CITY OF AUSTIN

ROCIP
PROJECT SAFETY MANUAL

ROCIP MISSION STATEMENT

We have responsibility to our community, City leadership, and the State of Texas to create a program for our capital improvement projects that reflect our commitment to safety. The men and women who work with us throughout the City not only have the right to a safe and healthy workplace but to work with a City striving to become the benchmark for all safety and health programs throughout the State of Texas.

We have a sense of urgency regarding the safety and health of our contractors. This urgency will distance us from a reactionary and statutory based approach to a new progressive leadership style approach. This approach will be the driving force behind our safety and health program. We will provide mechanisms for increased hazard awareness, employee involvement, local management ownership, and more City management visibility. This will foster open and clear communication concerning workplace safety and allow us to more closely monitor conditions in the workplace and integrate safety and health into the normal flow of business as well as improve hazard awareness of our contractors.

The safety and health of our contractors and their employees is an investment and not a cost. Implementation of this program will result in the City of Austin leading the way in the health and safety arena within the State of Texas.

We will set a standard of excellence in health and safety for others to follow.

DISCLAIMER

The purpose of the Project Safety Manual is to assist in the development and implementation of appropriate safety standards. It acts as a guideline to safety during the construction, renovation, and expansion activities to be completed by independent contractors working on any ROCIP project for the City of Austin. The program is based on applicable government regulations, insurance related safety/risk management requirements, accepted safety practices within the construction industry, and common sense. The maintenance of safe premises, operations and equipment, protection of the employees, and the community, and the avoidance of unsafe conditions and practices (during all construction phases) are the responsibility of the Controlling Contractors and Subcontractors performing the work. Compliance with all the provisions of this Project Safety Manual may not guarantee or ensure compliance with all the requirements of the Department of Labor Occupational Safety and Health Act (29 CFR 1926 and 29 CFR 1910) and all other applicable standards. This manual is not intended to replace the requirement for each Controlling Contractor and Subcontractor to establish and maintain a proper Safety Program as directed by the Federal Department of Labor Occupational Safety and Health Act (Titles 29 CFR 1926 and 29 CFR 1910) the State of Texas and all other applicable standards. No part of this manual is intended to circumvent or supersede federal, state, or local regulations. If these regulations exceed the requirements of this manual the federal, state, or local regulation shall take precedence. If the manual exceeds these regulations, the manual shall apply. If the manual does not address a topic the federal, state, or local regulations shall apply.

Statement of Safety and Health Policy

To: All Contractors and Their Employees

Safety and health on all construction projects for the City of Austin must be a part of every operation. Safety and health is the responsibility of each contractor and every employee on the job site regardless of level.

It is the intent of the City of Austin to comply with all applicable federal, state, and local safety regulations. To do this those responsible must constantly be aware of conditions in the work areas that can produce injury. No supervisor shall require an employee to work at a job he or she knows to be unsafe or unhealthy.

The Contractor *shall furnish to each of its employees and workers a place of employment and employment which are free from recognized hazards that are causing or likely to cause death or serious physical harm to its employees and workers and shall comply and has the general duty to comply with occupational safety and health standards promulgated under this Policy and under the OSH Act. Each employee and worker shall comply with occupational safety and health standards and all rules, regulations, and orders issued pursuant to this Policy and Act which are applicable to his own actions and conduct.*

In practice, if the following elements are present, a "general duty clause" violation has occurred:

1) *The Contractor failed to keep the workplace free of a hazard to which employees or workers of that Contractor were exposed.*
2) *The hazard was recognized.*
3) *The hazard was causing or was likely to cause death or serious physical harm.*
4) *There was a feasible and useful method to correct the hazard.*

It is the intent of the City of Austin and the ROCIP Program Safety Manager to enforce these requirements whenever a particular section of this Manual or the federal standard does not explicitly cover a specifically recognized hazard.

Compliance by both the contractors and their employees in detecting hazards controlling them is a condition of continued presence on the job site. Supervisors should be immediately informed of any unsafe condition. Where correction of any unsafe situation is beyond a supervisor's ability or authority it shall be reported to the ROCIP Safety Team.

The personal safety and health of each employee working on any ROCIP project is of primary importance. The prevention of occupational-induced injuries and illnesses is of such consequence that it shall be given precedence over production at all times. To the greatest degree possible contractors shall provide all means required for the personal safety and health of their workers.

Each contractor will maintain a safety program conforming to the best practices of the construction industry. To be successful such a program must embody the proper attitudes toward injury and illness prevention from all levels of management and employees. It also requires cooperation in all safety and health matters not only between supervisor and employee but also between each employee and his/her fellow workers. Only through such a cooperative effort can a safety culture be established and maintained.

The objective of the City of Austin is a Safety Program that will achieve zero accidents and injuries.

All contractor Safety Programs must include:

1. Enforcement and compliance with all applicable federal, state, and local safety regulations.

2. Provision for the necessary mechanical and physical safeguards to assure maximum protection for employees working on the project and the general public.

3. Provision for a Safety Representative to conduct safety and health inspections, to locate and correct unsafe working conditions or practices, to control health hazards, and to comply fully with the safety and health standards of this program.

4. Provision for training of all employees in safety and health practices.

5. Provision for the necessary personal protective equipment and training for its use and care.

6. Development and enforcement of safety and health rules and the requirement for all employees to cooperate with the rules as a condition of employment.

7. Provision for prompt and thorough investigation of every accident to determine the cause and implement corrective action to prevent reoccurrence.

8. Provision to pre-plan all phases of work. No new phase of work will begin until a Job Hazard Analysis (JSA) has been conducted and reviewed and all potentially hazardous job operations are anticipated.

9. Provisions for an Emergency Action Plan and for access for emergency services at all times.

The success of this Program relies on the participation of all parties to take responsibility for the safety and health on all projects.

Contractors are responsible for the implementation of a safety program that develops a positive attitude in supervision and employees towards safety and is directed to ensure that all operations will be performed with the utmost regard for the safety and health of all involved.

Employees are to be held responsible for a wholehearted genuine cooperation with all aspects of the Safety Program including compliance with all rules and regulations and for continuously practicing safety while performing their duties.

_____

Contractor's Signature

City of Austin

ACKNOWLEDGEMENT OF SAFETY RESPONSIBILITY

I, _____ as a duly authorized representative for the below referenced firm do hereby attest that I have reviewed this ROCIP Project Safety Manual. I will ensure that all project employees, regardless of subcontractor, are aware of the contents and are trained per the Federal Occupational Safety and Health Act (29 CFR 1926 and applicable 29 CFR 1910) Guidelines. I acknowledge that our firm is responsible for all safety provisions while performing work on this project.

_____
Signature and Title

_____
Contractor

_____
Business Address

_____ _____
Telephone Number Date

<u>NOTE:</u> A copy of this page with an original signature is to be returned to the City of Austin prior to commencement of any construction activities. The Manual is to remain on the project premises throughout the duration of work.

SAFETY MANUAL

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APPENDIX - FORMS

ROCIP Disciplinary Policy

This disciplinary policy covers all ROCIP Projects. The violations of OSHA Safety Rules and Regulations committed by a contractor working on multiple ROCIP Projects may be cumulatively totaled to apply disciplinary action against that contractor to maintain the safety and integrity of the Program.

I. Definitions: the definitions applicable to this Policy are those definitions contained in the General Conditions and Agreement and the following additional definitions:

ROCIP Safety Team - *consists of the ROCIP Program Manager, Safety Inspector, City of Austin Project Manager, Owners Representative(s), Inspector(s), and the Construction Safety Manager or designee, (also referred to as the "ROCIP Team") all of whom may be referred to as the "ROCIP Representative" or as a ROCIP Safety Team Member.*

Willful - *OSHA applies a classification of "Willful" where the employer is determined to have committed a violation with an intentional disregard of, or conscious indifference to, the requirements of the Occupational Safety and Health Act and/or OSHA Standards. Following legal precedent.*

Imminent Danger Violation - *is ". . . Any conditions or practices in any place of employment which are such that a danger exists which could reasonably be expected to cause death or serious physical harm immediately or before the imminence of such danger can be eliminated through the enforcement procedures otherwise provided by this Act." Section 13(a) of the OSH Act.*

Serious Violation - *"shall be deemed to exist in a place of employment if there is a substantial probability that death or serious physical harm could result from a condition which exists …" Section 17 (k) of the OSH Act*

Other Than Serious Violation - *" "shall be cited in situations where the most serious injury or illness that would be likely to result from a hazardous condition, cannot reasonably be predicted to cause death or serious physical harm to exposed employees, but does have a direct and immediate relationship to their safety and health". Chapter III of OSHA's Field Inspection Reference Manual*

Negligence - *The failure to use reasonable care. The doing of something which a reasonably prudent person would not do, or the failure to do something which a reasonably prudent person would do under like circumstances. A departure from what an ordinary reasonable member of the community would do in the same community.*

II. General

A. All time lost when a Project is shutdown because of safety violations will be charged against the contractor and the contractor will be liable for any and all related expenses incurred.

B. All training required herein shall be conducted by a ROCIP Safety Team approved source at the contractor's expense.

C. The contractor will be held accountable for any and all safety violations on this Project.

D. Any combination of three (3) Imminent Danger or Serious safety violations will result in the permanent removal of the Superintendent and the Safety Representative from this Project and all ROCIP projects.

III. Imminent Danger Violation - REQUIRES IMMEDIATE CORRECTIVE ACTION

A. Procedures

- When an Imminent Danger Violation is identified, the Project/Task will be shut down immediately by any member of the ROCIP Safety Team.
- The ROCIP Safety Inspector will be notified of the shutdown and given a detailed briefing. The ROCIP Safety Team representative will immediately contact the contractor's Superintendent, Project Manager, or Safety Representative to notify the contractor of the shutdown.
- The Violation will be noted on a safety inspection report or daily report.
- Remediation of the violation shall begin immediately.
- The contractor shall ensure that any and all necessary corrections are made.
- The contractor shall notify the Safety Inspector or the Construction Safety Manager when the hazard has been abated and all of the disciplinary actions stated below have been satisfied.
- A member of the ROCIP Safety Team will verify that the Work can be resumed safely, prior to the recommencement of the Work
- The contractor must document its corrective actions and provide a copy of such report to the ROCIP Safety Inspector.
- The ROCIP Safety Team will continue to focus on Project safety and will implement an additional mandatory weekly Project safety meeting.

1. *1st Imminent Danger Offense:*

a. Employee: The involved Employee will be interviewed to determine if his/her actions were a result of employee misconduct or lack of comprehension or training. Misconduct will result in removal of the Employee from this Project. If there is a lack of comprehension or training

the employee shall attend the appropriate remedial safety training classes prior to reinstatement on the Project.

b. Superintendent: Superintendent will be interviewed. If it is determined that the Superintendent directed the employee action (so as to constitute a Willful act) the Superintendent will be permanently removed from the Project. If the violation was not a "Willful" act, the Superintendent will be given a written warning in the form of a safety report.

c. Safety Representative: The Safety Representative will be interviewed to determine if his/her actions are a result of Negligence. A finding of Negligence will result in the Safety Representative's removal from this Project. If the violation was not an act of Negligence the Safety Representative will be given a written warning in the form of a safety report.

d. Contractor: The contractor must attend a management meeting convened by the ROCIP Safety Team. The Project Manager, Superintendent, or other fully authorized agent of the contractor must attend the meeting. An initial corrective action plan will be formulated and any other appropriate course of action will be determined at that time.

***2. 2nd Imminent Danger Offense*:**

a. Employee: The employee will be permanently removed from this Project and all other ROCIP projects.

b. Superintendent: The Superintendent will be permanently removed from all ROCIP projects. The contractor must provide a duly qualified replacement Superintendent. The Owner's Project Manager and/or Owner Representative(s) will interview and approve a replacement Superintendent.

c. Safety Representative: the Safety Representative will be permanently removed from this project and not allowed to work on any ROCIP project in this capacity. The contractor must provide a duly qualified replacement Safety Representative. The Owner's Construction Safety Manager and/or the City of Austin ROCIP Safety Inspector will interview and approve a replacement Safety Representative.

d. Contractor: The contractor must attend a management meeting convened promptly by the ROCIP Safety Team to implement a corrective action plan and to determine any other appropriate course of action.

3. *3rd Imminent Danger Offense:*

Contractor: The City may terminate the contractor for cause. The Subcontractors involved in the disciplinary action will be removed from this Project and all other ROCIP Projects.

IV. Serious Safety Violations - REQUIRES IMMEDIATE CORRECTIVE ACTION

A. Procedures

- When a Serious Violation is identified, the Project/Task will be shut down immediately by any member of the ROCIP Safety Team.
- Contractor will be briefed immediately on the situation.
- The Violation will be noted on a safety inspection or a daily report.
- Contractor shall immediately begin the process to abate the violation.
- *The portion of the Project involved in the safety violation will remain shut down until <u>all</u> of the disciplinary actions stated below have been satisfied.*
- Contractor shall ensure that any and all necessary corrections are made.
- The contractor shall notify the Safety Inspector or the Construction Safety Manager when the hazard has been abated and all of the disciplinary actions stated below have been satisfied.
- The contractor must document the corrective actions and provide a copy of such report to the ROCIP Safety Inspector.

B. Disciplinary Action

1. 1st Serious Offense:

a. Employee: The involved Employee will be interviewed to determine if his/her actions were a result of employee misconduct or lack of comprehension or training. Misconduct will result in removal of the Employee from this Project. If there is a lack of comprehension or training, the employee will be required to attend the appropriate remedial safety training classes prior to reinstatement on the Project.

b. Superintendent: Superintendent will be interviewed. If it is determine that the Superintendent directed the employee action (so as to constitute a Willful act) then the Superintendent will be removed from the Project. If the violation was not a “Willful” act the Superintendent will be given a written warning in the form of a safety report. If this is the first offense of a serious safety violation and the Superintendent has previously received an Imminent Danger Violation of the same classification of offense, the Superintendent will be removed from this Project.

c. Safety Representative: The Safety Representative will be interviewed to determine if his/her actions are a result of Negligence. A finding of Negligence will result in the Safety Representative's removal from this Project. If the violation was not an act of negligence, the Safety Representative will be given a written warning in the form of a safety report. If this is the first offense of a serious safety violation and the Safety Representative has previously received an Imminent Danger violation of the same classification of offense he/she will be removed from this Project.

d. Contractor: The contractor must attend a management meeting convened by the ROCIP Safety Team as soon as practicable. The Project Manager, Superintendent or other fully authorized agent of contractor must attend the meeting. A corrective action plan will be formulated and any other appropriate course of action will be determined at that time.

2. 2nd Offense: (Cumulative total of any combination of Imminent Danger or Serious)

a. Employee: If second offense is a reoccurrence of a previous Imminent Danger/Serious violation, the employee will be permanently removed from the Project. If the second offense is not a reoccurrence of a previous imminent/serious violation, the employee will be removed from the Project and shall attend the appropriate remedial safety training classes prior to reinstatement on the Project.

b. Superintendent: If second offense is a reoccurrence of a previous Serious Violation or the Project has had a previous Imminent Danger Violation, the Superintendent will be permanently removed from the Project. The contractor must provide a duly qualified replacement Superintendent. The Owner's Project Manager and/or Owner Representative(s) will interview and approve a replacement. If the second offense is not a reoccurrence a member of the ROCIP Safety Team will convene a meeting to formulate a corrective action plan and to determine any other appropriate course of action.

c. Safety Representative: If second offense is a reoccurrence of a previous Serious Violation, or the Project has had a previous Imminent Danger violation, the Safety Representative will be permanently removed from this project and not allowed to work on any ROCIP project in this capacity. The Construction Safety Manager or the City of Austin ROCIP Safety Inspector will interview and approve a replacement. If the second offense is not a reoccurrence of a previous Serious Violation and the Project has not had a previous Imminent Danger Violation, a member of

the ROCIP Safety Team will promptly convene a meeting to determine an appropriate course of action.

d. Contractor: Contractor must attend a management meeting to be convened as soon as practicable. The contractor's Project Manager, Superintendent, or other duly authorized agent of company must attend the meeting. A corrective action plan will be formulated and any other appropriate course of action will be determined at that time.

3. 3rd Offense: (Cumulative total of any combination of Imminent Danger or Serious)

a. Employee: Regardless of whether or not the offense is a reoccurrence of a previous offense, the employee will be permanently removed from this Project and all other ROCIP projects.

b. Superintendent: Regardless of whether or not the offense is a reoccurrence of a previous offense, the Superintendent will be permanently removed from this Project and cannot serve in this capacity on any other ROCIP projects.

c. Safety Representative: Regardless of whether or not the offense is a reoccurrence of a previous offense, the Safety Representative will be permanently removed from this Project and cannot serve in this capacity on any other ROCIP projects.

d. The City may terminate the contractor for cause. Subcontractors involved in the disciplinary action will be removed from this Project and all other ROCIP Projects.

V. Other Than Serious Violations - *REQUIRES CORRECTION WITHIN 24 HOURS*

A. Procedures

- Violation is identified by the ROCIP Safety Team Member.
- Contractor will be briefed on the situation.
- Violation will be noted on a safety inspection report or a daily report.
- Contractor shall correct the violation as soon as possible.
- Contractor shall document the corrective action and provide a copy of the report to the ROCIP Safety Team.

B. Disciplinary Action

1. 1st Offense:

a. Equipment: will be tagged out of service until the violation is brought into compliance.

b. Safety Representative: will receive a written warning in the form of the inspection report.

c. Employee: will receive a verbal warning.

d. Superintendent: will be notified in writing.

2. 2nd Offense:

a. Equipment: will be tagged out of service until the violation is brought into compliance.

b. Safety Representative: will receive a formal written warning.

c. Employee: The employee will be required to attend appropriate remedial safety training classes prior to reinstatement on the Project.

d. Superintendent: will receive a written warning.

3. 3rd Offense:

a. Equipment: will be removed from the Project.

b. Safety Representative: will be temporarily removed from project and be required to attend the appropriate remedial safety training classes to rectify deficiencies in skills prior to reinstatement on the Project.

c. Employee: will be removed from Project.

d. Superintendent: will receive a written notice and the COA Project Manager will be notified to determine an appropriate course of action.

Controlled Substances Policy - 1

1. Policy

All employees working on any City of Austin project will be free of controlled substances.

2. Purpose

The purpose of this program is to comply with the Drug-Free Workplace Act of 1988 (41 U.S.C. 701 et seq.). The intent is through this policy to reduce accidents, fatalities, injuries, and property damage that may result from employee use of controlled substances or alcohol.

3. Scope

Applies to all ROCIP projects.

4. Definitions

Illegal Drug - any drug in any detectable amount which is not legally obtainable; any drug which is legally obtainable but has not been legally obtained; any prescribed drug not legally obtained; any prescribed drug not being used for the prescribed purpose; any over-the-counter drug being used at a dosage level different than recommended by the manufacturer or being used for a purpose not in accordance with bona fide medical authority. Examples of illegal drugs are marijuana and hashish, cocaine, heroin, phencyclidine (PCP), and so-called designer drugs and look-alike drugs. This includes the use of inhalants.

Medical Review Officer (MRO) - a licensed doctor of medicine or osteopathy (MD or DO) with knowledge of drug abuse disorders. The MRO has the knowledge and medical training to interpret and evaluate an individual's positive test result together with his or her medical history and any other relevant biomedical information.

