cold environments. It may cause a significant change in blood flow to the extremities, and may therefore increase the susceptibility of workers to cold injury. Workers should drink warm, sweet drinks and soups during breaks.

In work environments at or below 10°F, observe the following practices:

- Keep workers under constant observation, through either the buddy system or supervision.
- Maintain a work rate that does not cause heavy sweating and result in wet clothing. If heavy work must be done, provide rest periods in heated shelters and the opportunity to change into dry clothing.
- Include the weight and bulkiness of protective clothing when estimating a worker's required work performance and the weights he or she may lift.
- Minimize work in stationary positions for long periods of time, and protect workers from drafts as much as possible.

Training

Workers who work in areas where there is a likelihood of cold injury must participate in continuing safety and health education programs that keep them informed on the following topics:

- re-warming procedures
- first-aid treatment
- protective clothing practices
- eating and drinking habits
- recognition of frostbite
- recognition of the symptoms of hypothermia and excessive body cooling, even when shivering does not occur
- safe work practices

Temperature Action Levels

Temperature Action Levels		Hazard	Action
F	C		
*Body Core			
> 98.6	>37	Entering above normal temperature zone. Increased risk of heat related injury.	Implementation of work rest regime, heart rate monitoring, and training requirements including signs and symptoms of heat stress injury.
>100.4	>38	Workers are at risk of heat related injury. Exceeds upper limit for prolonged periods of work.	Self-determination by monitoring symptomatic behavior, body temperature and heart rate as determined by worker indoctrination training for heat related injuries.
>102.2	>39	Upper limit for short period exposure to work. Workers are at high risk of heat related injury.	Implement administrative controls such as work rest/ regime, frequent biological monitoring and extended rest periods. Maintain hydration by frequent intake of cool water every 15 minutes. .
>106	>41	Heat stroke, worker may experience mental confusion, convulsions, loss of consciousness, coma.	Seek medical attention immediately. Move victim to cool area apply cold compresses, wet clothing.
Ambient			
> 95	>35	Increased hazard for heat related injury. Dependent on level of work load, protective clothing requirements, and, physical condition of worker.	Reduce air temperature or provide air-conditioned rest area. Implement heat stress prevention methods, such as engineering controls, work rest regimen, biological monitoring, and training of workers to self determine signs and symptoms of heat stress. Cool drinking water (~50F) shall be made available at all times. Workers will be encouraged to drink at frequent intervals e at a
>104	>40	Workers obtain significant heat absorption from air at this temperature.	
> 110	>43.3		
>120	>48.8	Without the use of sophisticated PPE such as water cooled clothing, heat	Stop Work
Heart Rate (bpm) (Beats per Minute)			
>110		Starting 1 minute after rest period if heart rate exceeds 110 bpm worker is at risk of heat related injury.	Implement work rest regimen. Allow worker to work less and rest more.
>90		After 3 minutes after start of rest period, worker is at risk if above this action level. e	Implement work rest regimen. Allow worker to work less and rest more.
>160		Worker may ill or unable to acclimate. Very high risk to heat related injury.	Remove from work activity, evaluate demands of work

- ***Body core temperature can be obtained by adding 1 degree F and 0.5 degree C to oral temperature.***

Temperature Action Level		Hazard	Action
F	C		
61	**16**	Decreased dexterity	Provide hand-warming facilities.
50	**10**	Potential for Hypothermia.	Provide information and training to workers to include signs and symptoms of hypothermia, and PPE requirements.
45	**5**	Severe hypothermia hazard.	Implement PPE, and administrative protective measures
41	**5**	Increased cold stress hazard, potential for freezing of exposed flesh.	Implement hazard communication training for cold stress, and specific activity/location PPE requirements.
36	**2**	Wet clothing can cause severe cold stress symptoms.	Remove clothing immediately. Treat for hypothermia and frostbite. Move to warm
30	**-1**	Potential for skin to freeze if in contact with surfaces of this temperature. Some workers may not be able to acclimate at this temperature	Utilize proper hand protection. Medical restrictions may be required for workers who cannot thermoregulate.
19	**-7**	Frostbite may occur if working > 60 minutes.	Provide warming shelters, w/ hand-warming. Provide shielding to prevent air movement.
10	**-12**	Increasing cold stress danger. Flesh may freeze w/in I minute.	Implement additional training to include first aid, recognition and control of hypothermia and cold-related disorders.
1	**-17**	Extreme dexterity impairment, frostbite of exposed skin.	Mittens shall be worn to decrease potential of freezing flesh.
-11	**-24**	Workers with physical conditions or illnesses or other health conditions such as chronic disease may not acclimate, and may experience adverse reaction to working in these temperatures.	Workers cold stress tolerance should be evaluated prior to working prolonged periods of time in this temperature. Medical surveillance and worker qualification requirements may be required.
> -20	**> -29**	Extreme cold hazard. Flesh may freeze w/in 30 seconds	Stop work. Re-evaluate engineering and administrative controls. Implement severe cold weather PPE requirements. Consult with supervisor and Safety Coordinator.

<table>
<tr><th colspan="2">Body Core Temperature Action Level (Oral Temp + 1)</th><th>Hazard / Symptoms</th><th>Action to be Taken</th></tr>
<tr><th>F</th><th>C</th><td colspan="2">MILD HYPOTHERMIA</td></tr>
<tr><td>99 to 97</td><td>37 to 36</td><td>Normal temp to beginning of mild hypothermia. Shivering can begin.</td><td rowspan="2">Reduce heat loss; add additional layers of clothing, increase physical activity, and move to heated shelter. Avoid alcohol and caffeine, and tobacco. Increase liquids, and carbohydrates.</td></tr>
<tr><td>97 to 95</td><td>36 to 35</td><td>Mild Hypothermia. Increasing cold sensation, goose bumps, difficulty performing complex tasks w/hands. Shivering can become severe, hands can become numb.</td></tr>
<tr><td>95 to 90</td><td>35 to 32</td><td>MODERATE HYPERTHERMIA
Shivering, muscle coordination becomes difficult. Movements slow and labored, stumbling pace, mild confusion. Workers may appear alert.

Violent shivering, difficulty speaking, sluggish thinking. Memory loss, depression.</td><td rowspan="2">Transport victim immediately to emergency services. Make sure victim is dry. Due to re-warming victim may start to sweat; a polypropylene layer over skin will minimize this and prevent contact w/external moisture. Cover victim with wool blankets, and or clothing.

Give victim diluteD solution of warm sugar water or very dilute liquid Jell-O every 15-min. Apply heat to major arteries such as chemical heat packs, warm rocks, hot water bottles and/ or towels during transport to emergency services.</td></tr>
<tr><td>90 to 86

86 to 82</td><td>32 to 27</td><td>SEVERE HYPOTHERMIA

Shivering stops, exposed skin may be blue or puffy, poor muscle coordination, inability to walk, irrational behavior; Worker may be able to maintain posture and appearance of awareness.

Loss of awareness of others, muscle rigidity, pulse and respiration rate decreases potential heart fibrillation.</td></tr>
<tr><td>< 82</td><td>< 27</td><td>Life threatening. Victim can become unconscious, erratic heartbeat and respiration is often noted. Pulse may not be palpable. Victim can degrade to pulmonary edema, cardiac arrest, and respiratory failure.</td></tr>
</table>

Wind Chill Chart

Wind Speed (MPH)	Temperature (F)																	
Calm	40	35	30	25	20	15	10	5	0	-5	-10	-15	-20	-25	-30	-35	-40	-45
5	36	31	25	19	13	7	1	-5	-11	-16	-22	-28	-34	-40	-46	-52	-57	-63
10	34	27	21	15	9	3	-4	-10	-16	-22	-28	-35	-41	-47	-53	-59	-66	-72
15	32	25	19	13	6	0	-7	-13	-19	-26	-32	-39	-45	-51	-58	-64	-71	-77
20	30	24	17	11	4	-2	-9	-15	-22	-29	-35	-42	-48	-55	-61	-68	-74	-81
25	29	23	16	9	3	-4	-11	-17	-24	-31	-37	-44	-51	-58	-64	-71	-78	-84
30	28	22	15	8	1	-5	-12	-19	-26	-33	-39	-46	-53	-60	-67	-73	-80	-87
35	28	21	14	7	0	-7	-14	-21	-27	-34	-41	-48	-55	-62	-69	-76	-82	-89
40	27	20	13	6	-1	-8	-15	-22	-29	-36	-43	-50	-57	-64	-71	-78	-84	-91
45	26	19	12	5	-2	-9	-16	-23	-30	-37	-44	-51	-58	-65	-72	-79	-86	-93
50	26	19	12	4	-3	-10	-17	-24	-31	-38	-45	-52	-60	-67	-74	-81	-88	-95
55	25	18	11	4	-3	-11	-18	-25	-32	-39	-46	-54	-61	-68	-75	-82	-89	-97
60	25	17	10	3	-4	-11	-19	-26	-33	-40	-48	-55	-62	-69	-76	-84	-91	-98

Frostbite Times: ***30 Minutes*** ***10 Minutes*** ***5 Minutes***

Confined Space Entry Program

The purpose of this program is to ensure the protection of all employees of Penn Installations from hazards associated with confined space entry. This program will provide guidance, requirements, and procedures to protect employees from those hazards of entry into and work within confined spaces.

Responsibilities

Management

- Ensure compliance with this written procedure.
- Provide employees with necessary equipment to work inside confined spaces and to provide support to entry supervisors with site-specific planning.

Host Employer

The employer that owns or manages the property where the construction work is taking place must provide the following information to the Controlling Contractor:

- Location of each known permit space
- Hazards or potential hazards in each space
- Precautions already in place

Controlling Contractor

Employer that has overall responsibility for construction at the site must:

- Review host employers information about any identified hazards
- Provide information to each entering employer or others whose activities could create a hazard within the permit space

Entry Employer

Any employer who decides and or directs employees to enter a confined space, they must:

- Be aware of controlling contractors information
- Inform controlling contractor of the confined space program to be followed
- Prevent unauthorized entry
- Identify acceptable entry conditions
- Identify and evaluate hazards
- Provide entrants with an opportunity to observe testing and monitoring of the space
- Isolate hazards
- Provide corrective measures to eliminate hazards
- Train employees
- Develop rescue procedures

Entry Supervisor (Competent Person)

Prior to entry into a confined space, the supervisor will consult with the Safety Director to determine whether the confined space is a non-permit or permit-required confined space.

The supervisor who is directly responsible for the employees who work inside a permit confined space has the following responsibilities:

- Evaluate the work to be done and to know the hazards/potential hazardous conditions.
- Perform non-entry atmospheric testing with a calibrated instrument to determine if a hazardous atmosphere does not exist.
- Ensures all piping, mechanical or electrical equipment have been isolated and/or lockout tag out procedures have been accomplished.
- Assigns authorized (trained) attendants and entrants to perform the work.
- Verifies all authorized attendants and entrants understand company policy, procedures, and the nature of hazards of entry into the permitted confined space.
- Terminates entry upon completion of work, expiration of permit, or if a condition arises in or near the permit space that places the occupants at risk.
- Verifies that all confined space entry permit conditions have be fulfilled by signing the permit only when all acceptable entry conditions of been met.
- Ensures proper signage and the permit is posted at the entrance of the confined space.