5. Requirements

It is the contractor's responsibility to promote an overall safe, healthful, and efficient working environment for all employees. The use, sale, purchase, transfer, or possession of an illegal drug or alcohol in the workplace, or being under the influence of a controlled substance or alcohol on the job poses serious safety and health risks to the user and to all those who work with the user.

When applicable, contractors and their subcontractor's shall comply with US D.O.T. CFR 49 relating to controlled substances and alcohol use.

6. Prohibited Activities

The use, sale, offer to sell, purchase, transfer, distribution, or possession of drug paraphernalia or any detectable amount of an illegal drug or alcohol by any employee while on any ROCIP project is strictly prohibited.

Contractor's shall not allow any employee on the project if that employee uses any controlled substances or alcohol while working or tests positive for the use of controlled substances or alcohol except in the case of legally prescribed medications.

7. Drug and Alcohol Testing

As soon as practicable following an accident each person involved shall be tested for alcohol and drugs. If the alcohol test is not administered within 2 hours of the accident the contractor will document the reason preventing testing to occur within the specified time frame.

Any employees who are found to have an alcohol concentration of 0.02 or greater will be removed from the project for 24 hours. Employees who have a result of 0.04 alcohol or greater shall be removed from the project permanently.

Any employee who tests positive for the use of a controlled substance shall be permanently removed from the project.

8. Employees Subject to Testing

An employee involved in any accident/incident involving a fatality or injury or where property damage occurred is subject to testing based on the following guidelines:

Each employee involved in a reportable accident will be subject to an alcohol test within 2 hours of the incident and a drug test within 24 hours. If these time frames cannot be met documentation regarding the lack of compliance will be made.

All employees who may be involved in or contributed to an accident requiring medical attention will be subject to drug and alcohol testing.

An employee who is seriously injured and cannot provide a specimen at the time of the accident will provide the necessary authorization for obtaining hospital reports and other documents that would indicate whether there were any controlled substances in his or her system.

Any employee who is involved in an accident/incident and who refuses to be tested for any controlled substances or alcohol will not be permitted to work. Such a refusal will be treated as a positive test and the employee shall be permanently removed from all ROCIP project.

9. Prescribed Drugs

Only legally prescribed drugs are allowed provided that it does not impair in any way the employee's ability to conduct his/her task safely.

10. Confidentiality

All employee information relating to drug or alcohol testing will be protected as confidential unless otherwise required by law or authorized in writing by the employee. There may be some instances where overriding public health or safety concerns may require the release of information otherwise considered confidential.

Contractors will ensure that only an authorized person will obtain the individual test results retained by the laboratory or the MRO (Medical Review Officer). In the case of a claim the results of the drug test will be forwarded to the insurance carrier.

The contractor will ensure that only those persons on a need-to-know basis or those persons in management directly involved in the decision-making process will obtain any drug or alcohol testing information.

11. References

Drug-Free Workplace Act of 1988 (41 U.S.C. 701 et seq.).

Conduct - 2

1. Policy

Contractor shall ensure that their employees maintain appropriate conduct.

2. Purpose

To establish rules and practices for appropriate personal conduct.

3. Scope

Applies to all ROCIP projects.

4. Definitions

None

5. Requirements

5.1 General Requirements

Smoking is permitted in designated areas only. All other areas are non-smoking.

Creating or contributing to unsanitary or unhealthy conditions is prohibited.

All forms of horseplay are prohibited.

Employees are required to remain in assigned work areas unless directed by their immediate supervisor.

Employees must wear and care for hard hats/eye protection and any other required personal protective equipment. Hard hats and eye protection will be worn 100% of the time on all ROCIP projects.

No possession or consumption of alcoholic beverages on any ROCIP project.

No possession or use of drugs of any type on any ROCIP project. Exception: medications prescribed by a physician which do not impair work requirements will be allowed.

No weapons of any type are allowed on any ROCIP project. Exceptions: tools such as knives used in conjunction with job activities.

No riding on equipment or in pick-up trucks unless they are specifically designated to carry or transport passengers and a proper seat and seat belt are provided.

No fighting or harassment of other employees or the general public will be tolerated.

Contractor Safety Requirements – 3

1. Policy

Contractors and subcontractors for the ROCIP projects shall be selected and managed in a manner consistent with the overall ROCIP safety objectives, polices, and procedures embodied in this manual.

2. Purpose

To ensure that the contractor's safety programs meets the ROCIP requirements and to outline the requirements for the on-site safety personnel.

3. Scope

Applies to all ROCIP projects.

4. Definitions

General Contractor means a person or business which has a contract as an "independent contractor" with the City of Austin to provide some portion of the work or services on a ROCIP project.

5. Requirements

The General Contractor is responsible for all safety related issue on their respective projects and are responsible for enforcing this document with all subcontractors.

5.1 Contractor Selection

The contractor's safety performance shall be considered in the selection process.

5.1.1 Experience modification rate (EMR) Loss Time Incident Rate (LTIR), Total Recordable Incident Rate (TRIR) and Days Away-Restricted-Transferred (DART)

Prospective contractors shall be required to furnish their EMR (or equivalent) for the past three years. This information should come directly for the contractor's insurance broker. Note: certified copy may be requested.

An EMR greater than 1.0 indicates an employer with a high frequency and/ or severity of workers compensation claims. In the event of an EMR greater than 1.0 a more detailed evaluation of their safety program will be required by the ROCIP Safety Team. The contractors LTIR and TRIR will also be reviewed and those contractors exceeding the national average for their SIC should not be selected.

5.1.2 Recordkeeping Information

The General Contractors will be required to submit form 5a1 on a monthly basis for the duration of the project. This form will include the General Contractor and all Subcontractors man-hours and recordable incidents and be submitted to the Program Safety Manager no later than the 10th of each month.

5.1.3 Evaluation of Contractors Safety Program

The General Contractor shall cooperate with the safety assessment and evaluation and promptly comply with all deficiencies identified.

The General Contractor shall demonstrate that their and their subcontractor's safety program meets or exceed the ROCIP program requirements. The following shall be addressed by the contractor:

- The program should be industry specific, not generic, and should be responsive to the exposures prevalent in the industry and anticipated on the prospective project.
- There should be elements of supervisor **accountability** for safety, accidents, and claims.
- Safety meetings should be held regularly with documentation as to the subject, names of attendees, and a review of past losses.
- The contractor on a regular basis should conduct safety audits (inspections). Audit results should be documented to identify deficiencies and corrective action taken.
- The program should provide for employee safety training and documentation.

5.1.4 OSHA Citations

The General Contractor shall be required to provide information (reason, correction, and fines) regarding OSHA citations during the past three years. Once a contract has been awarded all current and future citations during the project will be reported to the Program Safety Manager.

5.2 Pre-job Planning

The contractor shall be responsible for overall safety on the project including but not limited to the following:

- Tools and equipment and inspection thereof
- Performance of employees and subcontractors in accordance with OSH Act
- PPE, training on its use, and enforcement of usage at the worksite
- Responsibility for housekeeping and debris removal efforts
- Responsibility for utility locates maintenance, and protection during all phases of the project.
- Safe delivery of material/personnel and all vendor activities

5.3 Project Safety Requirements

A Safety Supervisor is required on all ROCIP project from 0-5 million dollars.

A Safety Superintendent is required on all ROCIP projects from 5-20 million dollars.

A Safety Manager is required on all ROCIP projects greater than 20 million dollars. When the total man-hours of the project exceed twenty thousand hours per month an additional Safety Supervisor will be added. When the total man-hours of the project exceed fifty thousand hours per month an additional Safety Superintendent will be added.

Note: these requirements are not cumulative-i.e. a safety supervisor is not required on a 5-20 dollar project in addition to the safety superintendent except as otherwise stated above.

5.4 Qualifications for the Contractor's Safety Personnel

All contractors performing work on a ROCIP project will have on-site safety staffing approved by the Construction Program/Safety Manager. The designated safety representative shall have no other duties that could affect his/her ability to monitor the safety for the project and shall report directly to the contractor's executive management. The designated safety personnel shall meet the criteria below:

Contractor's Safety Manager

A full-time safety professional employed by the contractor separate from the contractor's superintendent/project manager with a minimum of ten years experience managing safety programs on large construction projects comparable in scope and complexity. If the project requires more than one safety person on site this person will direct the safety efforts of Safety Superintendents or Supervisors. The Safety Manager will report to the contractor's Project Manager.

Contractor's Safety Superintendent

A full-time safety professional separate from the contractor's superintendent or project manager employed by the contractor to manage the project safety efforts. Candidate will have a minimum two (2) years hands-on heavy construction safety experience. Five years heavy construction experience may (at the discretion of the Program Safety Manager) be substituted for each year of safety experience. The Safety Superintendent shall have a minimum of an OSHA 30 hour course and courses specific to the project (trench safety, confined spaces, steel erection, scaffolding, demolition, tunneling, etc.) and be able to demonstrate a sufficient knowledge of safety for the type of project he/she has been selected for.

Contractor's Safety Supervisor

The Safety Supervisor shall be an employee separate from the contractor's superintendent or project manager employed by the contractor to manage the project safety efforts. The Safety Supervisor shall have a minimum of an OSHA 30 hour course and courses specific to the project (trench safety, confined spaces, scaffolding, demolition, etc.) and be able to demonstrate a sufficient knowledge of safety for the type of project he/she has been selected for.

5.5 Contractor's Safety Personnel

To meet the safety requirements of the Contract Documents the contractor must provide adequate personnel. If the contractor chooses to employee a third party to provide safety staffing for the project the candidate will have a minimum of two (2) years verifiable hands-on heavy construction safety experience for the Safety Supervisor and the Safety Superintendent position and meet the criteria stated in 5.4 for the Safety Manager position. This person will be dedicated to providing safety oversight for the project and meeting the requirements of this safety program and will have **no** other duties. This person is required to be on the project at all times when work is in progress.

The contractor is required to provide an alternate qualified person in the event that the designated safety person is not on site. This alternate person will only be acceptable for a period of time such as personal business, vacations, etc. This

person will be approved by the Program Safety Manager and cannot be designated as the full time safety representative without approval of the Program Safety Manager. The alternate safety representative shall meet the same qualifications as the existing safety representative.

Contractor's Project Manager

This person will ensure compliance with all provisions of the Contract Documents, OSHA, and other governmental agency and industry safety requirements and standards. Additional duties of the Project Manager shall include the following:

- Support the safety representative's effort to correct all substandard safety conditions.

- Take an active part in all supervisory safety meetings, including the discussion of observed unsafe work practices or conditions, a review of the accident experience and corrective actions, and encouragement of safety suggestions from employees.

- Cooperate with the Project Manager, Carrier, ROCIP Safety Inspector and Administrators.

- Provide the Project Manager, Program Safety Manager, ROCIP Safety Inspector and ROCIP Administrator with copies of all OSHA Citations as soon as received.

Contractor's Safety Manager, Safety Superintendent or Safety Supervisor

The contractor safety representative shall direct all safety related activity on the project. When applicable, the contractor's Safety Manager shall direct the efforts of the contractor's Safety Superintendent and Safety Supervisor.

The contractor's Safety personnel shall ensure that all of the employees on the project are made aware of steps to take in the event of an accident and the location of first aid facilities.

The position requires this person to perform the following:

- Routine inspection of the jobsite. These inspections shall be based on the type and complexity of the project and shall be conducted at least four times per day to eliminate unsafe acts and/or conditions.

- Provide timely correction of any observed unsafe conditions, practices, or violations.

- Provide safety training as necessary and as required in the General Conditions of the contract documents (Sec 6.11.3).

- Investigate all accidents and implement immediate corrective action. Comply with the insurance carrier in all accident investigation and reporting procedures.

- Report all injuries and accidents in a timely manner to the ROCIP Safety Inspector in accordance with Contract Documents, federal, state and local laws and regulations.

- Ensure that the necessary Competent Persons are on site as required by this manual.

- Be responsible for the availability and proper use of necessary safety equipment including personal protective equipment and apparel for the employees.

- Coordinate safety activities with the City of Austin Project Manager, Program Safety Manager, ROCIP Safety Inspector, Administrators and the Carriers, and take necessary steps to promptly implement safety recommendations or directives issued thereby.

- Attend special safety meetings held or sponsored by the City of Austin Project Manager, Program Safety Manager, ROCIP Safety Inspector, Administrator, and/or Carrier. The Contractor's Safety Manager, Safety Superintendent, or Safety Supervisor is expected to participate in these meetings.

- Ensure that adequate first-aid supplies are available at the work site and that personnel are qualified and identified to administer first-aid as required.

- *Be on the project at all times while work is in progress.* If the designated safety person has to leave the project a suitable replacement will be submitted to and approved by the COA ROCIP Safety inspector or the Program Safety Manager.

Contractor shall submit their candidate‘s resume to the Program Safety Manager for review and approval. An interview by the Program Safety Manager is required. The Program Safety Manager can refuse a candidate based on past performance, lack of comprehension of duties, or insufficient qualifications.

The qualified safety representative will be approved and in place at the time of NTP.

Safety Systems - 4

1. Policy

Processes and systems shall be established and designed to control hazards and work-related injuries and illnesses.

2. Purpose

To define systems and methods for the identification, control, and communication of potential or existing hazards.

3. Scope

Applies to all ROCIP projects.

4. Definitions

Job Safety Analysis (JSA) means a systematic process of studying a 'job' (task) so as to define the activities associated with the job; identify the hazards or potential accidents associated with each sequential activity and to develop solutions that shall eliminate, nullify, or prevent such hazards from causing harm.

5. Requirements

5.1 Training

Each policy section of this manual indicates training requirements to be used in addition to applicable training required by the City, State and Federal Regulations. Each employer is responsible to ensure their employees are properly trained as required by this document and the OSH Act.

5.1.1 New Employee Orientation

All contractors shall ensure that all employees receive a comprehensive session of dedicated safety orientation on the ROCIP safety policies and procedures **prior** to the commencement of work.

This orientation shall include all applicable safety information and materials relevant to that employee's foreseeable duties and exposures.

This orientation can be conducted by the contractor or the City of Austin Safety Representative. If the contractor chooses to conduct their own orientation the orientation must be approved by the ROCIP Safety

Inspector prior to conducting said orientation. A list of attendees will be forwarded to the City of Austin Safety Representative prior to the employee starting work.

5.1.2 Site-specific Orientation

The General Contractor(s) shall ensure that all employees and all sub-contractor employees, upon initial assignment, receive site specific orientation. This orientation shall include site requirements and standards that apply uniquely to the work site.

5.1.3 Weekly Safety Training Meetings (Tool-box Talks)

All contractors and subcontractors shall meet weekly at their work site to review a safety subject relevant to current work site exposures. Documentation of this process shall be retained.

5.2 Job Safety Analysis (JSA)

Each contractor shall develop JSA's to perform based on the following priorities:

- Past accident frequency
- Past accident severity
- Potential injury severity
- Newly established tasks
- Work schedule involving interaction with other contractors
- Changes predicted in the work schedule, i.e., critical lifts, equipment movement, etc., that may create distractions

JSA's shall be developed prior to the commencement of work. JSA's shall be retained at the originating work site as long as the task is performed.

JSA's shall be coordinated by the designated Safety Person and include all affected employees.

JSA's shall be conducted for all of the following:

- Before the commencement of the project
- Daily for any employee engaged in a new task

5.3 Fall Protection

Each employee on a walking/working surface with an unprotected side or edge which is 6 feet (six-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. This shall apply 100% (one-hundred percent) of the time on all ROCIP projects regardless of the subcontractor or type of work.

5.4 Inspections

Each policy section of this manual may indicate inspection requirements. Each contractor safety personnel shall establish an inspection process for all work sites.

The General Contractor shall ensure that all subcontractors comply with these requirements. All inspection activities shall be appropriately documented and retained.

5.5 Safety Violations

All contractors and subcontractors shall review the disciplinary policy for safety violations covered in this manual.

5.6 Recordkeeping

Written records of all safety processes outlined in this policy section shall be maintained by the contractor.

6. References

29 CFR 1926 and 29 CFR 1910

Aerial Personnel Lifts - 5

1. Policy

All aerial personnel lifts shall be operated, maintained, and controlled in a safe manner and in accordance with manufacturers guidelines.

2. Purpose

To define the procedures and standards that applies to the care, control, maintenance, inspection, and operation of aerial personnel lifts.

3. Scope

Applies to all ROCIP projects.

4. Definitions

Aerial personnel lift means any vehicle-mounted device, telescoping or articulating, or both, which is used to position personnel. These include extensible boom platforms, aerial ladders, articulating boom platforms, vertical towers, and a combination of any of the above. Also for the purposes of this policy powered work platforms and scissor lifts shall be considered as aerial personnel lifts.

Articulating boom platform means an aerial personnel lift with two or more hinged boom sections.

Extension boom platform means an aerial personnel lift (except ladders) with a telescopic or extension boom. Telescopic derricks with personnel platform attachments shall be considered to be extension boom platforms when used with a personnel platform.

Platform means any personnel-carrying device (basket or bucket) that is a component of an aerial personnel lift.

5. Requirements

5.1 General

Only trained personnel who have been designated by their employer are authorized to operate aerial personnel lifts. All aerial lifts shall be inspected before use in accordance with the manufacturer’s guidelines

Fall protection requirements for aerial personnel lifts are found in the Fall Protection section of this manual. Personnel shall not be permitted to stand on the rails, buckets, planks, or any makeshift device while working from aerial devices. A body harness shall be worn 100% of the time and a lanyard appropriately attached.

Personnel shall not be permitted to use an aerial personnel lift as a means of access. In the event that there are no other means of access specific procedures including rationale (feasibly), duration, evacuation, fall protection, etc. shall be developed and reviewed with employees prior to implementation.

Large or excessive amounts of material shall not be transported in an aerial personnel lift. Other means would be necessary for such activities.

Load limits specified by the manufacturer shall not be exceeded.

Scissor lifts shall only travel on solid surfaces and shall not travel over objects.

Scissor lifts shall not be extended on inclines.

5.2 Boom Lifts

An aerial lift may not be moved when the boom is elevated in a working position with personnel in the basket except for equipment that is specifically designed for this type of operation.

Articulating boom and extendible boom platforms primarily designed as personnel carriers shall have both platform (upper) and lower controls. Upper controls shall be in or beside the platform within easy reach of the operator. Lower controls shall provide for overriding the upper controls. Controls shall be plainly marked as to their function. Lower level controls shall not be operated unless permission has been obtained from the employee in the lift except in case of emergency.

The insulated aerial devices shall not be altered in any manner that might reduce its insulating value. The insulated boom of a lift shall be regularly maintained and certified to ensure the continued insulating properties.

Before moving an aerial lift for travel the boom(s) shall be inspected to see that it is properly cradled and outriggers are in stowed position.

6. References

CFR 29 CFR 1926.453, .952(b), and .955(e)

Bloodborne Pathogens - 6

1. Policy

All contractors who have been identified as having a predetermined risk of occupational exposure to Bloodborne Pathogens shall be provided with appropriate procedural precautions and training.

2. Purpose

To protect contractors from occupational exposure to Bloodborne Pathogens and certain other potentially infectious materials.

3. Scope

Applies to all ROCIP projects. Particularly, this section applies to certain cleaning service work areas, plumbing service work, plumbing construction work when tying into active sewer systems, certain hospital work areas, certain lab work areas, first-responders, and any supervisors for these activities.

4. Definitions

Approved Disinfectant means a bleach/water solution in a ratio of 1:10 or any commercially available disinfectant such as Betacide or Madacide.