Authorized Attendant (Hole Watch)

- All authorized attendants shall understand company policy, procedures and the nature of hazards of the entry into confined spaces and shall monitor only one confined space at a time. All attendants must be confined space trained.
- Control the area surrounding the space to prevent unauthorized entry and other activities near the confined space.
- Know the hazards that may be encountered during entry including signs or symptoms of any potential exposure.
- Maintains continuous count of authorized entrants in the confined space through the use of signing in and out on the confined space permit.
- Remains outside the confined space at all times and shall maintain communication with the entrants.
- Continuously monitor the air inside the space and document the atmospheric conditions on the entry permit.
- Immediately evacuates the confined space, when a condition arises in or near the confined space that places the occupants at risk.
- The attendant should NEVER enter a confined space to perform a rescue. The attendant shall summon help and proceed with rescue efforts from outside the confined space.

Authorized Entrants

- All authorized entrants shall understand company policy, procedures, and the nature of the hazards of entry into confined spaces.
- Follow all entry requirements and only perform work identified on the confined space entry permit.
- Will wear all required personal protective equipment and personal air monitoring devices as identified on the entry permit or required by the entry supervisor.

- Prior to entry, know the hazards that may be faced during entry, including information on the mode, signs and symptoms, and consequences of any possible exposure.
- Maintain communication with the authorized attendant.
- Evacuates the space immediately when notified by the authorized attendant or supervisor, if monitoring equipment alarms sound, equipment failure, warning signs and symptoms are noticed, or any other unanticipated dangerous situation develops.

Procedure

Space Clarification

All spaces shall be evaluated by the Entry Supervisor to determine the proper classification. The Entry Supervisor will assess the space to determine if it meets the criteria and definition of:

- Confined Space.
- Permit Required Confined Space.
- Non-Permit Required Confined Space.

Confined Space

All three (3) of the following must be met to define a Confined Space:

- Is large enough and so configured that an employee can bodily enter and perform assigned work; and
- Has limited or restricted means of access/egress; and
- Is not designed for continuous employee occupancy.

Permit Required Confined Space

The confined space has one or more of the following characteristics:

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

The superintendent is the Entry Supervisor responsible for authorizing entry into a Permit-Required Confined Space and issuing the Confined Space Entry Permit.

After completing the Confined Space Entry Permit, the Entry Supervisor will review the permit with the Authorized Attendant and Entrants to include space preparation, identifying hazards listed and their corrective actions, air monitoring, and obtaining all necessary signatures.

The Confined Space Entry Permit is only valid for the duration of the shift in which it was issued. The Confined Space Entry Permit shall be posted at the entrance of the confined space.

When a confined space is closed or unoccupied over a short period of time, such as lunch time or shift changes, atmospheric testing shall be conducted and documented prior to re-entry.

Air Monitoring
Air monitoring shall be completed prior to making entry and documented on the Confined Space Entry Permit. Continuous air monitoring shall be conducted and documented at least every two (2) hours.

Air monitoring shall be completed by the Authorized Supervisor or Attendant. Air monitoring equipment shall be calibrated and bumped prior to test for atmospheric conditions.

Ventilation
If unacceptable atmospheric conditions are detected around or in the confined space, forced air ventilation shall be initiated and continued until the hazardous atmosphere is eliminated or shall be used to maintain acceptable atmospheric conditions.

When ventilation methods are used:

- Ventilation shall be started prior to entry made into the confined space.
- Atmospheric conditions in the confined space shall be tested and be acceptable prior to making entry in the confined space
- Continuous air monitoring shall be conducted with readings documented at least every two (2) hours.
- The ventilation will be directed to the immediate work area.
- Ventilation shall continue until all Authorized Entrants exit the confined space.

Means of Access and Egress
When entrance covers are removed, the opening shall be promptly guarded by a railing, temporary cover, or other temporary barrier that will prevent an accidental fall through the opening and that will protect the Authorized Entrants from foreign objects entering the space.

Ladders, access and egress devices shall be designed and of appropriate length to allow for safe entry and egress of confined spaces. Entry and egress routes from confined spaces shall be maintained free of hazards.

Communications
An effective method of communication shall be established between the Authorized Attendant and Entrants. Communication must be maintained at all times. An effective method of communication can be visual, verbal or provided by electronic or mechanical devices. Failure in communication shall result in the evacuation of the confined space.

Emergency Response and Rescue
Ensure emergency response capabilities are available at the entry point of the confined space. Equipment selected shall be designed for non-entry rescue only.

Ensure a method is established to notify outside Emergency Services in the event of a confined space emergency.

Non-Permit Required Confined Space

The confined space does not contain or, with respect to atmospheric hazards, have the potential to contain any hazard capable of causing death or serious physical harm.

The superintendent is the Entry Supervisor responsible for authorizing entry into a Non-Permit Required Confined Space and issuing the Air Monitoring Log for Non-Permit Confined Spaces.

After completing the initial atmospheric testing, the Entry Supervisor will document the results on the Air Monitoring Log and review the permit with the Authorized Entrants to include space preparation, air monitoring, and obtaining all necessary signatures.

The Air Monitoring Log shall be posted at the entrance of the confined space.

When a confined space is closed or unoccupied over a short period of time, such as lunch time or shift changes, atmospheric testing shall be conducted and documented prior to re-entry.

The Authorized Entrant will sign in and sign out each time upon entering and exiting the confined space.