Blood means human blood, human blood components and products made from human blood.

Bloodborne Pathogens means pathogenic microorganisms that are present in human blood and can cause disease in humans. These Pathogens include, but are not limited to, Hepatitis B virus (HBV) and human immunodeficiency virus (HIV).

Contaminated means the presence or the reasonably anticipated presence of blood or other potentially infectious materials on an item or surface.

Decontamination means the use of physical or chemical means to remove, inactivate, or destroy Bloodborne pathogens on a surface or item to the point where they are no longer capable of transmitting infectious particles and the surface or item is rendered safe for handling, use, or disposal.

Engineering Controls means any controls that isolate or remove the Bloodborne pathogens hazard from the workplace.

Exposure Incident means a specific eye, mouth, other mucous membrane, non-intact skin, or parenteral contact with blood or other potentially infectious materials that result from the performance of an employee's duties.

First Responder means any employee who has received accredited training in first aid and/or cardiopulmonary resuscitation (CPR) and has been designated as a person responsible for rendering immediate first aid assistance to persons who require emergency assistance while on company property.

Hand-washing Facilities means a facility providing an adequate supply of running potable water, soap, and single use towels or hot air drying machines.

HBV stands for Hepatitis B virus.

HIV stands for Human Immunodeficiency Virus.

Licensed Healthcare Professional means a person whose legally permitted scope of practice allows him or her to independently perform the activities required by Hepatitis B Vaccination and Post-exposure Evaluation and Follow-up.

Occupational Exposure means reasonably anticipated skin, eye, mucous membrane, or parenteral contact with blood or other potentially infectious materials that may result from the performance of an employee's duties.

Other Potentially Infectious Materials (OPIM) means: The following human body fluids: semen, vaginal secretions, cerebrospinal fluid, synovial fluid, pleural fluid, pericardial fluid, peritoneal fluid, amniotic fluid, saliva in dental procedures, any body fluid that is visibly contaminated with blood, and all body fluids in situations where it is difficult or impossible to differentiate between body fluids; any unfixed tissue or organ (other than intact skin) from a human (living or dead); and HIV-containing cell or tissue cultures, organ cultures, and HIV- or HBV containing culture medium or other solutions; and blood, organs, or other tissues from experimental animals infected with HIV or HBV.

Parenteral means piercing mucous membranes or the skin barrier through such events as human bites, cuts, and abrasions.

Responsible Person (Personnel) means any person or persons trained in the control of disinfecting procedures and disposal procedures of equipment, product or materials suspected to be contaminated with Bloodborne Pathogens.

Source Individual means any individual, living or dead, whose blood or other potentially infectious materials may be a source of occupational exposure to the employee.

Universal Precautions means an approach to infection control. According to the concept of Universal Precautions, all human blood and certain human body fluids are treated as if known to be infectious for HIV, HBV, and other Bloodborne pathogens.

Work Practice Controls means controls that reduce the likelihood of exposure by altering the manner in which a task is performed.

5. Requirements

Exposure Determination

All job classifications shall be reviewed by the contractor to determine activities that involve potential occupational exposure to Bloodborne pathogens or OPIM. A list of these classifications as noted in 5.1.1 of this Policy section shall be compiled and retained. Exposure determination shall be based on the definition of occupational exposure without regard to personal protective clothing and equipment.

5.1. Job Classifications with Possible Occupational Exposure

The first group includes job classifications in which all contractors have occupational exposure. These job classifications shall be listed, although it is not necessary to list the specific work tasks of the people contained in this group

The second group includes job classifications in which some of the contractors have occupational exposure. For these job classifications, it shall be necessary to list the specific tasks and procedures causing occupational exposure

First Responders and other responsible personnel have been identified as having a potential occupational exposure to blood and/or Bloodborne Pathogens. Contractors who volunteer for this assignment could be exposed to blood and Bloodborne Pathogens as a result of providing immediate first aid assistance, or due to decontamination of contaminated equipment and/or surfaces.

Any employee who has been identified as a First Responder shall sign a First Responder Information Form. This form shall be maintained in the employee's personnel file

Any employee who has been identified as a Responsible Person shall be required to sign a Responsible Person Bloodborne Pathogen Exposure Control Statement. This form shall be maintained in the employee's personnel file

5.2 Training

Bloodborne Pathogen Exposure Control training shall be held within ninety (90) days of the effective date of hire, initially upon work site assignment, and annually for all applicable contractors.

A hard copy of this Bloodborne Pathogens Exposure Control Program shall be provided to every applicable employee trained.

5.3 Exposure Prevention

5.3.1 Universal Precautions

All contractors shall adhere to the Universal Precautions method, that is, all human blood and OPIM shall be treated as known to be infectious for HIV, HBV (Hepatitis B Virus), HCV (Hepatitis C Virus) or other Bloodborne pathogens. Where differentiation of types of body fluids is difficult or impossible, all body fluids are to be considered potentially infectious. Appropriate personal protective equipment shall be utilized at all times. See 5.3.3 of this policy.

5.3.2 Engineering Controls and Work Practice Controls

Engineering controls and work practice controls are to be the primary methods used to prevent occupational transmission of HBV and HIV. Engineering Controls reduce employee exposure at the work site by either removing or isolating the hazard or isolating the employee from exposure. Engineering controls shall be examined and maintained or replaced on a scheduled basis. Proper work practice controls change the manner in which a task is performed.

All contractors who come in contact with the blood of another person or other potential infectious materials shall wash their hands and any other skin with soap and water; if contact with eyes, mouth or nose, flush area with water immediately or as soon as possible following such contact. When hand-washing facilities are unavailable, contractors shall use antiseptic cleanser and paper towels or antiseptic towelettes. All contractors must know where the hand-washing facilities and other hand-washing supplies are located.

5.3.3 Personal Protective Equipment

If occupational exposures remain after instituting engineering and work practice controls, personal protective equipment (PPE) shall be used. PPE is considered appropriate only if it does not permit blood or other potentially infectious materials to pass through or reach contractors' work clothes, street clothes, undergarments, skin, eyes, mouth, or other mucous membranes under normal conditions of use and for the duration of the time that the PPE shall be used.

Types of PPE include gloves, gowns, masks, mouthpieces and resuscitation bags. If the PPE is reusable, it shall be repaired, replaced and/or cleaned when necessary.

First Responders and Responsible Personnel shall have an Infection Protection Kit in their possession. Contents of an Infection Protection Kit should include the following items:

- Antiseptic Towelettes
- Rubber latex gloves
- Face mask
- Disposable body gown and shoe covers
- Protective eye wear
- Biohazard bag with secure tie
- Area Control Biohazard warning tape and signs

Disposable PPE shall not be reused. If circumstances require the use of this equipment, it shall be properly disposed of after its use in the designated leak-proof container.

First Responders certified in CPR shall be provided with plastic mouth shields to protect a first responders' mouth area while performing Artificial Respiration or Cardiopulmonary Resuscitation (CPR).

All First Responders and Responsible Personnel shall be required to use PPE at all times when performing first aid on another person or decontaminating suspected contaminated equipment, products, or materials. It shall be the responsibility of each person rendering first aid assistance to use the appropriate degree of discretion and judgment necessary when deciding what type of PPE should be utilized for the given circumstances. However, in all cases, when rendering immediate first aid to a bleeding person, First Responders shall be required to use all PPE in their assigned Infection Protection Kits. If the First Responder makes a judgment in a given circumstance, that the use of PPE shall impede the delivery of first aid treatment or pose an increased hazard to

the safety of the injured person or other contractors, this judgment shall be documented.

5.3.4 Housekeeping

Any surface that has been exposed to potentially infectious materials shall be decontaminated.

5.4 Vaccinations

Contractors shall make available Hepatitis B vaccinations to all of their employees who have occupational exposure to blood within 10 working days of applicable work site assignment, at no cost, at a reasonable time and place, and under the supervision of a licensed physician/licensed healthcare professional, and according to the latest recommendations of the U.S. Public Health Service. Contractors shall sign a declination form if they choose not to be vaccinated, but may later opt to receive the vaccine at no cost to the employee.

All contractors identified as First Responders or Responsible Persons, shall be immediately eligible to be prescreened for the presence of Hepatitis B virus antibodies and to receive a Hepatitis B Vaccine at no cost to the employee within ten (10) working days of their designation as a First Responder or Responsible Person. Contractors who decline a Hepatitis B vaccination shall sign a Hepatitis B Vaccination Declination Form.

Contractors shall be provided with a copy of the medical provider's written report within fifteen (15) working days of receipt.

If the U.S. Public Health Service recommends a routine dose(s) of Hepatitis B vaccine at a future date, such booster dose(s) shall be made available at no charge.

5.5 Exposure Incidents

An exposure incident may occur if an employee comes into contact with the blood of another person or some other employee or potentially infectious material. If any exposure incident occurs, contractor shall ensure that the area and/or equipment that has been contaminated by blood or other potentially infectious materials is secured from inadvertent exposure to others by placing warning tape and signs around the contaminated area. Signs shall not be removed until the area is thoroughly cleaned and disinfected with disinfectant solution by a Qualified Person wearing appropriate personal protective equipment.

The contractor shall document the incident on the Blood and Body Fluid Exposure Report.

When any employee is subject to an exposure incident, regardless of whether or not that employee is a designated First Responder, the contractor shall:

- Immediately refer that employee to the designated medical provider
- Ensure that the employee subjected to the exposure incident receives a confidential medical evaluation and follow-up
- Provide the designated medical provider with a copy of the completed Blood and Fluid Exposure Report as soon as possible following the investigation of the exposure incident
- Request the source individual voluntarily submit to serological blood test to screen for the presence of Hepatitis B (HBV) and human immunodeficiency (HIV) virus antibodies
- If the source individual agrees to be tested, the person shall be directed to the designated medical provider
- Request the source individual provide the medical provider for the employee subjected to the exposure incident the results of all blood tests conducted on the source individual

If the source individual refuses to voluntarily submit to blood testing, advise the medical provider that the source individual refused to be tested, and document.

If the source individual declines a blood test to determine the presence of human immunodeficiency (HIV) virus antibodies, but does give consent for a blood test to determine the presence of Hepatitis B (HBV) antibodies, the medical provider shall be instructed to retain the source individual's blood sample for a period of ninety (90) days following the date the source individual's blood was drawn. The source individual may elect to have a blood test to detect HIV antibodies at a later date, in which case the medical provider can use the original sample provided by the source individual.

Request that the medical provider send a written report to the company documenting that the employee subjected to the exposure incident was informed of the medical evaluation results and the need for any further follow-up. A copy of the medical providers report is given to the employee subjected to the exposure incident shall be provided a copy of the medical provider’s report within fifteen (15) days after receipt.

All post-exposure evaluation and follow-up plus laboratory tests conducted shall be available, in confidence, to each employee who has had an exposure incident. The evaluations and test shall be conducted by an accredited laboratory and provided at no cost to the employee. Follow-up shall include a confidential medical evaluation documenting the following information:

- Circumstances of the exposure
- Identifying and testing the source individual, if feasible

- Testing the exposed employee's blood if he/she consents
- Post-exposure prophylaxis
- Counseling and evaluation of reported illnesses

5.6 Contaminated Materials and Labeling

Any disposable contaminated materials shall be discarded by sealing within a plastic bag, which is then to be sealed in a red bag or one that is marked with a bio-hazard symbol.

Proper disposal of these items shall occur by coordinating with a local waste disposal company. Disposal of these items without such coordination is prohibited.

Work areas that contain processes where occupational exposure is known shall be marked with the biohazard symbol and include: Warning Biohazard Area. The contractor for the applicable work area, or designee, shall ensure proper disposal.

5.7 Recordkeeping

Exposure and medical records shall be maintained for thirty (30) years past the exposed employee's last date of employment, as follows:

- The name and social security number of the employee
- A copy of the contractors HBV vaccination status, including the dates of vaccination
- A copy of the results of examinations, medical testing, and follow-up procedures
- A copy of the information provided to the healthcare professional, including a description of the employee's duties as they relate to the exposure incident, and documentation of the routes of exposure and circumstances of the exposure

Training records shall be maintained and kept for three years from the date of training. Other documentation of this training is acceptable when multiple topics are covered. The following information shall be included with the documentation:

- The dates of the training sessions
- An outline describing the material presented
- The names and qualifications of persons conducting the training
- The names and job titles of all persons attending the training sessions
- Training records shall be available to contractors or employee representatives upon request

The contractor shall provide to any employee who so requests, a copy of the Bloodborne Pathogen Exposure Control Program no later than fifteen (15) working days from the date of the employee's request.

6. References

CFR 29 CFR 1910.10

Confined Spaces - 7

1. Policy

Systems shall be utilized to ensure the safety of employees who are required to enter confined spaces.

2. Purpose

To set forth procedures for the safe entry to confined spaces.

3. Scope

Applies to all ROCIP projects.

4. Definitions

All definitions from 29 CFR 1910.146 and applicable 1926 standards apply.

Attendant means an individual stationed outside permitted confined spaces who monitors the authorized entrants and who performs all attendants' assigned duties.

Authorized Entrant means an individual who is authorized to enter a confined space.

Confined space means a space that is large enough and so configured that an individual can bodily enter and perform assigned work; has limited or restricted means for entry or exit (for example, tanks, vessels, silos, storage bins, hoppers, vaults, bore pits, tunnels, etc.) and is not designed for continuous occupancy. Confined space has one or more of the following characteristics:

- Contains or has a 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 which slopes downward and tapers to a smaller cross-section.
- Contains any other recognized serious safety or health hazard.

5. Requirements

5.1 Training

The employer shall provide training so that all employees whose work is regulated by this section acquire the understanding, knowledge, and skills necessary for the safe performance of the duties assigned under this section.

All training will be conducted in accordance with Federal and State laws, and best industry practices. Training will include, but not limited to 29 CFR 1910.146

Training shall be provided to each affected employee:

- Before the employee is first assigned duties that require a confined space entry.
- Whenever there is a change in permit space operations that presents a hazard about which an employee has not previously been trained.
- Whenever the supervisor or safety representative has reason to believe that there are deviations from the permit space entry procedures required by this instruction or inadequacies in the employee's knowledge or use of these procedures.

The training shall establish employee proficiency in the duties required by this section.

The employer shall certify that the training required by this section has been accomplished. The certification shall contain each employee's name, the signatures or initials of the trainers, and the dates of training. The certification shall be available for inspection by the City and their authorized representatives.

5.2 General

All manholes, sewers systems, tunnels, bore pits, tanks, and vessels shall be considered a permit required space unless a qualified person determines that there are no existing or potential hazards and has reclassified the space in accordance with this section; and that the work does not introduce a hazard into the space such as those created by internal combustion powered equipment, cutting/welding, etc.

Employees shall be informed of permit required confined spaces for the work site as they are identified.

Only authorized personnel may be permitted to enter a permit required confined space.

Danger signs or other equivalent means shall be used to warn of existing confined spaces that are accessible by employees and others.

All required safety equipment shall be at the confined space work area in working order and instruments calibrated.

5.3 Initial Evaluation of Confined Spaces

All spaces shall be considered permit-required confined spaces until the pre-entry evaluation conducted by a Qualified Person demonstrates otherwise. This evaluation shall be recorded. Confined spaces shall be classified as follows:

- Non Hazardous
- Hazardous due to work task
- Hazardous due to internal condition
- Hazardous due to atmosphere

5.4 Reclassification of Permit Required Spaces

Permit required confined spaces may be reclassified as non-permit spaces under the following circumstances:

- The space has no actual or potential atmospheric hazards and if all hazards within the space are eliminated without entry into the space
- If testing and inspection during entry demonstrates that the hazards within the space have been eliminated and remain eliminated
- The work does not introduce hazards
- If the permit required confined space is to be reclassified as a non permit space the basis for determining that all hazards have been eliminated shall be documented on an appropriate form.
- If a hazard returns personnel shall evacuate the space and the space shall be reevaluated

5.5 Confined Space Entry Form

The entry supervisor shall ensure that a confined space entry form containing all of the requirements of 29 CFR 1910.146 are completed prior to the entry of any permit required confined space.

Permits are not void during any single work period when crewmembers are added to the existing crew or when crewmembers are replaced on a planned rotational basis and all the provisions of the permit are met including training and instructions.

Permits become void when the scope of work exceeds the definition of work defined on the permit and when work is required to be completed that is not covered by the permit.

Confined Space Permits shall be posted at the confined space work area until the work is completed. An in/out board may be used for boring operation as long as all the requirements of this part are met. At the conclusion of work the permit shall be returned to the safety representative.

5.6 Atmospheric Testing

Atmospheric testing will be conducted to evaluate the atmosphere of the space and to verify acceptable entry conditions for entry into that space.

Evaluation Testing. The entry supervisor will ensure that the atmosphere of a confined space is analyzed using equipment of sufficient sensitivity and specificity to identify and evaluate any hazardous atmospheres that may exist. This is required to ensure that appropriate permit entry procedures can be developed and acceptable entry conditions stipulated for that specific space. Evaluation and interpretation of this data and development of the entry procedure will be done by, or reviewed by, a technically qualified person based on evaluation of all serious hazards. The internal atmosphere will be tested with a calibrated direct-reading instrument for the following conditions in the order given:

(1) Oxygen content
(2) Flammable gases and vapors
(3) Potential toxic air contaminants

Verification Testing. The atmosphere of a permit space which contains a hazardous atmosphere will be re-tested prior to the entrant entering the space for contaminants identified by evaluation testing to verify acceptable entry conditions. Results of this testing will be recorded on the permit in the space provided adjacent to the stipulated acceptable entry condition.

Duration of Testing. Measurement of values for each atmospheric parameter will be made for at least the minimum response time of the test instrument specified by the manufacturer. Testing will be continuous for all Permit Required Spaces with at least one monitor inside the space and one monitor outside the space with the ability to test inside the space (active pump monitor with sufficient length hose) if practicable.

Testing Stratified Atmospheres. When monitoring for entries involving an accent or descent into a confined space where the atmosphere may be stratified the atmosphere will be tested at a distance of approximately every 4 feet in the direction of travel and to each side. If a sampling probe is used the rate of progress will be slowed to accommodate the sampling speed and detector response. The stratified atmosphere will be tested by the same means as referenced above. *There is a presumption that all spaces are subject to stratified atmosphere and should be tested accordingly.*

Prior to work beginning the supervisor shall:

Implement the means, procedures, and practices necessary for safe permit space entry operations, including, but not limited to, the following:

- Specifying acceptable entry conditions.
- Verify that conditions in the permit space are acceptable for entry.
- Identify and evaluate the hazards of the space before employees enter.
- Isolating the permit space.
- Purge, inert, flush, and ventilating the permit space as necessary to eliminate or control atmospheric hazards. *Note: Ventilation will be continuous*.
- Test conditions in the permit space to determine if acceptable entry conditions exist before entry is authorized except, if isolation of the space is unfeasible, because the space is large or part of a continuous system such as a sewer. Pre-entry testing shall be performed to the extent feasible before entry is authorized and, if entry is authorized, conditions shall be continuously monitored in the areas where authorized entrants are working.
- Provide pedestrian, vehicle, or other barriers as necessary to protect entrants from external hazards.
- Implement the measures necessary to prevent unauthorized entry.
- Develop and utilize checklists based on 29 CFR 1910.146.

The employer will provide the following equipment to employees, properly maintain that equipment, and ensure that employees are trained in the proper use of the equipment:

- Testing and monitoring equipment needed to determine if hazardous conditions exist or to verify that they do not exist.
- Ventilating equipment needed to obtain acceptable air quality and flow rate.
- Equipment necessary for communication between personnel involved in the entry operation.
- Personal protective equipment.
- Lighting equipment needed to enable employees to work safely and to exit the space quickly in an emergency.
- Ladders or stairs as necessary for safe ingress and egress by authorized entrants.
- Rescue, retrieval, emergency equipment, and personnel needed to extract or treat injured personnel.

5.7. Acceptable Entry Conditions

Acceptable levels of oxygen shall be 20.8% or 20.9 % unless the authorized supervisor can determine what has displaced the oxygen. If the O2 levels are not 20.8% or 20.9% an initial test will be made at the worksite and the oxygen reading inside the confined space shall be consistent with the surrounding atmosphere outside the confined space.

If the potential exists for other chemical hazards to be present, such as Chlorine, Ammonia, or other such gases the authorized supervisor shall ensure that the appropriate instrumentation is acquired and utilized during the testing of the confined space.

5.8 Pre Entry (occurring prior to entry)

All persons who enter confined spaces, Attendant(s), and Entry Supervisor shall receive the following minimum instructions concerning the confined space:

- How to recognize symptoms of the specific potential hazards of the confined space.
- The consequences of exposure to potential hazards.
- When to evacuate the confined space.
- Adhering to instruction of the Attendant.
- Evacuating when alarms sound.
- How communications will be maintained.
- What to do if an exposure occurs or there is a release of a substance.
- Shutting off tools during an emergency.

All sources of energy or contaminants shall be controlled such as:

- Electrical energy.
- Pressurized systems such as pipelines and vessels are isolated through double blocking, blinding, bleeding, and depressurization.
- Extreme heat and extreme cold conditions.

All pre-entry atmospheric testing shall be completed.

The method of ventilating the confined space shall be established.

Tools and lighting systems shall be approved for use in confined spaces as identified by the initial evaluation of confined spaces.

Depending upon the hazard assessment, lighting and electrical equipment may be either low voltage (50V or less), or conventional 120V portable lamps and tools if powered through an approved ground-fault circuit interrupter devices and the work is not an electrically hazardous location.

The safe methods to enter, exit, and escape for all personnel (including rescue personnel during retrieval) working in a permit-required confined space shall be developed during the job planning phase, specified on, and included, as needed, on the entry permit.

Personnel have been issued required personal protective equipment (PPE).

All persons who enter confined spaces shall be logged using a means which meets or exceeds 29 CFR 1926.146.

5.9 Ventilation of Confined Spaces

Powered ventilation shall occur before entry into any confined space and continue until the employees have exited the space. Layout of ventilation equipment will be made in such a manner that, to the greatest extent possible, the air is being sent throughout the entire confined space. Forced air ventilation shall come from a clean source and may not increase hazards.

Air hoses with diffusers (air horns) may not be used to provide forced ventilation unless the compressor being used is certified for breathable air and communication equipment and hearing protection is suitable based on the increased noise.

Air sampling shall be conducted prior to personnel entry to assure the safety of the space and periodic air sampling shall be continued thereafter in the space.

Forced ventilation will be used to:

- To remove existing contaminants or those created by work activities such as welding or mechanical equipment.
- As a method of maintaining controlling the ambient temperature of a confined space when the rise in temperature is cause by atmospheric conditions.

Ventilation shall occur only by forcing air into a confined space. If it is necessary to exhaust hazardous gases, such as those produced when welding, boring, or by the equipment, the air being forced into the confined space shall be increased by at least the amount that is being exhausted out of the space and to compensate for the equipment.

5.10 Performance of Work

The confined space attendant shall remain at the entry point of the confined space while personnel are inside any permit required confined space.

The confined space attendant shall ensure that only authorized personnel enter the confined space.

Confined space attendants shall not perform any other work activities except that they may also serve as the attending supervisor.

If an emergency or other unplanned event takes place during the course of work the Confined Space Work Permit is void.

The Attendant and Entry Supervisor have the authority to discontinue work activities at any time.

Compressed gas cylinders shall not be taken into any confined space.

The hoses of gas cutting and welding tools shall be inspected for leaks prior to taking them into any confined space and removed immediately after the work involving them has been concluded.

All persons who enter confined spaces shall comply with the provisions of this section and the confined space permit.

Sources of ignition (e.g., flame. arc, or spark) shall not be permitted in any confined space until tests have ensured that the percentage of combustible/flammable gas or vapor is not more than zero (0) % of the Lower Explosive Limit (LEL).

5.11 Duties of Authorized Entrants

The employer shall ensure that all authorized entrants:

- Know the hazards that may be faced during entry including information on the mode, signs, or symptoms, and consequences of the exposure.
- Properly use of equipment.
- Communicate with the attendant, as necessary, to enable the attendant to monitor the entrants status and to enable the attendant to alert entrants of the need to evacuate the space as required by this section.

The entrant shall alert the attendant whenever:

- The entrant recognizes any warning sign or symptom of exposure to a dangerous situation
- The entrant detects a prohibited condition

5.12 Duties of Authorized Attendants

The employer shall ensure that each attendant:

- Knows the hazards that may be faced during entry, including information on the mode, signs or symptoms, and consequences of the exposure.
- Is aware of possible behavioral effects of hazard exposure of authorized entrants.
- Continuously maintains an accurate count of authorized entrants in the permit space and ensures that the means used to identify authorized

entrants under this section accurately identifies who is in the permit space.

- Routinely observe the air quality monitor located outside of the space.
- Remains in a pre-designated location outside the permit space during entry operations until relieved by another attendant.
- Communicates with authorized entrants, as necessary, to monitor entrant status and to alert entrants of the need to evacuate the space.
- ***Be able to effectively communicate with members of the ROCIP Safety Team or the general public.***
- Monitors activities inside and outside the space to determine if it is safe for entrants to remain in the space and orders the authorized entrants to evacuate the permit space immediately under any of the following conditions:

  - If the attendant detects a prohibited condition.
    Air monitoring equipment detects levels not consistent with the established entry conditions.
  - If the attendant detects the behavioral effects of hazard exposure in an entrant.
  - If the attendant detects a situation outside the space that could endanger the entrants.
  - If the attendant cannot effectively and safely perform all the duties required under this section.

- Summon rescue and other emergency services as soon as the attendant determines that entrants may need assistance to escape from permit space hazards.
- Performs non-entry rescues as specified by the rescue procedures.
- Performs no duties that might interfere with the attendant's primary duty to monitor and protect the entrants.

Takes the following actions when unauthorized persons approach or enter a permit space while entry is underway:

- Warn the unauthorized persons that they must stay away from the permit space.
- Advise the unauthorized persons that they must exit immediately if they have entered the permit space.
- Inform the authorized entrants and the entry supervisor if unauthorized persons have entered the permit space.

5.13 Duties of the Entry Supervisor

- Knows the hazards that may be faced during entry including information on the mode, signs, or symptoms, and consequences of the exposure.

- Verifies that the appropriate entries have been made on the permit that all tests specified by the permit have been conducted and that all procedures and equipment specified by the permit are in place before endorsing the permit and allowing entry to begin.
- Terminates the entry and cancels the permit.
- Verifies that rescue services are available and that the means for summoning them are operable.
- Removes unauthorized individuals who enter or who attempt to enter the permit space during entry operations; and
- Determine whenever responsibility for a permit space entry operation is transferred and at intervals dictated by the hazards and operations performed within the space; that entry operations remain consistent with terms of the entry permit and that acceptable entry conditions are maintained.

5.14 Rescue

To facilitate non-entry rescue retrieval systems shall be used whenever an authorized entrant enters a permit space unless the retrieval equipment would increase the overall risk of entry or would not contribute to the rescue of the entrant. Retrieval systems shall meet the following requirements:

- When applicable, each authorized entrant shall be trained and use a full body harness with a retrieval line attached at the center of the entrant's back near shoulder level above the entrant's head, or at another point which can establish a successful removal of the entrant.

- The other end of the retrieval line shall be attached to a mechanical device designed for such purposes or fixed point outside the permit space in such a manner that rescue can begin as soon as the rescuer becomes aware that rescue is necessary. A mechanical device designed for personnel retrieval shall be available to retrieve personnel from vertical type permit spaces more than 4 feet deep.

- All contractors shall establish a site specific rescue plan in accordance with this section and 29 CFR 1910.146.

Note: The Permit Entry Program does not allow an attendant to enter a confined space for rescue.

5.15 Completion of Work

When the work is completed in a confined space the following as a minimum shall be completed:

- All personnel, tools, equipment and materials have been removed.

- The area surrounding the confined space shall be clean of materials, equipment, scraps, and debris.
- The supervisor responsible for the confined space work shall inspect the work location to ensure cleanup of materials, tools, and other items is complete.
- (Lockout) locks are removed when work is completed.

6. References

29 CFR 1910.146

Cranes, Hoists and Rigging – 8

1. Policy

Cranes and rigging shall be used safely and in accordance with their designed purpose and that of the manufacturer.

2. Purpose

To define the procedures and standards for the use, care, control and operation of cranes and associated rigging equipment.

3. Scope

All ROCIP projects.

4. Definitions

Crane means any mobile or fixed lifting equipment, excluding forklifts.

5. Requirements

5.1 Cranes

5.1.1 General Operation of Cranes

All cranes, rigging, flagging, and associated operations shall be in compliance with the new Federal Standard Subpart CC - Cranes and Derricks in Construction Final Rule effective November 2010.

Only persons designated by certification shall be permitted to operate cranes.

Crane operators shall be certified, trained, and deemed competent by the National Commission for the Certification of Crane Operators (NCCCO), or a training entity accredited by the NCCCO, the National Center for Construction Education and Research (NCCER), or National Commission for Certifying Agencies (NCCA) that provides crane operator certification for the type of crane being utilized. Skills must be verified by a function test with visual observation of operating skills on a predetermined course that adequately tests the operating skills. Verification of skills shall be documented. Certification shall be presented by the General Contractor to the ROCIP Construction Safety Manager prior to work requiring the use of cranes.

When a third party provides a crane operator the third party must provide written evidence that their employee is a Certified Operator in accordance with the above paragraph.

Cranes shall not be operated beyond 75% (percent of their configured lifting capacity) at the specified boom length in calm conditions. Any lift above 75% of a crane capacity requires a critical lift plan. All lift plans must approved by a Qualified Person and the Program Safety Manager.

Outriggers shall be fully extended when loads are being lifted and the crane shall be in a level position on a minimum of a 3'X3'X6" thick pad of rigid wood (hardwood or plywood) for cranes up to 50 tons and a minimum of 3'X3'X 1½" steel, composite, or other structurally sound material for cranes 50 to 100 tons. For cranes over 100 tons calculate the capacity of crane (in tons) / 5 = Blocking area (in square feet) of 2" steel, composite, or other structurally sound material or the recommendations of the manufacturer whichever is greater.

Prior to any lift the working surface shall be inspected to verify that the surface will bear the weight of the crane and its intended load and that there are no underground voids, tanks, utilities, etc.

If cranes are to be used to transport or walk loads from one location to another only cranes designated for this purpose shall be used and a thorough inspection of the intended route shall be made by a Competent Person.

Prior to traveling on any road the weight capacity of that route shall be verified to ensure that the surface will bear the weight of the crane and its intended load.

The swing radius of cranes shall be marked with a barrier to warn others (on the ground or in other equipment) of its swing radius.

Only industry established hand signals shall be used to direct the crane operator during lifting operations. Only trained and designated persons are permitted to give hand signals to crane operators except during an emergency. In this instance any person may give a stop signal.

The crane operator is ultimately responsible for making the decision to initiate the lift.

Crane operators are required to wear the minimum required personal protective equipment.

No employee(s) shall be permitted within the crane radius or conducting any service activity on a crane while it is being moved, lifting a load, or being operated in any manner.

The boom of mobile cranes shall be in the lowered and retracted position when moving from location to location or around the jobsite.

During severe storm or weather conditions the crane boom shall be lowered or placed in a position that precludes damage to the crane itself or immediate surroundings.

All cranes exceeding 80 tons shall be equipped with a functional boom mounted wind speed indicator or other means of accurately determine wind speed.

No operator shall hoist any load when the wind speed exceeds the safe limits stated in the operator's manual. Under no circumstance shall a lift be performed in wind speed in excess of 30 miles per hour unless approved by the Program Safety Manager.

All cranes shall be equipped with a functional and operational anti-two-block device.

No loads shall be hoisted or flown over personnel on the ground. Operator shall have a clear load path or the lift will not be made.

5.2 Hoists (overhead)

The safe working load of the overhead hoist as determined by the manufacturer shall be indicated on the hoist and this safe working load shall not be exceeded.

The supporting structure to which the hoist is attached shall have a safe working load equal to that of the hoist.

The support shall be arranged so as to provide for free movement of the hoist and shall not restrict the hoist from lining itself up with the load.

The hoist shall be installed only in locations that will permit the operator to stand clear of the load at all times.

Air hoists shall be connected to an air supply of sufficient capacity and pressure to safely operate the hoist. All air hoses supplying air shall be positively connected to prevent their becoming disconnected during use.

All overhead hoists in use shall meet the applicable requirements for construction, design, installation, testing, inspection, maintenance, and operation, as prescribed by the manufacturer.

Prior to using the crane/hoist the operator shall do a visual inspection to confirm the safety of this equipment. This includes a check of the wire rope, chain, sling(s), hook(s) and other components.

5.2.1 Inspection of Cranes

All cranes shall have a current annual inspection prior to delivery to the project provided by an approved third party inspection service.

Cranes shall be visually inspected and documented prior to each shift. The inspection shall include observation for deficiencies during operation. At a minimum this inspection shall include the following:

- All control mechanisms for adjustments;
- Control and drive mechanism for excessive wear of components and contamination by lubricants, water, or other foreign matter;
- Safety devices, including but not limited to boom angle indicators, boom stops, boom kick out devices, anti-two block devices, and load moment indicators, wind speed indicators, etc.;
- Air, hydraulic, and other pressurized lines for deterioration or leakage, particularly those which flex in normal operation;
- Hooks and latches for deformation, chemical damage, cracks, or wear;
- Wire rope reeving for compliance with hoisting equipment manufacturer's specifications;
- Electrical apparatus for malfunctioning, signs of excessive deterioration, dirt, or moisture accumulation;
- Hydraulic system for proper fluid level;
- Tires for proper inflation and condition;
- Ground conditions around the hoisting equipment for proper support, including ground settling under and around outriggers, ground water accumulation, or similar conditions;
- The hoisting equipment for level position; and
- The hoisting equipment for level position after each move and setup.
- If any deficiency is identified an immediate determination shall be made by the Competent Person as to whether the deficiency constitutes a hazard.

If defects or other unsafe conditions are found during an inspection the crane shall be taken out of service until repairs have made. A record of repairs and associated maintenance of cranes shall be documented.

Providers of rental or leased cranes shall provide proof to the ROCIP Safety Team that the annual inspection of their equipment is current. A copy of this annual inspection report shall be kept in the operator cab of cranes.

5.3 Rigging and Material Handling (slings, hooks and chains)

5.3.1 General

All rigging equipment shall have a demonstratable - documented safety factor of 5:1.

If chains are to be used for hoisting only grade 8 or above chains and their hooks will be used.

All rigging hooks and hooks on cranes except shakeout hooks shall have a functional safety latch.

Each sling shall be accompanied with a “Sling Rating Tag”. This tag will identify the maximum amount of load the sling is able to sustain.

Shackles shall be of the screw pin or threaded pin with nut and safety keeper type only. Clevis type devices are prohibited

Slings, hooks, and other rigging equipment shall be used in accordance with their designed purpose and manufacturer specifications.

Tag lines shall be used to guide and control loads that are being lifted and moved. Employees shall not be allowed to guide loads directly with their hands.

Employees shall be required to keep clear of loads being moved and lifted.

Employees shall not be permitted to ride or be on the headache ball, suspended loads, muck buckets, clams, or any other apparatus not designed for personnel.

Rigging equipment such as nylon slings and wire rope slings shall not be used in conjunction with personnel fall protection equipment or fall protection systems. This includes using rigging equipment as anchor points, beam wraps, or an extension of a fall arrest system.

5.3.2 Inspection

An inspection program for all slings, hooks, and chains shall be implemented. Manufacturer guidelines shall be followed for inspections.

Defective rigging equipment shall be tagged “Do Not Use” and taken out of service and removed from the work area and destroyed or returned to the owner.

Prior to each use a Competent Person shall inspect the condition of lifting hooks. Hooks that are deformed, or stretched 10% of the throat or 15% twist shall be removed from service, and destroyed.

5.4 Personnel Basket Use

Requires prior approval by a Qualified Person and the Program Safety Manager and shall be considered in accordance with OSH Act as the least preferred method of personnel transport. The personnel basket will only be used in accordance with the new federal standard.

5.5 Overhead Clearance

The operation of mobile equipment near energized electrical power lines shall conform to power line clearance specified in 1926 Subpart CC table A.

A person shall be designated to observe clearance of the equipment and give timely warning for all operations when any crane is operated within 20’ of a power line.

Any overhead wire shall be considered to be an energized line unless and until the person owning such line or the electrical utility authorities indicate that it is not an energized line and it has been visibly grounded.

Prior to work near transmitter towers where an electrical charge can be induced in the equipment or materials being handled, the transmitter shall be de-energized or tests shall be made to determine if electrical charge is induced on the crane. The following precautions shall be taken when necessary to dissipate induced voltages:

The equipment shall be provided with an electrical ground directly to the upper rotating structure supporting the boom; and ground jumper cables shall be attached to materials being handled by boom equipment when electrical charge is induced while working near energized transmitters. Contractors shall be provided with nonconductive poles having large alligator clips or other similar protection to attach the ground cable to the load.

6. References

29 CFR 1926.550, 29 CFR 1926.251, 29 CFR 1926 Subpart CC, ASME B30.5

Steel Erection - 9

1. Policy

All contractors involved with steel erection shall provide a safe method of steel erection in compliance with this Safety Manual and Federal Standards.

2. Purpose

To protect contractor employees from hazards associated with steel erection activities.

3. Scope

Applies to all ROCIP projects.

4. Definitions

All definitions can be referenced in 1926 subpart R

5. Requirements

5.1 Approval to begin steel erection

Before authorizing the commencement of steel erection the controlling contractor shall ensure that the steel erector is provided with the following written notifications:

The concrete in the footings, piers and walls and the mortar in the masonry piers and walls have attained, on the basis of an appropriate ASTM standard test method of field-cured samples either 75 percent of the intended minimum compressive design strength or sufficient strength to support the loads imposed during steel erection.

Any repairs, replacements and modifications to the anchor bolts were conducted in accordance with 1926.755(b).

Commencement of steel erection

A steel erection contractor shall not erect steel unless it has received written notification that the concrete in the footings, piers, and walls or the mortar in the masonry piers and walls has attained, on the basis of an appropriate ASTM standard test method of field-cured samples, either 75 percent of the intended minimum compressive design strength or sufficient strength to support the loads imposed during steel erection.

Site layout

The controlling contractor shall ensure that the following is provided and maintained:

- Adequate access roads into and through the site for the safe delivery and movement of derricks, cranes, trucks, other necessary equipment, and the material to be erected and means and methods for pedestrian and vehicular control. Exception: this requirement does not apply to roads outside of the construction site.
- A firm, properly graded, drained area, readily accessible to the work with adequate space for the safe storage of materials and the safe operation of the erector's equipment.