The Entry Supervisor shall determine and isolate all physical and atmospheric hazards. Any mechanical or electrical devices shall be locked out and tagged out before entry operations. The isolation of these hazards must be done from outside the space unless permit-required confined space operations are initially used to isolate hazards in the space. Documentation of all hazards isolated is required.

Rescue and Emergency Services

All personnel that perform a rescue from a confined or enclosed space shall be trained in the use of the equipment required to perform the rescue.

At no time shall a Penn Installations employee enter a confined space to attempt a rescue unless trained and authorized by Penn Installations Safety Director.

Two (2) types of rescue can be performed from a confined space:

Non-Entry Rescue

- Retrieval equipment shall be available at the confined space opening any time the space is occupied.
- Entrants in the confined space shall be made aware that a non-entry rescue is planned in the event of an emergency in the confined space.
- If an entrant is not responsive to communication with the attendant or is known to be unconscious, a non-entry rescue must be initiated immediately.

Entry Rescue

- Retrieval equipment shall be available at the space any time a confined space is occupied.
- The attendant shall remain at the entrance to a Permit Required Confined Space at all times during an entry rescue.
- The attendant shall provide rescue personnel entering the confined space with information regarding hazards, possible causes of the emergency and conditions within the confined space.

Rescue Teams

Rescues can be performed by either an on-site rescue team or an off-site rescue service. In either case, the Entry Supervisor must make sure that the rescue service is available to respond in a time to enable the injured worker to receive the needed medical attention in light of the hazards present in the permit space.

On-Site Rescue Team

- Must be trained on how to perform a rescue
- Have the necessary rescue equipment
- Be trained in First Aid and CPR
- Practice rescue at least once prior to entry and annually thereafter

Off-Site Rescue Service

- Must be informed of the hazards associated with the confined space
- Be able to respond in a timely manner
- Must agree to being the rescue provider and notify employer when services become unavailable
- Arrange for rescue service to visit site to develop appropriate rescue plans and practice rescue operations

Training

All Penn Installations employees who may be involved in confined space entry activities shall be provided with training so that each employee acquires the understanding, knowledge and skills necessary for the safe performance of the duties assigned to them.

Training shall be conducted by Penn Installations Safety Director or by a Qualified Person.

Refresher training shall be provided when work conditions change or when there is reason to believe that an employee has deviated from a procedure or their knowledge seems inadequate. Training will be conducted annually and prior to participation into confined spaces.

Confined Space Entry Permit

Location:	Date of Entry:
Start Time: Completed Time:	Entry Supervisor:
Description of Confined Space:	
Hazard Identification:	

Space Preparation: Check for Yes

____ Area Cleared and Barricaded
____ Piping Disconnected
____ Energy Sources Locked Out & Tagged Out
____ Sources of Ignition Controlled
____ Drained, Flushed & Cleared
____ Purging or Venting

Personal Protective Equipment and Safety Equipment: Check for Yes

_____ Tripod/Retrieval Unit
_____ Helmet/Hard Hat
_____ Personal 3-Gas Meter
_____ Lifeline
_____ Eye/Foot Protection
_____ Attendant 4-Gas Meter
_____ Harness
_____ Hearing Protection
_____ Non-Sparking Tools
_____ Ventilation Equipment
_____GFCI for Wet Environments
_____ Respirator: Type:_____
_____ Fire Extinguisher
_____ Explosion Proof Lighting/Equipment
_____ Protective Clothing: Type:_____

Method of Communication:

_____Visual/Verbal

_____ Radio Operations Frequency: _____

Instrument(s) Used: _____

Calibration Test Date: _____

Was Bump Test Completed? _____YES _____ NO

	Time	Tester (Signature)	% Oxygen (19.5-23.5%)	% LEL (<10%)	PPM CO (<50PPM)	PPM H2S (<10PPM)	OTHER
Pre-Entry							
Re-Test							
Re-Test							
Re-Test							
Re-Test							
Re-Test							
Re-Test							
Re-Test							
Re-Test							
Re-Test							
Record Continuous Monitoring Results Every 2 Hours Minimum							

Authorized Attendant: _____ Attendant Replacement: _____

	Name:	**Time In:**	**Time Out:**
Authorized Entrant:			
Authorized Entrant:			
Authorized Entrant:			
Authorized Entrant:			
Authorized Entrant:			
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Authorized Entrant:			
Authorized Entrant:			

Permit Has Been Closed By:

Print Name:_____ Signature:_____ Date:_____ Time:_____

Air Monitoring Log

Location of Confined Space: _____

Record monitoring results before entry and before re-entry after a break.

Name	Time	O_2 (19.5 – 22)	% LEL	CO <35 PPM	H_2S <10 PPM
Supervisor:				**Date:**	

Entrant's Name	Date	Time In	Time Out	Time In	Time Out	Time In	Time Out	Time In	Time Out

Entry Supervisor (Print Name)	Initials	Date	Time

Permit Closed By: _____

Hearing Conservation

Purpose
The purpose of the Hearing Conservation Program is designed to reduce employee exposure to noise by means of equipment modification, hearing protectors, and employee training.

General Requirements

Implementation
A hearing conservation program shall be implemented for all employees exposed to noise levels of 85 decibels (dBa) or greater as a time-weighted average (TWA) of eight hours. Proper fitting PPE will be provided at no cost to the affected employees. Implementation will include the following:

- Affected employees noise exposure will be measured when information indicates that any employee's exposure may equal or exceed an 8-hour time weighted average of 85 dBa. These measurements will be repeated whenever a change in production, process, equipment, or controls increases noise exposure to the extent that additional employees may be exposed or hearing protectors being used by employees may become inadequate.
- Noise exposure measurements of activities suspected of producing noise levels greater than 85 dBa will be monitored.
- Noise levels are to be monitored with a dosimeter during an average eight-hour day.
- Those employees whose noise exposure is equal to or greater than 85 dBa as an eight-hour TWA shall be notified in writing of the monitoring results and given a baseline audiometric test within 6 months of the initial exposure.
- All employees exposed at 85 dBa or greater shall undergo yearly audiometric examination.

Audiometric Testing Guidelines

- Employee testing shall be performed by a technician certified by the council for Accreditation on Occupational Hearing Conservation.
- Employees will be notified of testing and must have 14 hours of non-exposure to workplace noise prior to testing.
- Each employee's annual audiogram shall be compared to that employee's baseline audiogram to determine whether a Standard Threshold Shift (STS) has occurred.
- If a STS has occurred, the employee shall be retested within 30 days and the retest shall be considered the annual audiogram.
- If the STS is still present after the retest, the employee shall be informed in writing within 21 days and referred to an otolaryngologist after a complete examination.
- If a physician determines an STS exists, the employee shall be refitted with hearing protectors, trained in their use and care and required to wear them.

Hearing Protection

- All employees are provided with hearing protectors at no cost to the employee.
- Hearing protection is required of all Penn Installations employees or contractor employees entering an area or completing a job task that has been identified as being at or above 85 dBa.
- Hearing Protection is required of all employees who have experienced an STS when entering an area or performing a job task at 85 dBa or greater.

- Hearing protection types made available to employees will include disposable earplugs, canal caps, and earmuffs from two different manufacturers. The requirements of these hearing protectors and there attenuation factors will be selected based on the specific noise environment
- Plain cotton or hearing aids/devices are not acceptable protective devices. If an employee, who wears hearing aids/devices, has a hearing disability or total hearing loss, that employee must wear a form of hearing protection (example: earmuffs over the hearing aid) along with any aiding device when entering an area or performing work at or above 85 dBa.

Training

Annual training shall be provided for employees who are placed in the Hearing Conservation Program and training shall be updated to be consistent with any applicable changes in PPE required for that particular application. This training program will emphasize:

- The OSHA Noise Standard with examples of specific areas within the work area where hearing protection is required.
- Effects of sound and the damage it does to the hearing process.
- Dangers of excessive exposure and examples of both on and off the job noise.
- Methods to decrease sound exposure both on and off the job.
- Warning signs of hearing loss.
- Effective methods of hearing protection (plugs, muffs, limited exposure).
- Proper fitting of, use of and caring for hearing protectors.
- Advantages, disadvantages, and attenuation factor of various styles of hearing protection.
- Purpose and procedure for audiometric testing.

The Safety Director will be responsible for the development, scheduling, and delivery of training mandated by the OSHA regulations.

Recordkeeping

- Penn Installations will maintain accurate records for all noise level surveys and employee exposures. Employee's baseline/ annual audiograms and any other records will be retained in a separate file in the Safety Directors office for the duration of employment plus 30 years after termination.
- Records will be provided to employees, former employees, or designated representatives thereof, upon written request to Penn Installations.

OXYGEN-FUEL CUTTING / HEATING

General

There are a number of hazards inherent in the use of an oxy-fuel cutting apparatus. It is necessary that proper safety procedures be understood prior to the use of such equipment. A thorough understanding of the following safety procedures will serve to minimize the hazards involved.

Protective Apparel and Equipment

- The operator should be protected from sparks, flying slag and flame brilliance at all times. Select eye/face protection with tempered lenses shaded dark to protect eyes and face from injury and to provide good visibility of the work.
- Protective gloves, sleeves, aprons, and shoes should be worn to protect skin and clothing from sparks and molten slag. KEEP ALL CLOTHING AND PROTECTIVE APPAREL ABSOLUTELY FREE OF OIL AND GREASE.
- Adjust clothing where necessary to keep out flying sparks and slag. Sparks may lodge in rolled-up sleeves, in pockets of clothing or in cuffs of overalls or trousers. Keep sleeves and collars buttoned when necessary. Low shoes with unprotected tops are not suitable for work where there is possibility of sparks or slag getting inside shoes.
- Non-Combustible ear protection may be used to keep stray sparks from entering ears.
- Hard hats will be worn to protect the head from sparks. Soft caps are not permitted.
- The welding operation shall be shielded with a fire resistant screen to protect those not directly involved in the operation from radiation injury to the skin or eyes.
- All plasma cutting torch and carbon arc operators and persons working in the vicinity of the plasma and arc cutting operation shall be provided with ear protectors or adequate and properly fitted ear plugs.

General Precautions for Welders/Cutters

- Inspect all tools and equipment prior to their use. Worn or damaged hoses, welding leads and other equipment with defects affecting safe operation must be repaired prior to use or discarded.
- Each welder or cutter should have at least one 10 pound, all purpose, dry powder fire extinguisher at the spot where welding or cutting is being performed.
- Do not weld, cut or grind drums, containers or hollow structures which have contained toxic or flammable substances until they have been thoroughly cleaned or purged and tested with a gas meter.
- Respiratory protection must be used and procedures followed to protect against metal fumes when welding, cutting or grinding the following:
    - Zinc metal
    - Metal coated with lead or lead base paint
    - Metal containing mercury or cadmium
    - Hard facing with manganese
- Do not stand in water when using an arc-welder. As necessary, stand on a dry platform made of wood or some other non-conductive material.
    - Do not dip electrode holders in water to cool them
    - Keep your body insulated from the work and the electrode holder during welding