Pre-planning of overhead hoisting operations

All hoisting operations in steel erection shall be pre-planned to ensure that the requirements of 1926.753(d) are met.

All the provisions of subpart CC apply to hoisting and rigging with the exception of 1926.1431(a). (4) Cranes or derricks may be used to hoist employees on a personnel platform when work under this subpart is being conducted, provided that all provisions of § 1926.1431 (except for § 1926.1431(a)) are met.

Site-specific erection plan

Where employers elect, due to conditions specific to the site, to develop alternate means and methods that provide employee protection, a site-specific erection plan shall be developed by a Qualified Person and be available at the work site. *Under no circumstances will the steel erector be allowed to deviate from the 6' fall protection requirements of this manual.*

Pre-shift visual inspection of cranes

Cranes being used in steel erection activities shall be visually inspected and documented prior to each shift. The inspection shall include observation for deficiencies during operation.

If the deficiency is determined to constitute a hazard, the hoisting equipment shall be removed from service until the deficiency has been corrected.

The operator shall be responsible for those operations under the operator's direct control. Whenever there is any doubt as to safety, the operator shall have the authority to stop and refuse to handle loads until safety has been assured.

A qualified rigger (a rigger who is also a Qualified Person) shall inspect the rigging prior to each shift.

The headache ball, hook or load shall not be used to transport personnel.

Safety latches on hooks shall not be deactivated or made inoperable except:

- When a qualified rigger has determined that the hoisting and placing of purlins and single joists can be performed more safely by doing so; or
- When equivalent protection is provided in a site-specific erection plan.

Working under loads

Routes for suspended loads shall be pre-planned to ensure that no employee is required to work directly below a suspended load except for:

- Employees engaged in the initial connection of the steel; or
- Employees necessary for the hooking or unhooking of the load.

When working under suspended loads the following criteria shall be met:

- Materials being hoisted shall be rigged to prevent unintentional displacement;
- Hooks with self-closing safety latches or their equivalent shall be used to prevent components from slipping out of the hook; and
- All loads shall be rigged by a qualified rigger

Multiple lift rigging procedure

No multiple lifts (Christmas treeing) are allowed on any ROCIP project.

5.2 Structural Steel Assembly

Structural stability shall be maintained at all times during the erection process.

The following additional requirements shall apply for multi-story structures:

- The permanent floors shall be installed as the erection of structural member's progresses and there shall be not more than eight stories between the erection floor and the upper-most permanent floor except where the structural integrity is maintained as a result of the design.
- At no time shall there be more than four floors or 48 feet, whichever is less, of unfinished bolting or welding above the foundation or uppermost permanently secured floor, except where the structural integrity is maintained as a result of the design.

Walking/working surfaces

Tripping hazards. Shear connectors (such as headed steel studs, steel bars or steel lugs), reinforcing bars, deformed anchors, or threaded studs shall not be attached to the top flanges of beams, joists, or beam attachments so that they

project vertically from or horizontally across the top flange of the member until after the metal decking, or other walking/working surface, has been installed.

Installation of shear connectors on composite floors, roofs and bridge decks. When shear connectors are used in construction of composite floors, roofs and bridge decks, employees shall lay out and install the shear connectors after the metal decking has been installed, using the metal decking as a working platform.

Plumbing-up

When deemed necessary by a Competent Person, plumbing-up equipment shall be installed in conjunction with the steel erection process to ensure the stability of the structure.

When used plumbing-up equipment shall be in place and properly installed before the structure is loaded with construction material such as loads of joists, bundles of decking, or bundles of bridging.

Plumbing-up equipment shall be removed only with the approval of a Competent Person.

Metal decking

Hoisting, landing, and placing of metal decking bundles.

Bundle packaging and strapping shall not be used for hoisting unless specifically designed for that purpose.

If loose items such as dunnage, flashing, or other materials are placed on the top of metal decking bundles to be hoisted, such items shall be secured to the bundles.

Metal decking bundles shall be landed on framing members so that enough support is provided to allow the bundles to be unbanded without dislodging the bundles from the supports. Bundles shall not be unbanned until such time as the decking is to be placed.

At the end of the shift or when environmental or jobsite conditions require metal decking shall be secured against displacement.

Roof and floor holes and openings

Metal decking at roof and floor holes and openings shall be installed as follows:

- Framed metal deck openings shall have structural members turned down to allow continuous deck installation except where not allowed by structural design constraints or constructability.

- Roof and floor holes and openings shall be decked over. Where large size configuration or other structural design does not allow openings to be decked over (such as elevator shafts, stair wells, etc.) employees shall be protected from fall greater than 6 feet by guardrails or PPE.
- Metal decking holes and openings shall not be cut until immediately prior to being permanently filled with the equipment or structure needed or intended to fulfill its specific use and which meets the strength requirements of this section or shall be immediately covered.

Covering roof and floor openings

Covers for roof and floor openings shall be capable of supporting, without failure, twice the weight of the employees, equipment and materials that may be imposed on the cover at any one time.

All covers shall be secured when installed to prevent accidental displacement by the wind, equipment or employees.

All covers shall be painted with high-visibility paint or shall be marked with the word "HOLE" or "COVER" to provide warning of the hazard.

Smoke dome or skylight fixtures that have been installed are not considered covers for the purpose of this section unless they meet the strength requirements of this section.

Decking gaps around columns

Wire mesh, exterior plywood, or equivalent, shall be installed around columns where planks or metal decking do not fit tightly. The materials used must be of sufficient strength to provide fall protection for personnel and prevent objects from falling through.

Installation of metal decking

Metal decking shall be laid tightly and *immediately secured* upon placement to prevent accidental movement or displacement.

During initial placement metal decking panels shall be placed to ensure full support by structural members.

Derrick floors

A derrick floor shall be fully decked and/or planked and the steel member connections completed to support the intended floor loading.

Temporary loads placed on a derrick floor shall be distributed over the underlying support members so as to prevent local overloading of the deck material.

5.3 Column Anchorage

All columns shall be anchored by a minimum of 4 anchor rods (anchor bolts).

Each column anchor rod (anchor bolt) assembly, including the column-to-base plate weld and the column foundation, shall be designed to resist a minimum eccentric gravity load of 300 pounds located 18 inches from the extreme outer face of the column in each direction at the top of the column shaft.

Columns shall be set on level finished floors, pre-grouted leveling plates, leveling nuts, or shim packs which are adequate to transfer the construction loads.

All columns shall be evaluated by a Competent Person to determine whether guying or bracing is needed; if guying or bracing is needed, it shall be installed.

Repair, replacement or field modification of anchor rods (anchor bolts)

Anchor rods (anchor bolts) shall not be repaired, replaced, or field-modified without the approval of the project structural engineer of record.

Prior to the erection of a column the controlling contractor shall provide written notification to the steel erector if there has been any repair, replacement or modification of the anchor rods (anchor bolts) of that column. *The steel erector will notify the controlling contractor if they perform any modifications to the anchor bolts.*

5.4 Beams and Columns

During the final placing of solid web structural members the load shall not be released from the hoisting line until the members are secured with at least two bolts per connection, of the same size and strength as shown in the erection drawings, drawn up wrench-tight or the equivalent as specified by the project structural engineer of record, except as specified in this section.

A Competent Person shall determine if more than two bolts are necessary to ensure the stability of cantilevered members; if additional bolts are needed, they shall be installed.

Diagonal bracing. Solid web structural members used as diagonal bracing shall be secured by at least two bolts per connection drawn up wrench-tight or the equivalent as specified by the project structural engineer of record.

Double connections at columns and/or at beam webs over a column. When two structural members on opposite sides of a column web, or a beam web over a column, are connected sharing common connection holes, at least one bolt with its wrench-tight nut shall remain connected to the first member unless a shop-attached or field-attached seat or equivalent connection device is supplied with the member to secure the first member and prevent the column from being displaced.

If a seat or equivalent device is used, the seat (or device) shall be designed to support the load during the double connection process. It shall be adequately bolted or welded to both a supporting member and the first member before the nuts on the shared bolts are removed to make the double connection.

Column splices. Each column splice shall be designed to resist a minimum eccentric gravity load of 300 pounds located 18 inches from the extreme outer face of the column in each direction at the top of the column shaft.

Perimeter columns. Perimeter columns shall not be erected unless:

- The perimeter columns extend a minimum of 48 inches above the finished floor to permit installation of perimeter safety cables prior to erection of the next tier, except where constructability does not allow
- The perimeter columns have holes or other devices in or attached to perimeter columns at 42-45 inches above the finished floor and the midpoint between the finished floor and the top cable to permit installation of perimeter safety cables required by this section except where constructability does not allow

5.5 Joists

Except as provided elsewhere in this section, where steel joists are used and columns are not framed in at least two directions with solid web structural steel members, a steel joist shall be field-bolted at the column to provide lateral stability to the column during erection. For the installation of this joist:

A vertical stabilizer plate shall be provided on each column for steel joists. The plate shall be a minimum of 6 inch by 6 inch and shall extend at least 3 inches below the bottom chord of the joist with a $^{13/16}$ inch hole to provide an attachment point for guying or plumbing cables.

The bottom chords of steel joists at columns shall be stabilized to prevent rotation during erection.

Hoisting cables shall not be released until the seat at each end of the steel joist is field-bolted, and each end of the bottom chord is restrained by the column stabilizer plate.

Where constructability does not allow a steel joist to be installed at the column an alternate means of stabilizing joists shall be installed on both sides near the column and shall:

- Provide stability equivalent to that listed above;
  Be designed by a Qualified Person;
- Be shop installed; and
- Be included in the erection drawings

Hoisting cables shall not be released until the seat at each end of the steel joist is field-bolted and the joist is stabilized.

Where steel joists at or near columns span 60 feet or less, the joist shall be designed with sufficient strength to allow one employee to release the hoisting cable without the need for erection bridging.

Where steel joists at or near columns span more than 60 feet, the joists shall be set in tandem with all bridging installed unless an alternative method of erection, which provides equivalent stability to the steel joist, is designed by a Qualified Person and is included in the site-specific erection plan.

A steel joist or steel joist girder shall not be placed on any support structure unless such structure is stabilized.

When steel joist(s) are landed on a structure, they shall be secured to prevent unintentional displacement prior to installation.

No modification that affects the strength of a steel joist or steel joist girder shall be made without the approval of the project structural engineer of record.

Field-bolted joists

Except for steel joists that have been pre-assembled into panels, connections of individual steel joists to steel structures in bays of 40 feet or more shall be fabricated to allow for field bolting during erection.

These connections shall be field-bolted unless constructability does not allow.

Steel joists and steel joist girders shall not be used as anchorage points for a fall arrest system unless written approval to do so is obtained from a Qualified Person.

A bridging terminus point shall be established before bridging is installed.

Attachment of steel joists and steel joist girders

Each end of "K" series steel joists shall be attached to the support structure with a minimum of two $^{1/8}$-inch fillet welds 1 inch long or with two $^{1/2}$-inch bolts, or the equivalent.

Each end of "LH" and "DLH" series steel joists and steel joist girders shall be attached to the support structure with a minimum of two $^{1/4}$-inch fillet welds 2 inches long, or with two $^{3/4}$-inch bolts, or the equivalent.

Except as provided in this section, each steel joist shall be attached to the support structure; at least one end on both sides of the seat immediately upon placement in the final erection position and before additional joists are placed.

Panels that have been pre-assembled from steel joists with bridging shall be attached to the structure at each corner before the hoisting cables are released.

Erection of steel joists

Both sides of the seat of one end of each steel joist that requires bridging shall be attached to the support structure before hoisting cables are released.

For joists over 60 feet, both ends of the joist shall be attached as specified in this section and the provisions of this section met before the hoisting cables are released.

On steel joists that do not require erection bridging, only one employee shall be allowed on the joist until all bridging is installed and anchored.

For table A and B, see 29 CFR 1926 Subpart R.

Employees shall not be allowed on steel joists where the span of the steel joist is equal to or greater than the span shown in Tables A and B except in accordance with 1926.757(d).

When permanent bridging terminus points cannot be used during erection, additional temporary bridging terminus points are required to provide stability.

Erection bridging

Where the span of the steel joist is equal to or greater than the span shown in Tables A and B, the following shall apply:

- A row of bolted diagonal erection bridging shall be installed near the midspan of the steel joist;

- Hoisting cables shall not be released until this bolted diagonal erection bridging is installed and anchored; and
- No more than one employee shall be allowed on these spans until all other bridging is installed and anchored.

Where the span of the steel joist is over 60 feet through 100 feet, the following shall apply:

- All rows of bridging shall be bolted diagonal bridging;
- Two rows of bolted diagonal erection bridging shall be installed near the third points of the steel joist;
- Hoisting cables shall not be released until this bolted diagonal erection bridging is installed and anchored; and
- No more than two employees shall be allowed on these spans until all other bridging is installed and anchored.

Where the span of the steel joist is over 100 feet through 144 feet, the following shall apply:

- All rows of bridging shall be bolted diagonal bridging;
- Hoisting cables shall not be released until all bridging is installed and anchored; and
- No more than two employees shall be allowed on these spans until all bridging is installed and anchored.

For steel members spanning over 144 feet, the erection methods used shall be in accordance with 1926.756.

Where any steel joist specified in this section is a bottom chord bearing joist, a row of bolted diagonal bridging shall be provided near the support(s). This bridging shall be installed and anchored before the hoisting cable(s) is released.

When bolted diagonal erection bridging is required by this section, the following shall apply:

- The bridging shall be indicated on the erection drawing;
- The erection drawing shall be the exclusive indicator of the proper placement of this bridging;
- Shop-installed bridging clips, or functional equivalents, shall be used where the bridging bolts to the steel joists;
- When two pieces of bridging are attached to the steel joist by a common bolt, the nut that secures the first piece of bridging shall not be removed from the bolt for the attachment of the second; and
- Bridging attachments shall not protrude above the top chord of the steel joist.

Landing and placing loads

During the construction period the employer placing a load on steel joists shall ensure that the load is distributed so as not to exceed the carrying capacity of any steel joist.

Except as otherwise noted in this section, no construction loads are allowed on the steel joists until all bridging is installed and anchored and all joist-bearing ends are attached.

The weight of a bundle of joist bridging shall not exceed a total of 1,000 pounds. A bundle of joist bridging shall be placed on a minimum of three steel joists that are secured at one end. The edge of the bridging bundle shall be positioned within 1 foot of the secured end.

No bundle of decking may be placed on steel joists until all bridging has been installed and anchored and all joist bearing ends attached unless all of the following conditions are met:

- The employer has first determined from a Qualified Person and documented in a site-specific erection plan that the structure or portion of the structure is capable of supporting the load;
- The bundle of decking is placed on a minimum of three steel joists;
- The joists supporting the bundle of decking are attached at both ends;
- At least one row of bridging is installed and anchored;
- The total weight of the bundle of decking does not exceed 4,000 pounds; and
- Placement of the bundle of decking shall be in accordance with this section.

The edge of the construction load shall be placed within 1 foot of the bearing surface of the joist end.

5.6 All of the requirements of this subpart apply to the erection of systems-engineered metal buildings except column anchorage and open web steel joists.

Each structural column shall be anchored by a minimum of four anchor rods (anchor bolts).

Rigid frames shall have 50 percent of their bolts or the number of bolts specified by the manufacturer (whichever is greater) installed and tightened on both sides of the web adjacent to each flange before the hoisting equipment is released.

Construction loads shall not be placed on any structural steel framework unless such framework is safely bolted, welded or otherwise adequately secured.

In girt and eave strut-to-frame connections, when girts or eave struts share common connection holes, at least one bolt with its wrench-tight nut shall remain connected to the first member unless a manufacturer-supplied, field-attached seat or similar connection device is present to secure the first member so that the girt or eave strut is always secured against displacement.

Both ends of all steel joists or cold-formed joists shall be fully bolted and/or welded to the support structure before:

- Releasing the hoisting cables;
- Allowing an employee on the joists; or
- Allowing any construction loads on the joists.

Purlins and girts shall not be used as an anchorage point for a fall arrest system unless written approval is obtained from a Qualified Person.

Purlins may only be used as a walking/working surface when installing safety systems, after all permanent bridging has been installed and fall protection is provided.

Construction loads may be placed only within a zone that is within 8 feet of the center-line of the primary support member.

5.7 Securing loose items aloft. All materials, equipment, and tools, which are not in use while aloft shall be secured against accidental displacement.

Protection from falling objects other than materials being hoisted. The controlling contractor shall bar other construction processes below steel erection unless overhead protection for the employees below is provided.

5.8 Fall Protection

Each employee engaged in a steel erection activity that is on a walking/working surface with an unprotected side or edge which is 6 feet (six-feet) or more above a lower level shall be protected from falling by the use of guardrail systems, safety net systems, positioning device systems, or personal fall arrest systems. Fall protection shall be 100% on all projects *(2 lanyards fall arrest systems).*

This shall apply 100% (one-hundred percent) of the time on all ROCIP projects.

Perimeter safety cables. On multi-story structures perimeter safety cables shall be installed at the final interior and exterior perimeters of the floors as soon as the metal decking has been installed.

Connectors shall be protected from fall hazards as provided in this section.

Connectors. Each connector shall:

- Be protected in accordance with this section from fall hazards of more than 6 feet above a lower level;
- Have completed connector training; and
- Be provided with, wear, and utilize at heights over 6 feet above a lower level with a personal fall arrest system, positioning device system or fall restraint system.

Criteria for fall protection equipment

Guardrail systems, safety net systems, personal fall arrest systems, positioning device systems and their components shall conform to fall protection section of this manual.

Fall arrest system components shall be used in fall restraint systems and shall conform to the fall protection section of this manual. Body harnesses shall be used in fall restraint systems.

Perimeter safety cables shall meet the criteria for guardrail systems.

Custody of fall protection. Fall protection provided by the steel erector shall remain in the area where steel erection activity has been completed to be used by other trades only if the controlling contractor or its authorized representative:

- Has directed the steel erector to leave the fall protection in place; and
- Has inspected and accepted control and responsibility of the fall protection prior to authorizing persons other than steel erectors to work in the area.

5.9 Training

The employer shall provide training to meet the requirement for steel erection. All training will be conducted in accordance with Federal and State laws, and best industry practices. Training will include, but not limited to 29 CFR 1926 Subpart R

The following provisions supplement the requirements of 1926.21 regarding the hazards addressed in this chapter.

Training Personnel. Training required by this section shall be provided by a Qualified Person(s).

Fall hazard training. The employer shall provide a training program for all employees exposed to fall hazards. The program shall include training and instruction in the following areas:

- The recognition and identification of fall hazards in the work area.
- The use and operation of guardrail systems (including perimeter safety cable systems), personal fall arrest systems, positioning device systems, fall restraint systems, safety net systems, and other protection to be used.
- The correct procedures for erecting, maintaining, disassembling, and inspecting the fall protection systems to be used.
- The procedures to be followed to prevent falls to lower levels and through or into holes and openings in walking/working surfaces and walls; and
- The fall protection requirements of this section.

Special training programs. In addition to the training required in this section, the employer shall provide special training to employees engaged in the following activities:

Connector procedures. The employer shall ensure that each connector has been provided training in the following areas:

- The nature of the hazards associated with connecting; and
- The establishment, access, proper connecting techniques and work practices required by 1926.756(c) and 1926.760(b).