operations
    - Do not weld in the rain
- Wear proper clothing and the proper eye/face protection i.e. welding hood with a filter lens to protect against flash burn and flying objects.
    - Always wear face shield with mono goggles when chipping or grinding
    - Welder's helpers must wear safety glasses with side shields as a minimum protection. Shaded glasses are preferred.
    - Welders must wear safety glasses with side shields under welding hood
- Obtain all necessary "Hot Work Permits" before beginning work.
- Contain all sparks during cutting / welding operations.
- When using fire blankets, procedures must be in place to avoid possible contamination and reuse of the fire blanket.
- Adequate ventilation shall be provided when working in a closed container or enclosed space (i.e., a minimum of 12 changes of air per hour at the point or points where work is being performed). If adequate ventilation is not possible, suitable respiratory protection shall be used.
- During gas welding or cutting:
    - Keep wrenches used to open valves of gas cylinders in place.
    - Close the valve of the gas cylinder and release all gas from the regulator before removing the regulator.
    - Keep all gas cylinders in their upright position and secured against falling during use, transportation and storage. All cylinders (empty or full) must have valve caps in place when not in use.
    - Torches must be lit with a friction lighter or other approved device and not by matches or from hot work.
    - Do not move cylinders by their valves or use them for any purpose for which they were not designed.
    - Both the oxygen and the acetylene or fuel gas lines must be equipped with flashback arrestors.

Preservative Coatings

- Before welding, cutting, or heating is commenced on any surface covered by a preservative coating whose flammability is not known, a test shall be made by a competent person to determine its flammability. Preservative coatings shall be considered to be highly flammable when scrapings burn with extreme rapidity.
- Precautions shall be taken to prevent ignition of highly flammable hardened preservative coatings. When coatings are determined to be highly flammable, they shall be stripped from the area to be heated to prevent ignition.
- Protection against toxic preservative coatings:
    - In enclosed spaces, all surfaces covered with toxic preservatives shall be stripped of all toxic coatings for a distance of at least 4 inches from the area of heat application, or the employees shall be protected by air line respirators, in accordance with the Respiratory Protection Program
    - In the open air, employees shall be protected by a respirator, in accordance with the Respiratory Protection Program.
- The preservative coatings shall be removed a sufficient distance from the area to be heated to ensure that the temperature of the unstripped metal will not be appreciably raised. Artificial

cooling of the metal surrounding the heating area may be used to limit the size of the area required to be cleaned.

Using Compressed Gas Cylinders

Safe procedures for the use of compressed gas cylinders include the following guidelines and requirements.

- Use cylinders, particularly those containing liquefied gases and acetylene, in an upright position and secure them against accidentally being knocked over.
- Unless a recess in the head protects the cylinder valve, keep the metal cap in place to protect the valve when the cylinder is not connected for use. A blow on an unprotected valve might cause gas under high pressure to escape.
- Make sure the threads on a regulator or union corresponds to those on the cylinder valve outlet. Do not force connections that do not fit.
- Open cylinder valves slowly. Cylinders not provided with a hand-wheel valve should be opened with a spindle key or special wrench provided by the gas supplier.
- Do not use a cylinder of compressed gas without a pressure-reducing regulator attached to the cylinder valve, except where cylinders are attached to a manifold, in which case the regulator will be attached to the manifold header.
- Before making connection to a cylinder valve outlet, "crack" the valve for an instant to clear the opening of particles of dust or dirt. Always point the valve and opening away from the body and not toward anyone else. Never crack a fuel gas cylinder valve near other welding work or near sparks, open flames or other possible sources of ignition.
- Use regulators and pressure gauges only with gases for which they are designated and intended. Do not attempt to repair or alter cylinders, valves or attachments. Only the manufacturer should do this work.
- Unless the cylinder valve has first been closed tightly, do not attempt to stop a leak between the cylinder and the regulator by tightening the union nut.
- Fuel gas cylinders in which leaks occur should be taken out of use immediately and handled as follows:
    - Close the valve and take the cylinder outdoors well away from any source of ignition. Properly tag the cylinder, and notify the supplier. A regulator attached to the valve may be used temporarily to stop a leak through the valve seat.
    - If the leak occurs at a fuse plug or other safety device, take the cylinder outdoors well away from any source of ignition, open the cylinder valve slightly and permit the fuel gas to escape slowly. Tag the cylinder plainly. Post warnings against approaching with lighted cigarettes or other sources of ignition. A responsible person should stay in the area until the cylinder is depressed to make sure that no fire occurs.
- Do not permit sparks, molten metal, electric currents, excessive heat or flames to come in contact with the cylinder or attachments.
- Promptly notify the supplier and follow his instructions for returning the cylinder.
- Never use oil or grease as a lubricant on valves or attachments of oxygen cylinders. Keep oxygen cylinders and fittings away from oil and grease, and do not handle such cylinders or apparatus with oily hands, gloves or clothing.
- Never use oxygen as a substitute for compressed air in pneumatic tools, in oil preheating burners, to start internal combustion engines or to dust clothing. Use it only for the purpose for which it is intended.

- Never bring cylinders into tanks or unventilated rooms or other closed areas.
- Before a regulator is removed from a cylinder valve, close the cylinder valve and release the gas from the regulator.
- Regulators or reducing valves must be used on both oxygen and fuel gas cylinders to maintain a uniform gas supply to the torches at the correct pressure. The oxygen regulator should be equipped with a safety relief valve, or be so designated that, should the diaphragm rupture, broken parts will not fly. Workers should stand to one side and away from regulator gauge faces when opening cylinder valves.
- Only regulators listed by agencies such as Underwriters Laboratories, Inc. or Factory Mutual should be on cylinders of compressed gas.
- The regulator is a delicate apparatus and should be handled carefully. It should not be dropped or pounded on. Regulators should be repaired or tested only by skilled workmen or sent to manufacturer for repairs.
- Leaky or "creeping" regulators are a source of danger and should be withdrawn from service at once for repairs. If a regulator shows a continuous creep, indicated on the low-pressure (delivery) gauge by a steady buildup of pressure when the torch valves are closed, the cylinder valve should be closed and the regulator removed for repairs.
- If the regulator pressure gauges have been strained so that the hands do not register properly, the regulator must be replaced before it is used again.
- When regulators are connected but are not in use, the pressure-adjusting device should be released. Cylinder valves should never be opened until the regulator is drained of gas and the pressure-adjusting device on the regulator is fully released.
- The procedures should be followed in detail when regulators or reducing valves are being attached to a gas cylinder.
    - To blow out dust or dirt that otherwise might enter the regulator, "crack" the discharge valve on the cylinder by opening it slightly for an instant and then close it. On a fuel gas cylinder, first see that no open flame or other source of ignition is near; otherwise, the gas may ignite at the valve.
    - Connect the regulator to the outlet valve on the cylinder. Be sure that the regulator inlet threads match the cylinder valve outlet threads. Never connect an oxygen regulator to a cylinder containing fuel gas, or vice versa. Do not force connections that do not fit easily. Be sure that the connections between the regulators and cylinder valves are gas-tight.
    - Release the pressure-adjusting screw on the regulator to its limit - turn it counterclockwise until it is loose.
    - Open the cylinder valve slightly to let the hand on the high pressure gauge move up slowly. On an oxygen cylinder, gradually open the cylinder valve to its full limit, but on an acetylene cylinder make no more than 1½ turns of the valve spindle.
    - Attach oxygen hose to outlet of oxygen regulator and to oxygen inlet valve on torch. Attach acetylene hose to outlet of acetylene regulator and to acetylene inlet on torch.
    - Test oxygen connections for leaks. Be sure oxygen valve is closed on torch; then turn oxygen regulator pressure-adjusting screw clockwise to give about normal working pressure. Using soapy water (nonfat soap) or approved leak test solution, check connections for leaks. At the same time, check regulator for creeping indicated by an increase in the reading on the low-pressure (delivery) gauge. If the regulator creeps

have it replaced or repaired before it is used.

- Test acetylene connections for leaks. Be sure acetylene torch valve is closed and proceed in manner similar for oxygen above - except that acetylene regulator pressure-adjusting screw should be set to produce a pressure of about 10 psi.
- If torch is to be used immediately, proceed as in the next paragraph. If not, close cylinder valves, open torch valves to release pressure-adjusting screws on regulators.
- To adjust pressures of oxygen and fuel gas prior to using torch, proceed as follows. With all torch valves closed, slowly open oxygen cylinder valve, open torch oxygen valve, turn in pressure-adjusting screw on oxygen regulator to desired pressure, then close torch oxygen valve. Open acetylene cylinder valve (1½ times only), and with torch acetylene valve closed, turn in pressure-adjusting screw on acetylene regulator to desired pressure. Purge each line individually. Open oxygen torch valve and release oxygen to the atmosphere for a few seconds before closing the valve; then open acetylene torch valve and release acetylene to the atmosphere for a few seconds and close the valve.
- Open torch acetylene valve, light flame, and readjust regulator. Then close torch acetylene valve. (Acetylene pressure should first be adjusted with torch valve closed to prevent release of acetylene to the air.)
- Open torch valves and light torch according to procedure described in instructions provided with the equipment.

Handling Compressed Gas Cylinders

Serious incidents may result from the misuse, abuse or mishandling of compressed gas cylinders. Workers assigned to the handling of cylinders under pressure should be carefully trained and should work only under competent supervision. Observance of the following rules will help control hazards in the handling of compressed gas cylinders.

- Compressed gas cylinders shall be legibly marked for the purpose of identifying the gas content with either the chemical or the trade name of the gas. Such marking shall be by means of stenciling, stamping, or labeling, and shall not be readily removable.
- Because of their shape, smooth surface and weight, cylinders are difficult to carry by hand. Cylinders may be rolled on bottom edge but never dragged. Cylinders weighing more than 40 pounds (total) should be transported on a hand or motorized truck. Forklifts shall not be used to lift or transport any load suspended by rigging attached to the forks.
- Protect cylinders from cuts or abrasions.
- Where cylinders must be handled by crane, carry them in a cradle or suitable platform and take extreme care that they are not dropped. Do not use slings.
- Do not drop cylinders or let them strike each other violently.
- Do not use cylinders for rollers, supports or any purpose other than to contain gas.
- Do not tamper with safety devices in valves on cylinder.
- When in doubt about the proper handling of a compressed gas cylinder or its contents, consult the supplier of the gas.
- Empty cylinders shall be marked EMPTY or MT. Close the valves and replace the valve protection caps.
- Load cylinders to be transported to allow as little movement as possible.
- Secure cylinders to prevent violent contact or upsetting.

- Always consider cylinders as full and handle them with corresponding care. Accidents have resulted when containers under partial pressure were thought to be empty.
- Cylinders shall be kept away from sources of heat.
- Valve protection caps where cylinder is designed to accept a cap shall always be in place and hand-tight except when cylinders are in use or connected for use.
- Compressed gas cylinders shall never be taken into a confined space.

Storing Compressed Gas Cylinders

Cylinders should be stored in a safe, dry, well-ventilated place prepared and reserved for that purpose. Flammable substances, such as oil and volatile liquids, should not be stored in the same area. Cylinders should not be stored near gangways, stairwells or other places where they can be knocked down or damaged. The following guidelines for cylinder storage must be adhered to.