Rigging procedures

- The nature of the hazards associated with rigging
- Proper rigging procedures

Controlled Decking Zone Procedures.

- Where CDZs are being used the employer shall assure that each employee has been provided training in the following areas:

- The nature of the hazards associated with work within a controlled decking zone; and

- The establishment, access, proper installation techniques and work practices required by § 1926.760(c) and § 1926.754(e).

6. References

29 CFR 1926 Subpart R

Emergency Preparedness - 10

1. Policy

Foreseeable emergency situations shall be prepared for and controlled to the greatest extent possible.

2. Purpose

To maintain a high level of responsiveness to emergency situations

3. Scope

Applies to all ROCIP projects.

4. Definitions

Emergency means (for the purpose of this section) an adverse event(s) beyond the means of the contractors in the immediate area to satisfactorily restore to a safe and healthful work environment.

Assembly Points/Safe Areas means a location safely outside the evacuation area designated for assembly.

5. Requirements

5.1 General

All contractors shall have an emergency action plan which shall be documented and include at a minimum the following components:

- Hazard assessment of emergencies reasonably expected at the worksite.
- Emergency evacuation procedures and evacuation route assignments.
- Procedures to be followed by personnel required to remain to operate/maintain critical processes or equipment.
- Procedures to account for evacuated personnel.
- Rescue and medical duties for those contractors required to perform them.
- A list of key emergency response personnel and personnel available to provide additional information or explanation of duties required under this plan or processes involved.
- Emergency notification/alarm systems.
- Training.
- Program review and evaluation.

5.1.1 Hazard assessment / emergencies

Worksite assessment and the identification of emergencies are critical to the development of a program that will be responsive, all inclusive, and effective in preparing against and responding to worksite emergencies. Emergency types may include:

- Injury and illness.
- Fire and explosion.
- Chemical spills and releases.
- Natural disasters such as tornadoes, lightning storms, floods, etc.
- Civil strife and bomb threats.

When practicable the contractor shall develop a diagram / drawing of the facility or jobsite. It should indicate the placement of buildings, fuel and flammable/combustible material storage, parking, traffic patterns, assembly areas, etc. A separate layout of each facility or jobsite should illustrate:

- Ingress and egress, hallways, routes of travel, and emergency exits.
- Location of fire suppression equipment.
- Location of flammable / combustible product storage.
- Location of first aid kits and other emergency equipment.

5.1.2 Emergency evacuation procedures and routes

Depending on the emergency situation employees may be required to evacuate their specific work area or the facility. This should be under the direction of supervisory personnel or designated response personnel.

All ROCIP projects shall establish primary and secondary means of egress to assembly points (‘safe areas’) subject to pre-established means determined by owners or primary contractors.

In an extreme emergency situation it may be necessary to quickly evacuate the work site to a designated area. Owner controlled pre-established evacuation procedures shall supersede this procedure in these circumstances.

- Primary and alternate escape routes from the work area or building(s) shall be developed and maintained.
- In the event of a toxic chemical release contractors shall evacuate upwind or across wind whichever is the most feasible.
- All means of egress shall be continually maintained and free from all obstructions and impediments.

- Evacuation routes shall not go through higher hazard areas. Included with the evacuation routes shall be designated assembly points.

As soon as possible after the evacuation and as often as deemed safe and necessary during the evacuation, the General Contractor, site safety representative, and other site management personnel shall make or direct a complete inspection of the work site to ensure that it is safe from the threats posed by the original evacuation hazard or unattended equipment left by evacuated contractors.

5.1.3 Critical process / equipment maintenance

In certain instances key personnel may be required to remain at their positions to maintain critical operations.

The General Contractor shall list in detail the procedures to be taken by those contractors who shall remain behind to care for essential operations until their evacuation becomes absolutely necessary.

Essential operations may include such activities as monitoring power supplies, water supplies, and other essential services that cannot be shut down for every emergency alarm; as well as the use of fire extinguishers.

In all such instances these persons shall be provided with the appropriate protective equipment and an appropriate means of communication with senior response personnel.

5.1.4 Key personnel assignments / responsibilities

The emergency plan shall detail the personnel and associated duties that they must perform in the event of an emergency:

- Senior management shall oversee all emergency activities.
- Supervision shall coordinate area evacuation procedures detailing a headcount to the senior supervisor and any employees who are missing and providing their location prior to the evacuation.
- Safety personnel shall insure that the site emergency plans are in unison with any owner controlled plans.

Additional key responsibilities include:

- An emergency response team personnel list shall be developed, maintained at the work site and kept up to date as assignments change.

- The list shall include key personnel's name, their telephone/Nextel contact number, and agencies to contact in case of emergency.
- The list shall be posted near each telephone in a site office area on contractors' bulletin boards and in other prominent locations.
- The General Contractor for the work site shall notify local government agencies immediately when an emergency has the potential to affect public health and safety.

5.1.5 Contractors evacuation assembly points and headcount

Assembly points shall be developed in unison with the established primary and secondary means of egress. These locations shall be act as "safe areas" for evacuated employees. Consideration should be given to the location of the assembly point as well as its ability to protect employees from the effects of the emergency condition as well as the associated weather conditions (i.e., time of day, temperature extremes, rain, etc.)

- All evacuees shall gather at the designated assembly area(s). A list of primary and alternate designated safe areas shall be included along with the emergency escape route assignments.
- Assembly points shall be at a safe distance from the building and/or work site; well off roadways, fire lanes, and other emergency access routes.
- Once the evacuees have gathered it is necessary to have a means of accounting for personnel during an evacuation.
- The General Contractor shall be responsible for accounting for personnel and informing law enforcement or emergency personnel of those persons believed missing.

5.1.6 Emergency notification and alarm systems

All plans shall detail the methods and equipment utilized to notify employees of an emergency evacuation situation. General characteristics of appropriate methods include; a consistent and continuously available communication system, methods capable of being heard over background noise, and in the case of audible alarms, individually recognizable.

To report a possible emergency evacuation situation the following procedure shall be followed:

- If there is a question as to whether the emergency is severe enough to evacuate or not employees are encouraged to leave their work areas on their own and go to a predetermined safe area.

- A work area supervisor with a radio shall call the General Contractor who shall sound the emergency alarm when necessary unless work site requirements give that authority to another Qualified Person.
- Field supervisors without radios shall seek out supervisors with radios for specific evacuation instructions.
- It is important to remember that once an emergency is declared – non-emergency radio traffic must be stopped.
- Once the evacuation signal is sounded all employees supervision shall assist in a quick and orderly evacuation reporting immediately to the General Contractor when the evacuation is complete.
- When the evacuation signal sounds employees shall shut down and make safe any equipment they are using or that is being used in their work area (within their span of control).
- Contractors and their employees shall then go calmly but quickly to the designated safe area.
- In the event of a toxic chemical release employees shall evacuate upwind or across wind (whichever is the most feasible) utilizing the most effective escape route.
- Employees shall group together with their crews and check in with their supervisor immediately after evacuation.
- Employees shall stay out of the evacuated area until the all-clear signal is given. All employees shall be informed of the evacuation procedure for the all-clear signal.

5.1.7 Emergency response duties (rescue, first aid, etc.)

In certain operations employees may be required to support location emergency response activities. In these situations employees must be trained and identified within the projects site emergency plan.

A general requirement of all emergency plans shall be to insure that rescue services are identified and in the case of sites that have designated first aid personnel that those personnel are available and capable of supporting those activities in the event they are needed.

5.1.8 Training

Contractor shall provide training to all of their employees at the time of initial work assignment and retraining annually thereafter (as a minimum) or if conditions on site change impacting the emergency plan. Training should address the following areas:

- The site emergency plan.
- Emergency communications systems – both internal and external as well as back-up system.

- Emergency notification procedures and alarm systems.
- Site evacuation plans and assembly points.
- Specific training to designated employees who are required to direct emergency equipment to the area and assist in the emergency including roles/responsibilities and equipment operation procedures.
- Employees required to respond to emergency situations as emergency technicians, etc. shall be trained in accordance with 29 CFR1910.120 (q)(6)

5.1.9 Program review and evaluation

The effectiveness of emergency programs shall be evaluated and reviewed on an as needed basis.

5.2 Hazardous Chemical Spills or Rupture

In the event of ruptured tanks, lines, vessels, tank cars, rail cars, dikes, and other forms of containers/containment of hazardous chemicals all affected personnel shall be immediately evacuated from the emergency area by supervision.

The ROCIP Safety Team and the General Contractor shall be immediately notified of such an event.

The General Contractor's safety representative and/or management shall take necessary action for protection of all contractors' employees and, if necessary, shall notify the owner and other personnel responsible for cleanup.

5.3 Severe Weather Procedure

One major type of condition to consider in the development of an emergency plan is that of severe weather. This may come in the form of severe storms, floods, lightning storms, tornadoes, etc.

All contractors shall evaluate their geographic area and incorporate responses that address appropriate foreseeable weather conditions in their area of operation as an attachment to this policy section. Additional requirements include:

- All work sites with offices shall have a means to assure they are provided with as much advance warning of adverse weather conditions as possible.
- The General Contractor or site safety coordinator is responsible for maintaining up-to-date information regarding approaching storms. They shall provide adequate warning to allow the appropriate individuals to secure the equipment and materials under their jurisdiction.

- All supervisors shall be responsible for ensuring that all employees follow these procedures.
- Safe locations shall be designated for employees in the event of tornadoes.
- The General Contractor shall follow the instructions of local authorities and the weather service so that the necessary precautions can be taken in the event of severe weather

5.4 Bomb Threats

All bomb threats shall be taken seriously.

Immediately notify the City of Austin and all contractors at the work site of the threat, who then shall contact their employees, as necessary.

Once the bomb threat has been received the General Contractor shall decide whether to evacuate based on consultation with emergency responders, civil authorities, and other local representatives.

In all cases two way radios and cell phones shall be shut off in the affected area due to the fact that the frequencies used by them could activate the device.

In the event an employee receives a bomb threat the employees should try and remain calm and ascertain as much information as possible on the caller and their intentions.

5.5 Workplace Violence

City of Austin has a zero-tolerance for workplace violence, verbal and nonverbal threats, and related actions. Employees are expected to report violent incidents promptly and accurately to their immediate supervisor.

If a violent incident occurs the General Contractor shall focus first on providing for the medical and psychological needs of affected employees.

Other immediate steps include:

- Reporting the incident to local law enforcement.
- Securing work areas where disturbances occurred.
- Accounting for all employees and ensuring the physical safety of those remaining in the area as soon as possible.
- Providing for site security.
- Quickly assessing the work area to determine if it is safe or if damage has occurred.
- Providing critical incident debriefing to victims, witnesses, and other affected employees.

- Providing accurate communication to outside agencies and law enforcement.
- Any media communication shall be channeled through the City of Austin Risk Management department or their designee.
- Provisions for follow-up after medical and psychological treatment, medical confidentiality, and protection from discrimination should be arranged with the expressed intent to prevent the victims of workplace violence from suffering further loss.
- Notify the ROCIP Safety Team and Risk Management so as to obtain assistance with EAP issues and employees concerns.

6. References

CFR 29 CFR 1910.38, CFR 29 CFR 1910.165, CFR 29 CFR 1926.35, CFR 29 CFR 1926.159

Energy Control (Lockout/Tagout) - 11

1. Policy

Work activities associated with energized equipment or processes shall be controlled prior to initiating by verifying a zero energy state. No “Hot Work” will be conducted on any ROCIP project unless there is a verifiable demonstrated need for such work.

2. Purpose

To establish safe practices associated with equipment or processes that involve hazardous energy sources.

3. Scope

Applies to all ROCIP projects that perform activities such as, but not limited to, erecting, installing, constructing, repairing, adjusting, inspecting, cleaning, operating or maintaining equipment/machines/processes whereby hazardous energy sources are involved.

Note special exception to policy: equipment/machines that have an electrical plug as the sole hazardous energy source and can reach a zero energy state by simply being unplugged are exempt from this policy as long as control of the plug can be maintained at all times.

4. Definitions

All definitions can be referenced in 29 CFR1910. 147

Affected Employees means any employee who is required to work in the area of equipment/machine/processes where Lockout procedures are being implemented.

Authorized Employees means any employee who utilizes Lockout procedures on equipment/machines/processes.

Hazardous Energy Source means any type of energy that could injure anyone working on or near the equipment/machine/process if released as a result of work activities. Examples of hazardous energy sources include, but are not limited to the following: electrical; hydraulic (fluid/liquids); pneumatic (air); chemical; radiation; thermal; mechanical (from stored energy, like in flywheels and springs); and mechanical (from gravity).

Hot Work means working on live or energized parts.

Other Personnel means non-ROCIP contractors personnel or visitors to any work area where ROCIP authorized contractors are utilizing processes outlined in this Policy.

Zero Energy State means the equipment/machine/process has been purged of and blocked from hazardous energy sources that has no hazardous energy is present.

5. Requirements

All contractors whose work requires their employees to work on energized systems or utilize equipment that encompass the City's processes *shall develop a site specific lockout/tag-out plan in conjunction with the City.*

If equipment/machine/process will accommodate a lockout device it must be locked out. If the equipment/machine/process cannot be locked out it must be disabled in such a manner as to ensure that there is no possibility of re-energization.

5.1 Identifying Applicable Equipment/Machines/Processes

The following shall be documented:

- All equipment/machine/processes where this policy applies
- All owned energy isolating devices for applicable procedures related to the identified equipment/machine/processes
- All applicable lockout mechanisms necessary for applicable energy control procedures related to the identified equipment/machine/processes
- All applicable energy control procedures related to the identified equipment/machine/processes

This information shall be developed by the employer and kept on the job site and updated as equipment/machines/processes and lockout mechanisms are introduced or changed.

5.2 Training

The employer shall provide training to meet the requirement for the control of hazardous energy and to ensure that the proper procedures are understood and skills are acquired by the employees. All training will be conducted in accordance with Federal and State laws, and best industry practices. Training will include, but not limited to 29 CFR 1910.147

Training shall be provided to each employee:

- To ensure that the purpose and function of the energy control program are understood by employees and that the knowledge and skills required for the safe application, usage, and removal of the energy controls are acquired.

- Each affected employees shall receive training on the procedures for the expressed purpose of ensuring awareness of the prohibition of removing control mechanisms and Lockout/Tag-out devices on applicable equipment, machines, and processes.

- Each authorized employee shall receive special training in the recognition of hazardous energy sources the specific and/or common equipment or processes within respective work areas, types of necessary control mechanisms, and the procedures. This part applies when employees are working in conjunction with an existing hazardous energy sources.

When the supervisor or safety representative has reason to believe or observes deviations from the established procedures or inadequacies in the employee's knowledge or use of these procedures retraining is required. Affected or authorized employee shall be immediately re-trained if their actions during related work activities violated any portion of this policy.

5.3 Lockout Procedures (in order of action)

5.3.1 Preparation

Authorized employees shall verbally and in writing notify all affected employees including, if applicable, City of Austin personnel before commencing work activities.

5.3.2 Lockout Application

Perform the actions BEFORE commencing other work activities in the following order:

- Identify all operational devices for the equipment or process and place them in the off or neutral position.

- Identify all known energy control devices for the equipment or process and place them in the off or neutral position and utilize a Lockout device to secure them in that position. If the proper Lockout procedures or a hazardous energy source is unknown activities will stop and the authorized employee shall immediately contact their supervisor and the safety representative for assistance or instructions before proceeding.

- Tag the Lockout mechanism and mark the tag with your name and contact information.

- Visually inspect the equipment or process and use appropriate electronic or mechanical means to verify that a zero energy state has been reached.

- Ensure that all affected and authorized employees are clear from the equipment or process then try to activate the equipment or process by initiating all identified operation devices to ensure that a zero energy state has been achieved. Apply additional locks to any energy controlling devices having unprotected energy sources and repeat this procedure until a zero energy state is obtained. Proceed with the required work activities for the equipment or process only after a zero energy state is obtained.

- If a zero energy state cannot be reached contact your supervisor and the safety representative for instructions.

- *Each employee involved in work on equipment/machine/process shall have his/her lock on the energy isolating device prior to work commencing.*

5.3.3 Release from Lockout

- After service or maintenance is completed check the area to ensure that no employees are exposed.
- Remove all tools and repair equipment.
- Ensure that all guards have been replaced and all safety interlocks reactivated (if so equipped).
- Verify that the operating controls are in the “off” or “neutral” position.
- Notify all affected employees that lockout is going to be discontinued and the reason why. This information is also to be noted in the lockout/tag-out form.
- Conduct a head count to be sure that everyone is clear of the start-up area.
- Remove all lockout and tag devices and activate the energy isolation devices to restore energy.
- The authorized person is to restore equipment to normal operation.
- Record this information on the lockout/tag-out form.

Only the authorized employees who placed the Lockout mechanism can remove the device. If the authorized employee that placed the device is not available to remove the device refer to the emergency lock removal section of this policy for Emergency Lock Removal Procedures.

5.4 Testing/Diagnosis/Re-positioning Procedures during Lockout

Perform the following actions in order:

- Clear the equipment/machine/process of tools, materials, and personnel.
- Remove the applicable lockout mechanisms from the energy isolating device.
- Energize the applicable portion of the equipment/machine/process.
- Proceed with the test/diagnosis/re-positioning.
- De-energize the equipment/machine/process in the same manner as defined above.
- Re-apply the applicable lockout mechanisms to the energy isolating device.
- Re-test operation devices to ensure a zero energy state is in place.
- Continue work and repeat this procedure as necessary.

5.5 Emergency Lock Removal Procedures

A lock removal procedure form shall be utilized for documentation. Every effort shall be made to personally contact the authorized employee prior to their lock being removed.

Prior to any lock being removed the supervisor, authorized employee, and the safety representative shall conduct the release from lockout procedures stated above to ensure it is safe to remove the lock.

Only the direct supervisor of an authorized employee who is familiar with the hazards is allowed to remove their lock. If the applicable supervisor is not physically capable only another authorized employee can be provided with the authority directly by the applicable supervisor.

In either event the direct supervisor of the authorized employees who originally placed the lockout mechanism(s) to be removed shall inform that employee of the removal BEFORE that employee returns to that work area. This communication shall be documented on an appropriate form. Under no circumstance can a City of Austin employees lock be removed without express written authorization of the particular department head.

5.6 Lockout Documentation

Documentation of lockout mechanism shall be maintained.

5.7 Lockout Control Mechanisms

5.7.1 Locks

Each authorized employee shall be issued a lock (or locks) individually keyed and manufactured of a standard size, shape, and/or color.

Each controlling contractor shall require a list of subcontractors and corresponding lock numbers maintained at the work site.

5.7.2 Multi-lock Hasps

A multi-lock hasp shall be utilized when more than one authorized employee is performing work on the equipment/machine/process.

When a traditional multi-lock hasp will not provide enough attachment points for all authorized employee, another method shall be established (e.g. lockout box, lockout cabinet, etc.).

5.7.3 Tags

Tags used shall be durable standardized in type and color and contain the employee's name and contact information. Tags shall be used in conjunction with locks. These tags shall be established in accordance with 29 CFR 1910.147

5.8 Multi-Contractor Site/Subcontractor

Authorized employees shall inform the supervision of other employers in a multi-employer work site of all aspects covered by this manual section.

Contractors for ROCIP are required to meet or exceed all aspects covered by this manual section.

5.9 Policy Review and Certification

Contractors shall ensure that their program meet or exceeds the ROCIP program and is reviewed on an as needed basis.