- Cylinders of oxygen should not be stored within 20 ft. of cylinders containing flammable gases or highly combustible materials. If closer, cylinders should be separated by a fire-resistant partition (½ hour minimum rating) at least 5 feet tall.
- Acetylene and liquefied fuel gas cylinders should be stored upright, in a separate building, or outdoors. Acetylene storage rooms and buildings must be well ventilated and open flames must be prohibited. Storage rooms shall have no other occupancy.
- Cylinders should be stored on a level, fireproof floor. One common type of storage house consists of a shed roof with sidewalls extending approximately halfway down from the roof and a dividing wall between one kind of gas and another.
- Cylinders are not designated for temperatures in excess of 130^{o} F. Accordingly, they should not be stored near sources of heat, such as radiators or furnaces or near highly flammable substances like gasoline.
- Cylinder storage should be planned so those cylinders will be used in the order in which they are received from the supplier.
- Empty and full cylinders should be stored separately with empty cylinders being plainly identified as such to avoid confusion. Group together cylinders that have held the same contents.
- Caps will be in place when cylinders are in storage. Cylinders will be chained or otherwise secured in place to prevent falling.
- A direct flame or electric arc should never be permitted to contact any part of a compressed gas cylinder.
- Cylinders, cylinder valves, couplings, regulators, hose, and apparatus shall be kept free from oily or greasy substances. Oxygen cylinders or apparatus shall not be handled with oily hands or gloves. A jet of oxygen must never be permitted to strike an oily surface, greasy clothes, or enter a fuel oil or other storage tank.
- Valve-protection caps shall not be used for lifting cylinders from one vertical position to another. Bars shall not be used under valves or valve-protection caps to pry cylinders loose when frozen to the ground or otherwise fixed; the use of warm (not boiling) water is recommended. Valve-protection caps are designed to protect cylinder valves from damage.
- Unless cylinders are secured on a special truck regulators shall be removed and valve-protection caps when provided for shall be put in place before cylinders are moved.
- No person other than the gas supplier shall attempt to mix gases in a cylinder. No one except the owner of the cylinder or person authorized by him shall refill a cylinder.
- No one shall tamper with safety devices in cylinders or valves.

- A hammer or wrench shall not be used to open cylinder valves. If valves cannot be opened by hand the supplier shall be notified.
- Cylinder valves shall not be tampered with nor should any attempt be made to repair them. If trouble is experienced the supplier should be sent a report promptly indicating the character of the trouble and the cylinder's serial number. Supplier's instructions as to its disposition shall be followed.
- If cylinders are found to have leaky valves or fittings that cannot be stopped by closing of the valve the cylinders shall be taken outdoors away from sources of ignition and slowly emptied.
- Where a special wrench is required it shall be left in position on the stem of the valve while the cylinder is in use so that the fuel-gas flow can be quickly turned off in case of emergency. In the case of manifold or coupled cylinders, at least one such wrench shall always be affixed to the manifold, available for immediate use.
- Gas bottles shall be racked or caged, standing upright and secured by chain, or some other approved device.

Hose and Torches

Hose

The following guidelines and procedures shall be adhered to when using gas hoses.

- Examine hoses carefully at least daily for leaks, worn places and loose connections.
- Leaks in the hose at the nipple connection should be repaired at once by cutting off the hose a few inches from the end and remaking the connections. Leaks at other locations should be repaired by cutting off the bad section and inserting a hose coupling and a splice.
- Never repair a hose with tape. When hoses are taped together for convenience and to prevent tangling, not more than four out of 12 inches shall be covered with tape.
- Should a flashback occur and burn the hose, discard that length of hose.
- Use only hose and connections made especially for oxy-acetylene welding and cutting.
- Do not use white lead, oil, grease or other pipe fitting compounds for making joints.
- Blow out new hoses with oxygen before using. When acetylene hose have been cleared by oxygen, ventilate thoroughly before attaching it to the acetylene regulator. **Precaution:** *Do not blow out hose with acetylene*.
- Always protect hoses from damage or interference. Protect hoses from being trampled on or run over. Avoid tangles and kinks, and place hoses so they will not be tripped over. Connections might be pulled off or the cylinders and equipment might be pulled over by a sudden strong tug on the hose. Do not allow hoses to come in contact with oil or grease. These deteriorate the rubber and constitute a hazard with oxygen. Protect hoses from flying sparks, hot slag or other hot objects and open flames.
- All oxygen and gas hoses used together shall have flashback arrestors with built-in check valves on both lines installed on the torch and/or regulator ends.

Torches

The following guidelines and procedures should be adhered to when utilizing cutting torches.

- Only approved torches shall be used.
- Before changing torches, shut off the gas at the pressure-reducing regulators and not by crimping the hose.
- To discontinue welding or cutting for a few minutes, closing only the torch valves is permissible. If the welding or cutting is to be stopped for a longer period (during lunch or overnight), proceed

as follows:

- Close oxygen and acetylene cylinder valves.
- Open torch valves to relieve all gas pressure from hose and regulator.
- Close torch valves and release regulator pressure-adjusting screws.

- Do not use matches or cigarette lighters to light torches. Use a friction lighter, stationary pilot flame or other suitable source of ignition. When lighting, point the torch tip so no one will be burned when the gas ignites.
- Never put down a torch until the gases have been completed shut off. Do not hang torches from a regulator or other equipment so that they come in contact with the side of gas cylinders. If the flame has not been completely extinguished, it may heat the cylinder or even burn a hole through it.
- When extinguishing the flame, close the acetylene and oxygen valves in the order recommended by the torch manufacturer. However, if the oxygen valve is closed first, the acetylene flame enlarges appreciably and could burn the welder; therefore the fuel gas should be closed first.