6. References

CFR 29 CFR 1910.147, CFR 29 CFR 1926.417

Equipment Other Than Cranes & Hoists - 12

1. Policy

All equipment shall be operated, maintained, and controlled in a safe manner and in accordance with manufacturer's guidelines.

2. Purpose

To define the procedures and standards applying to the care, control, maintenance, inspection, and operation of the noted equipment.

3. Scope

All ROCIP projects.

4. Definitions

Mobile equipment means earthmoving equipment: scrapers, loaders, crawler or wheel tractors, bulldozers, off-highway trucks, graders, agricultural and industrial tractors, backhoes and similar equipment.

Mobile unit means a combination of an aerial device, its vehicle, and related equipment.

Vehicle means any carrier that is not manually propelled.

5. Requirements

5.1 General

Only qualified operators designated by the contractor shall operate equipment.

Regular preventative maintenance programs shall be established in accordance with regulatory requirements or industry standards for each type of equipment.

All operators of the equipment shall be trained in safe operation of the equipment prior to being authorized to operate it. All operators who operate equipment on public roadways and any other public property shall hold a valid state driver's license.

Unsafe operators observed shall be prohibited from further equipment operation until retrained.

Persons may only be transported on equipment with designed seating capacity for such persons.

Unauthorized persons shall not be transported on equipment even if the equipment is designed for such transport.

Unsafe conditions or function failure shall be reported to management. Equipment that is unsafe shall not be operated and tagged out of service.

Personal protective equipment (PPE) assessments shall be made for each type of equipment operations and the appropriate PPE provided.

Employees taking prescription medication shall notify their supervisor if the medication warns against operation of machinery/vehicles/equipment. Supervisors shall take necessary actions with the appropriate employee and the prescribing physician to provide direction on related work activities.

5.2 Mobile Equipment

Mobile equipment shall have functional/operable:

- Braking system(s).
- Taillights/when applied.
- Brake lights/when applied.
- Wipers for front windows.
- Seat belt restraint systems.
- Head lights (when operated in low light or at night).
- Reflective devices to warn of their presence in accordance with federal standards.
- Back-up alarms, horns, and mirrors.
- Fire extinguishers

These items shall be in place and operable at all times.

Mobile equipment (not normally operated on public highways or roadways) shall display a slow-moving equipment symbol when traveling on them and be operated in accordance with local and state highway regulations.

Operators shall wear seat belts at all times while operating mobile equipment.

Material, tools, and other objects shall not be transported in the cab of mobile equipment.

Personnel are not permitted to ride:

- In mobile equipment cabs with operators (except during training exercises or when such equipment is designed and equipped by the manufacturer for additional riders).

- In buckets.
- On fenders.
- On running boards.
- On forklifts.
- Any other part of mobile equipment.
- On any load being transported by mobile equipment.

Mobile equipment shall be inspected at the beginning of each shift to assure that parts, equipment, and accessories are in safe operating condition and free of apparent damage that could cause failure while in use. Inspections shall be documented and include, at a minimum, the following when applicable:

- Service brakes, including trailer brake connections.
- Parking system (hand brake).
- Emergency stopping system (brakes).
- Tires.
- Horn.
- Steering mechanism.
- Coupling devices.
- Seat belts.
- Operating controls.
- Safety devices.
- Window and cab glass.
- Power window wipers.
- Defogging and defrosting equipment.
- Hydraulics for leaks.
- Back-up alarms.
- Mirrors.
- Fire extinguishers.

Defects that affect the safe operation of equipment shall be corrected before the unit is placed in service.

Only Qualified Personnel shall repair equipment.

When performing maintenance and/or repairs on movable parts of mobile equipment such as hydraulic rams, dump beds, buckets that create a pinch point shall be blocked, de-energized, cribbed or otherwise immobilized by other such activity.

Bulldozer blades, scraper bowls, front end-loader buckets, dump bodies, and similar equipment shall be either fully lowered or blocked when being repaired or when not in use. All controls shall be in a neutral position with the motors stopped and brakes set unless work being performed requires otherwise.

All mobile wheeled equipment shall be chocked front and rear during repair to prevent unintentional movement.

Whenever mobile equipment is parked the parking brake shall be set. Such equipment parked on inclines shall have the wheels chocked and the parking brake set.

During fueling operations the engine of mobile equipment shall be turned off and movable parts such as dozer blades or buckets shall be lowered to the ground.

Mobile equipment fueled with gasoline shall not be operated in enclosed areas such as buildings, tunnels, bore pits, etc.

Mobile equipment fueled with compressed gas within enclosed areas shall be operated in accordance with manufacturer specifications.

The use, care, and charging of mobile equipment using batteries shall be in accordance with manufacturer specifications.

All cab glass shall be safety glass or equivalent that introduces no visible distortion affecting the safe operation of any mobile equipment. Glass that is cracked or broken shall be replaced before the mobile equipment is operated. When window glass is subject to conditions that cause fogging or frosting the windshields shall be equipped with operable defogging or defrosting devices.

Combustible and flammable materials that pose a potential hazard shall be removed from the immediate area prior to operations.

The operation of mobile equipment near energized electrical power lines shall conform to clearances defined in 1926.400.

A person shall be designated to observe clearance of the equipment and give timely warning for all operations where it is difficult for the operator to maintain the desired clearance by visual means.

Cage-type boom guards, insulating links, or proximity warning devices may be used on equipment, but the use of such devices shall not alter the requirements of any other regulation of this part even if such device is required by law or regulation.

Any overhead wire shall be considered to be an energized line unless and until the person owning such line or the electrical utility authorities indicate that it is not an energized line and/or it has been visibly grounded.

Prior to work near transmitter towers where an electrical charge can be induced in the equipment or materials being handled, the transmitter shall be de-

energized or tests shall be made to determine if electrical charge is induced on the crane. The following precautions shall be taken when necessary to dissipate induced voltages.

The equipment shall be provided with an electrical ground directly to the upper rotating structure supporting the boom; and ground jumper cables shall be attached to materials being handled by boom equipment when electrical charge is induced while working near energized transmitters. Employee shall be provided with nonconductive poles having large alligator clips or other similar protection to attach the ground cable to the load.

All haulage vehicles, whose payload is loaded by means of cranes, excavator, loaders, or similar equipment, shall have a cab shield and/or canopy adequate to protect the operator from shifting or falling materials.

Personnel shall only ride in compartments designed for occupancy. These areas shall have a firmly attached seat and seat belt for each occupant. Seat belts and anchorage's meeting the requirements of 29 CFR 1926.602.2 and 49 CFR 571 Department of Transportation Federal Motor Vehicle Safety Standards shall be installed in all construction equipment except for equipment that does not have a ROPS or cab.

Trucks with dump bodies shall be equipped with positive means of support, permanently attached, and capable of being locked in position to prevent accidental lowering of the body while maintenance or inspection work is being done.

Operating levers controlling hoisting or dumping devices on haulage bodies shall be equipped with a latch or other device which will prevent accidental starting or tripping of the mechanism.

Trip handles for tailgates of dump trucks shall be so arranged that in dumping the operator will be in the clear.

6. References

CFR 29 CFR 1910 Subparts F, N, CFR 29 CFR 1926 Subparts H, N, O, W

Excavation & Trenching - 13

1. Policy

Excavation work activities shall be conducted safely with associated exposures eliminated and/or controlled.

2. Purpose

To ensure that every employee involved in excavation work is protected against foreseeable associated hazards.

3. Scope

Applies to all ROCIP projects where construction and service work activities require excavation or trenching.

4. Definitions

4.1 General Definitions

All definitions from 29 CFR 1926 subpart P apply.

Approved means tested and certified by the manufacturer or any recognized national testing laboratory to possess the requirements specified in this section.

Competent Person means one who is capable of identifying existing and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous, or dangerous to employee, and who has the authorization to take prompt corrective measures to eliminate them.

Construction Work means work for construction, alteration, and/or repair to new underground utilities.

Defect means any characteristic or condition that tends to weaken or reduce the strength of the tool, object, or structure of which it is a part.

Employee means every person regardless of title or contractual relationship.

Service Work means work for alteration and/or repair of existing underground utilities.

Work Area means that portion of a walking/working surface where work activities are being performed.

5. Requirements

The contractor shall ensure that a Competent Person is present during all trenching operations greater than ***four feet (4') in depth****.*

All open trenches that expose other trades or the general public to potential harm will be barricaded with a substantial barricade to prevent entry.

5.1 Risk Assessment

A Competent Person shall conduct a JSA prior to excavation work activities beginning to assess the identifiable hazards associated with work areas, occupations, and tasks.

5.2 Written Work Plan

A Competent Person shall develop a written trench plan for every excavation exceeding five feet in depth based on the JSA and the other requirements of this section.

The written trench safety plan shall include:

- Identification of all hazards in the work area related to excavation equipment.
- Describe the excavation protection system(s) to be provided.
- Describe the soil type and the correct procedures for the selection, fit, use and maintenance of the excavation protection system.
- Describe procedures for excavation.
- Describe the method for prompt, safe removal of injured workers.
- Be available on the job site.
- Signature of the Competent Person.

5.3 Training

The employer shall provide training to meet the requirement for trenching and excavations. All training will be conducted in accordance with Federal and State laws, and best industry practices. Training will include, but not limited to 29 CFR 1926 Subpart P

Training should be provided to each affected employee:

- Before an employee works in or near trenches or excavations.
- Retraining is required when the supervisor or safety representative has reason to believe that there are deviations from the established procedures or inadequacies in the employee's knowledge or use of these procedures.

5.4 Inspections

Inspections shall be conducted by a Competent Person:

- Prior to the start of work each day.
- As needed throughout the shift.
- After every rainstorm.
- When an unusual occurrence affects the integrity of the excavation.

Note: Where the Competent Person finds evidence of a situation that could result in a possible cave-in, indications of failure of protective systems, hazardous atmospheres, or other hazardous conditions, exposed employees shall be removed from the hazardous area until the necessary precautions have been taken to ensure their safety.

5.5 Personal Protective Equipment

Minimum Personal Protective Equipment shall consist of:

- Approved Hardhats.
- Approved Safety Glasses.
- Approved Safety-toe Boots.
- If exposed to vehicular traffic or within the R.O.W. employees shall be provided with, and shall wear, type II warning vests or other suitable garments made of bright florescent orange/green material and have reflective material incorporated within the garment. For work during hours of darkness type III vest/clothing are required. All clothing shall comply with the MUTCD for work zone operations.

5.6 Specific engineering control options

5.6.1 Requiring Registered Professional Engineer

Excavation protection system configurations requiring development by a Registered Professional Engineer:

- Excavations greater than twenty (20) feet in depth.
- Any excavation <u>below</u> the level of the base or footing of any foundation or retaining wall that could be reasonably expected to pose a hazard to employees.
- Where the stability of adjoining buildings, walls, or other structures is endangered by excavation operations.

Designs shall be in written form and will include at least the following:

- The protective system configurations that were determined to be safe for the particular project.
- The identity and stamped seal of the Registered Professional Engineer approving the design.

At least one copy of the design shall be maintained at the jobsite.

5.6.2 Sloping and Benching Systems (excavation depth ≥ five ft., ≤ twenty ft.)

Note: Suitable sloping or benching shall occur at ≥4 feet in depth for unstable soil (Type C).

5.6.2.1 Classifying Soil

Soil and rock deposits shall be classified in accordance with 1926 subpart P.

5.6.2.2 Maximum allowable slope

The maximum allowable slope for a soil or rock deposit shall be determined from Appendix 16-1 of subpart P.

When additional weight loads to the system are present from stored material or equipment, operating equipment, or traffic, a Competent Person shall determine the degree to which the slope must be reduced below the maximum allowable slope and will assure that such reduction is achieved.

5.6.2.3 Prohibition

Employees shall not be permitted to work on the faces of sloped or benched excavations at levels above other employees except when employees at the lower levels are adequately protected from the hazard of falling, rolling, or sliding material or equipment.

5.6.3 Shielding Systems (excavation depth ≥ five ft., ≤ twenty ft.)

5.6.3.1 General

Installation of a support system shall be closely coordinated with the excavation of trenches.

Shield systems shall not be subjected to loads exceeding those which the system was designed to withstand.

Employees shall not be allowed in shield systems when shields are being installed, removed, or moved vertically.

Employees shall be protected from the hazard of cave-ins when entering or exiting the areas protected by shields. This means that the access and egress methods shall be within the protection of the shielding system.

Excavation of material to a level no greater than 2 feet below the bottom of the members of a shield system shall be permitted.

5.6.3.2 Materials and Equipment

Materials and equipment used for protective systems shall be free from damage or defects that might impair their proper function.

Manufactured materials and equipment used for protective systems shall be used and maintained in a manner that is consistent with the recommendations of the manufacturer.

When material or equipment that is used for protective systems is damaged a Competent Person shall examine the material or equipment and evaluate its suitability for continued use. If the Competent Person cannot assure 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. Manufactured material or equipment, in this case, shall be evaluated and approved by the manufacturer or a Registered Professional Engineer before being returned to service.

Designs for shoring in trenches shall be determined in accordance with the conditions and requirements set forth in Classifying Soil section and with the Aluminum Hydraulic Shoring for Trenches Appendix 16-1 of subpart P. Other manufactured shoring systems that meet or exceed these tables are permitted.

Note: Aluminum Hydraulic Shoring is preferred to Timber Shoring. However, if Timber Shoring is more feasible or practical, it shall be utilized in accordance with CFR 29 CFR 29 1926 Subpart P, Appendix C.

5.6.4 Combination Systems (excavation depth ≥ five ft., ≤ twenty ft.)

If the excavation is of a depth whereby the shielding system is not of sufficient height sloping/benching shall be utilized in combination.

5.6.5 Installation and removal of support

Members of support systems shall be securely connected together to prevent sliding, falling, kick outs, or other predictable failure.

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 system.

Individual members of support systems shall not be subjected to loads exceeding those which those members were designed to withstand.

Before removal of individual members begins, additional precautions shall be taken to ensure the safety of employees, such as installing other structural members to carry the loads imposed on the support system.

Removal shall begin at, and progress from, the bottom of the excavation. Members shall be released slowly so as to note any indication of possible failure of the remaining members of the structure or possible cave-in of the sides of the excavation.

Back-filling shall progress together with the removal of support systems from excavations.

5.7 Specific Excavation Hazard Controls

5.7.1 Access and egress

A means of egress from trench excavations shall be maintained. A structural stairway, ladder, ramp, or other structural means of egress shall be located in trench excavations that are 4 feet or more in depth so as to require no more than 25 feet of lateral travel for employees. *Backfill material, benching, cuts in the side of the excavation are not suitable means of egress and shall not be used.*

Employees shall not utilize mechanical equipment to access or egress from trench excavations.

5.7.2 Exposure to falling loads

Employees shall be protected from excavated or other materials or equipment that could pose a hazard by falling or rolling into excavations. Protection shall be provided by placing and keeping such materials or equipment at least 2 feet from the edge of excavations or by the use of retaining devices that are sufficient to prevent materials or equipment from falling or rolling into excavations or by a combination of both if necessary.

No employees shall be permitted under loads handled by lifting or excavating equipment.

Employees shall stand away from any vehicle being loaded or unloaded to avoid being struck by any spillage or falling materials.

5.7.3 Hazardous atmospheres

Where oxygen deficiency or a hazardous atmosphere exists or could reasonably be expected to exist such as in excavations in landfill areas or excavation in areas where hazardous substances are stored nearby; the atmospheres in the excavation shall be tested before employees enter the excavation.

5.7.4 Mobile equipment

When mobile equipment is operated adjacent to an excavation, or when such equipment is required to approach the edge of an excavation, and the operator does not have a clear and direct view of the edge of the excavation, a warning system shall be utilized such as barricades, hand or mechanical signals, or other physical barrier.

5.7.5. Underground installations

The contractor shall review and familiarize themselves with the Underground Facility Damage Prevention Safety Act prior to commencement of excavation operations.

When excavation operations approach the estimated location of underground installations, the exact location of the installations shall be determined by safe and acceptable means. *Hand digging is determined to be the only acceptable means.*

While the excavation is open underground installations shall be protected, supported, or removed as necessary to safeguard employees.

5.7.6 Water accumulation

Employees shall not work in excavations in which there is accumulated water or in excavations in which water is accumulating unless adequate precautions have been taken to protect employees against the hazards posed by water accumulation. The precautions necessary to protect employees include special support or shield systems to protect from cave-ins and/or water removal to control the level of accumulating water.

If water is controlled or prevented from accumulating by the use of water removal equipment the water removal equipment and operations shall be monitored by a Competent Person to ensure proper operation.

If excavation work interrupts the natural drainage of surface water (such as streams), diversion ditches, dikes, or other suitable means shall be used to prevent surface water from entering the excavation and to provide adequate drainage of the area adjacent to the excavation.

5.7.7. Protection of employees from loose rock, soil, equipment, and materials

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 rock, soil and materials and equipment shall additionally be kept at least 2 feet from the edge of excavations.

5.7.8 Fall protection

All trenches left open overnight or unattended for more than ½ day (that is not within a roadway) shall be guarded with orange safety fence or equivalent to prevent unauthorized person from entering the area. No employee shall be allowed on the edge of a trench that shows evidence of cave-in without appropriate fall protection.

5.8 Classifying Soils

5.8.1 Classification of soil and rock deposits

Each soil and rock deposit shall be classified by a Competent Person as Stable Rock, Type A, Type B, or Type C in accordance with the definitions of 1926 subpart P.

The classification of the deposits shall be made based on the results of at least one visual and at least one manual analysis. Such analyses shall be conducted by a Competent Person using tests described.

In a layered system the trench or excavation shall be classified in accordance with its weakest layer.

If, after classifying a deposit the properties, factors, or conditions affecting its classification change in any way, the changes shall be evaluated by a Competent Person. The deposit shall be reclassified as necessary to reflect the changed circumstances.

5.8.2 Acceptable visual and manual tests

The Competent Person shall conduct these tests in accordance with 29 CFR 1926 Subpart P.

6. References

29 CFR 1926 Subpart P

Fall Protection - 14

1. Policy

Work activities where employees may be exposed to falls and falling objects shall be conducted safely with associated exposures eliminated and/or controlled.

2. Purpose

To ensure that employees are protected from the hazards associated falls and falling objects.

3. Scope

Applies to all ROCIP projects

4. Definitions

All definitions from 29 CFR 1926 subpart M apply.

Anchorage means a secure point of attachment for lifelines, lanyards, or deceleration devices that is capable of supporting 5,000 lbs. per employees or two times the intended impact load, whichever is greater, or for a positioning system, 3,000 lbs. without failure.

Employee means every contractor's employee or subcontractor employee regardless of title or contractual relationship.

Qualified Person means one who, by possession of a recognized degree, certificate, or professional standing, or who by extensive knowledge, training, and experience, has successfully demonstrated his/her ability to solve or resolve problems related to the subject matter, the work, or the project.

Work Area means that portion of a walking/working surface where work activities are being performed.

5. Requirements

5.1 Fall Protection

Each employee on a walking/working surface with an unprotected side or edge which is 6 feet (six-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. This shall apply 100% (one-hundred percent) of the time on all ROCIP projects.

5.2 Training

The employer shall provide training to meet the requirement for fall protection. All training will be conducted in accordance with Federal and State laws, and best industry practices. Training will include, but not limited to 29 CFR 1926 Subpart M

Training should be provided to each affected employee prior to the employee being exposed to a fall hazard.

Any employees who have not received initial training shall not be allowed to work at heights identified by this section.

5.3 Conventional Fall Arrest and Fall Restraints Systems shall be utilized where the exposure to falls greater than 6 foot and from falling objects is reasonably foreseen. The following systems shall be utilized:

5.3.1 Guardrail System (fall restraint and potentially from falling objects)

All guard rail and toe board systems shall be constructed in accordance with 1926 subpart M.

When guardrail systems are used at hoisting areas, a chain, gate or removable guardrail section shall be placed across the access opening between guardrail sections when hoisting operations are not taking place.

At uncovered holes, guardrail systems shall be set up on all unprotected sides or edges. When holes are used for the passage of materials, the hole shall not have more than two sides with removable guardrail sections. When the hole is not in use, it shall be covered or provided with guardrails along all unprotected sides/edges.

If guardrail systems are used around uncovered holes that are used as access points (such as ladder ways), gates shall be used or the guardrail shall be offset at a 45-degree angle to prevent accidental walking into the hole. Toe boards shall be utilized around the edges not utilized as the actual access point.

If guardrails are used at unprotected sides or edges of ramps and runways, they shall be erected on each unprotected side/edge.

5.3.2 Covers for holes (fall restraint and from falling objects)

Covers shall be installed over holes in floors, roofs and walkways.

Hole covering material shall support at least two times the potential weight that will cross over it. If plywood is chosen as the cover material, it shall be of at least ¾ inch in thickness.

All covers shall be secured in place in such a manner as to not easily be displaced. Examples of securing methods include, but are not limited to: nailing, attached cleats, wire, etc.

Such covers shall have the word 'HOLE' or 'COVER' predominately marked on the top surface. Where covers are too small for such marking, they shall be painted or significantly marked in the color orange.

5.3.3 Restraining/Positioning System (fall restraint)

Only full body harness systems with positioning rings are to be utilized with any Restraining/Positioning system.

Restraint line (rope) length shall not exceed the distance to fall exposure and shall be secured to an anchorage capable of supporting at least twice the potential impact load of an employee's fall or 3,000 pounds, whichever is greater.

Requirements for body harness systems, snap hooks, D-rings, and other connectors used with positioning device systems shall meet the same criteria as those for fall arrest systems.

Body belts are prohibited.

5.3.4 (Personal) Fall Arrest System (fall arrest)

(Personal) Fall Arrest Systems shall meet or exceed the requirements of 1926 subpart M.

The following items/actions are prohibited for use with (personal) fall arrest systems:

- Body belts.
- Non-locking snaphooks.
- Lanyards without shock absorbers.
- Tying back to the lanyard (around another object and back into the lanyard) for a means of an anchorage point, unless the lanyard was designed for this purpose by the manufacturer, the object tied around can support the anticipated fall force and the object does not have sharp edges or burrs.

5.3.5 (Personal) fall arrest systems shall be utilized in the following manner:

5.3.5.1 Pre-Use Inspection

All components shall be inspected prior to each use for wear damage, and other.

5.3.5.2 General Proper Body Harness Fit

The body harness type and size shall meet the physical needs of its user (male/female or small, medium, large, etc.).

Follow the manufacturer's guidelines on proper fit.

5.3.5.3 Sufficient Anchorage Points Utilized

Anchorage's shall be used under the supervision of a Competent Person, as part of a complete (personal) fall arrest system that maintains a *safety factor of at least two* (i.e., capable of supporting at least twice the weight expected to be imposed upon it).

Anchorage's used to attach (personal) fall arrest systems will be independent of any anchorage being used to support or suspend platforms and shall be capable of supporting at least 5,000 pounds of force per person attached.

Prohibited anchorage points include, but are not limited to:

- Standard guardrails and railing.
- Ladders/rungs.
- Scaffolding, unless approved by the manufacturer for/with anchorage points.
- Light fixtures, ductwork, conduit, pipe vents, wiring/duct/piping harnesses, other roof stacks, vents or fans.
- C-clamps.
- Piping (unless capable of meeting the criteria of an anchorage point.)
- To a lanyard (around a solid object), unless the lanyard and hardware is manufactured for that purpose.

5.3.5.4 Lifeline/Lanyard Applications

Lanyards shall only be attached to anchorage points sufficient to meet the fall force requirements.

Shock-absorbing lanyards are required on all fall arrest systems.

Lanyards that do not limit free fall distance to 2 feet or less, such as rip stitch lanyards and tearing/deforming lanyards will be capable of sustaining a minimum tensile load of 5,000 pounds applied to the device with the lifeline or lanyard in the fully extended position.

Horizontal lifelines will be designed, installed, and used under the supervision of a Competent Person as part of a complete (personal) fall arrest system. Lifelines shall be protected against being cut or abraded. Horizontal lifelines cannot exceed sixty feet in length.

Vertical lifelines shall be utilized with leading edge work shall reach the ground and the method of anchorage attachment shall be of proper design (i.e., no knots).

5.3.6 Safety Net System (fall arrest and potentially from falling objects)

Safety net systems shall be used and installed in accordance with 29 CFR 1926.502.c

5.4 Where conventional fall restraint and fall arrest methods cannot be utilized (or utilized safely), the following non-conventional methods can be utilized

A written work plan shall be developed when a project or task possesses a fall exposure whereby these systems are utilized. A sample written plan format can be found in 29 CFR 1926 Subpart M Appendix E.

A Competent Person will develop and implement a written Fall Protection Work Plan including each area of the work place where the employees are assigned and where a fall hazard of 6 feet or more exists. The Risk Assessment for this project/task should be reviewed for this document.

The written Fall Protection Work Plan shall include:

- Identification of all fall hazards in the work area.
- Describe the non-conventional method (or in combination with conventional method) of fall protection to be provided.
- Describe the correct procedures for the assembly, maintenance, inspection, and disassembly of any fall protection system to be used.
- Describe the correct procedures for the handling, storage, and securing of tools and materials.
- Describe the method of providing overhead protection for workers who may be in or pass through the area below the work site.
- Describe the method for prompt, safe removal of injured workers.

- Describe the method for destruction of personal fall arrest system equipment subjected to the forces of any fall.
- Be available at all times on the jobsite.

5.4.1 Controlled Access Zone System (CAZ)

Controlled access zone systems shall be set up in accordance with 1926 subpart M.

5.4.2 Warning Line System (pitches of ≤4:12 and flat surfaces only)

Warning line systems shall be developed and implemented in accordance with 1926 subpart M.

The warning line system shall be used in conjunction with one of the following:

- Safety monitoring system (most common); or
- (personal) fall arrest system; or
- Safety net system; or
- guardrails

5.4.3 Safety Monitoring System

A Competent Person will appoint the 'safety monitor' and will ensure that the Safety Monitor:

- Is competent in the recognition of fall hazards.
- Is capable of warning workers of fall hazard dangers and in detecting unsafe work practices.
- Is operating on the same walking/working surfaces of the employees and can see them.
- Is close enough to work operations to communicate orally with the employees and has no other duties but the monitoring function.
- Has the authority to stop work.

Only employees engaged in roof/surface work and the safety monitor shall be allowed in an area where a contractor is being protected by a safety monitoring system.

5.5 Specific Fall Hazard Procedures

5.5.1 Aerial Personnel Lifts

Employees utilizing aerial personnel lifts (e.g. scissor lifts, genie lifts, boom-lifts, etc.) shall use a full body harness even though a guardrail system is in place.

Attachment points for these systems shall be capable of withstanding 5,000 pounds and shall be maintained in the floor of the lift or where designed by the manufacturer.

Rails of such lifts shall not to be used as attachment points unless designed for that purpose by the manufacturer.

5.5.2 Excavations

See Trenching and Excavation section of this manual.

Where walk-ways are provided to permit employees to cross over excavations, guardrails are required on the walkway if the fall would be 6 feet or more to the lower level.

5.5.3 Hoist Areas

Each employee in a hoist area will be protected from falling 6 feet or more by guardrail, restraint/positioning or (personal) fall arrest systems.

If guardrail systems (or chain gate or guardrail), or portions thereof, must be removed to facilitate hoisting operations, as during the landing of materials, and a worker shall lean through the access opening or out over the edge of the access opening to receive or guide equipment and materials, that employees shall be protected by a (personal) fall arrest system.

5.5.4 Falling Objects (additional protection from)

Except for scaffolding and aerial lifts, no materials or equipment shall be stored within 6 feet of working edges.

When **canopies** are used as protection from falling objects, canopies shall be strong enough to prevent collapse and to prevent penetration by any objects that may fall onto them.

When toe boards are used as protection from falling objects, they shall be erected along the edges of the overhead walking or working surface for a distance sufficient to protect persons working below. Toe boards will be capable of withstanding a force of at least 50 pounds of force applied in any downward or outward direction at any point along the toe board. Toe boards will be a minimum of four (4) inches tall from their top edge to the level of the walking/working surface, have no more than one (1) inch clearance between its bottom and the surface.

5.5.5 Ladders (where work height exposure exceeds six foot or more:

(Personal) Fall Arrest Systems should be utilized when anchorage points are available.

5.5.6 Leading Edge Work

Employees working near a leading edge 6 feet or more above lower levels shall be protected by guardrail, safety net, restraint/positioning, or (personal) fall arrest systems.

5.5.7 Roadway/Vehicular Passage Covers

Covers located in roadways and vehicular aisles shall be able to support at least twice the maximum axle load of the largest vehicle to which the cover might be subjected, and secured/marked.

5.5.9 Wall Openings

Employees working on, at, above, or near wall openings (including those with chutes attached) shall be protected from falling by the use of either a guardrail system, a safety net system, or a (personal) fall arrest system.

5.6 Equipment Inspection and Maintenance Procedures

5.6.1 Inspection, Replacement and Destruction

All equipment shall be visually inspected in accordance with the manufacturers guidelines before each use, replaced immediately if any of the defective conditions are found, tagged ‘out of service’ and removed from the project.

5.6.2 Storage/Cleaning

Contractor shall assure all personal fall arrest systems will be cleaned, inspected and stored as per manufacturer’s requirements.

5.7 Post-Fall Incidents

All employees involved in a fall with a fall distance of over 6ft shall be required to receive an immediate medical evaluation.

All components of a (personal) fall arrest system involved in any fall with a fall distance of over six feet shall be immediately and completely replaced. Such equipment shall be tagged ‘out of service’ and removed from the project.

6. References

CFR 29 CFR 1926 Subpart M, CFR 29 CFR 1910 Subpart D

Fire Protection and Prevention - 15

1. Policy

Work activities shall be conducted safely with associated fire exposures eliminated and/or controlled through a fire protection and prevention plan.

2. Purpose

To ensure reliable function and availability of fire protection and prevention systems.

3. Scope

Applies to all ROCIP projects.

4. Definitions

Hot Work means the performing of operations capable of providing a source of ignition, e.g. riveting, welding, cutting, grinding, soldering, burning and heating.

Hot work permit means a specific written document to do 'hot work'.

Fire watch means employees trained and assigned to monitor or watch for potential fire hazards.

5. Requirements

Each ROCIP project shall have a written fire protection and prevention plan developed by the General Contractor. All employees will be aware of the plan and trained accordingly. The plan shall contain at a minimum the following elements:

- Listing of the major work site fire hazards by location.
- Potential ignition sources and means to control them.
- Procedures regarding smoking on the site.
- Hot work permitting process for the site.
- List of types, quantity, and location of fire extinguishing equipment on site.
- Name and contact phone number of local fire departments.
- Statement on whether or not employees will respond to incipient stage fires and use of portable fire extinguishers.
- Inspection process for fire extinguishing systems and equipment.
- Fire alarm system to be used for the site.
- Inspection plan for the site.
- List of trained employees to man fire extinguishers.
- Fire watches training and responsibilities.
- All applicable federal standards.

6. Responsibilities

All employees on the project shall take actions to prevent fires such as:

- Separating fuel from ignition sources.
- Proper handling and use of flammable liquids and gases.
- Following “No Smoking” rules and warnings while maintaining good housekeeping.
- Preventing electrical hazards such as arching, damaged cords, overloaded circuits.
- Use of applicable Hot Work permits and fire watches.

Fire protection and prevention requirements may be found in the applicable OSHA standards.

7. References

CFR 29 CFR 1910 Subpart L, CFR 29 CFR 1926 Subpart F, CFR 29 CFR 1910.38, CFR 29 CFR 1926

Forklifts - 16

1. Policy

All forklifts (powered industrial trucks) shall be operated, maintained, and controlled in a safe manner and in accordance with the manufacturer's guidelines.

2. Purpose

To define the procedures and standards that applies to the care, control, maintenance, inspection, and operation of forklifts.

3. Scope

All ROCIP projects.

4. Definitions

Forklift means a mobile, power-propelled truck used to carry, push, pull, lift, stack, or tier materials. Powered industrial trucks (forklifts) are also commonly known as pallet trucks, rider trucks, fork trucks, or lift trucks.

5. Requirements

5.1 Training

Only trained and authorized persons are permitted to operate a forklift. No employees are allowed to operate a forklift without the proper training.

The following requirements shall be met to become a "Qualified Forklift Operator":

- Complete the educational requirement as stated in 29 CFR 1910.178.
- Perform a function test satisfactorily and be deemed competent.

Each trainee who satisfactorily completes the qualifications as outlined above shall be issued a written document as evidence of being a qualified forklift operator.

5.2 Inspection and Maintenance

Each forklift truck operator shall inspect their vehicle at the start of each shift and document this inspection. Any noted condition that affects the safe operation shall be reported to the operator's supervisor for corrective action. The lift truck shall not be operated until the unsafe condition is corrected.

Forklifts that are defective, in need of repair, or are unsafe shall be tagged "Danger - Do Not Operate" and taken out of service until restored to safe operating condition. Only Qualified Personnel shall perform maintenance and repair.

5.3 General

Stunt driving and horseplay shall not be permitted.

All forklifts shall be equipped with seat belts and utilized by the operator when in use.

Personnel are not permitted to ride on forklifts except in designated seats that are part of the equipment design.

All forklifts shall be equipped with a dry chemical fire extinguisher.

The forklift shall be operated at a safe speed at all times.

All traffic regulations shall be observed including reasonable work site speed limits.

The driver shall be required to slow down and sound the horn at cross aisles/roads and other areas where vision is obstructed. If the load being carried obstructs forward view the driver shall be required to travel in the reverse direction.

Forklifts shall have a functional horn and back-up alarm with a distinctive sound, loud enough to be heard clearly above background noises.

Copies of the manufacturer's operating instructions for each type of forklift shall be readily available for review by operators and supervisory personnel.

Forklifts shall have the rated capacity clearly posted on the vehicle so as to be clearly visible to the operator. When the manufacturer provides auxiliary equipment corresponding alternate rated capacities also shall be clearly shown on the vehicle. These ratings shall not be exceeded.

No modifications or additions which affect the capacity or safe operation of the equipment shall be made without the manufacturer's written approval. If such modifications or changes are made the capacity, operation, and maintenance instruction plates, tags, or decals shall be changed accordingly. In no case shall the original safety factor of the equipment be reduced.

If a load is lifted by two or more forklifts working in unison the total load carried by all shall not exceed their total combined capacity. This would be considered a non-routine task. Therefore, a JSA is required.

All forklifts shall have the manufacturer's nameplate showing its weight with attachments, lifting capacity, lift height maximum and other pertinent data.

Nameplates or markings shall be maintained in a legible condition and remain in place at all times.

Railroad tracks shall be crossed diagonally wherever possible. Parking closer than 50 feet from the center of railroad tracks is prohibited.

Grades shall be ascended or descended slowly.

When ascending or descending grades forklifts should be driven with the load or load engaging means upgrade.

On all grades the load and load engaging means shall be tilted back if applicable and raised only as far as necessary to clear the road surface.

No person shall be allowed to stand or pass under the elevated portion of any forklift whether loaded or empty.

There shall be sufficient headroom under overhead installations, lights, pipes, power lines, sprinkler system, etc.

Arms or legs are prohibited from being placed between the uprights of the mast or outside the running lines of the forklift.

When a forklift is left unattended load engaging means shall be fully lowered, controls shall be neutralized, power shall be shut off, and brakes set. Wheels shall be blocked if parked on an incline.

A safe distance shall be maintained from the edge of ramps or platforms while on any elevated dock, or platform.

Brakes shall be set and wheel blocks shall be in place to prevent movement of trucks, trailers, or railroad cars while loading or unloading. Fixed jacks may be necessary to support a semi-trailer during loading or unloading when the trailer is not coupled to a tractor. Prior to forklift entry the flooring and frames of trucks, trailers, and railroad cars shall be checked for breaks and weakness before they are driven into and to determine that it will bear the intended weight of the forklift and load.

Dock board or bridge plates shall be properly secured before they are driven over. Dock board or bridge plates shall be driven over carefully and slowly and their rated capacity never exceeded. Portable dock boards shall be secured in position by being anchored or equipped with devices that will prevent their slipping.

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

Additional counter weighting of forklifts shall not be allowed unless approved by the manufacturer.

5.4 Refueling and Battery Changing/Charging

Refueling and battery charging operations shall be performed only in designated areas. Open flames, smoking, sparks or electric arcs shall be eliminated from refueling and battery changing/charging areas.

All forklifts shall be properly positioned and brakes applied before attempting to refuel or change/charge battery.

6. References

CFR 29 CFR 110.178, CFR 29 CFR 1926.601c

General Safety - 17

1. Policy

All work activities shall be conducted safely.

2. Purpose

To identify, establish, and implement general safety work rules and procedures as a requirement of all employees to be utilized on all ROCIP projects that are not covered in other sections of this manual.

3. Scope

Applies to all ROCIP projects.

4. Definitions

None

5. Requirements

5.1 General Requirements

All vendors shall remain in their vehicle at all times while on any ROCIP Project.

Smoking is permitted in designated areas only. All other areas are non-smoking.

Any activity creating or contributing to unsanitary or unhealthy conditions is prohibited.

All forms of horseplay are prohibited.

The use of air for removing dirt or foreign particles from personal attire is prohibited. Do not direct compressed air toward yourself or other employees.

Employees are required to remain in assigned work areas, unless directed by their immediate supervisor.

5.2 Clothing and Personal Appearance

Employees shall wear clothing appropriate for their task.

Employees exposed to public vehicular traffic or working within the R.O.W. shall wear an approved Type II safety vest. When employees are required to work during hours of darkness a type III vest is required.

No dangling earrings or necklaces (exposed) that may become entangled in equipment is allowed except in office areas.

No loose clothing is allowed in operating areas - i.e., clothing tied around waist or over the shoulders, neckties, shirttails not tucked in, etc. This is to prevent the potential for getting caught in rotating/moving equipment.

No sleeveless or fishnet shirts are allowed while on the job site - i.e., muscle shirts, tank tops, etc. In addition, shirts cannot display advertisements of illegal drugs, profanity, or implications of sexual or racial discrimination.

Safety glasses will be worn on all ROCIP project at all times.

Shoes or work boots must be appropriate for the job and substantial in construction and in good condition. No tennis shoes, cowboy boots (with leather soles), lightweight athletic shoes, sneakers, sandals, or similar shoes are to be worn. Additional toe and upper foot protection shall be provided when hazardous conditions exist.

Long hair or beards, where allowed, shall be groomed or covered to avoid being caught in moving parts. Ponytails, hairnets or other approved headgear shall be required as deemed appropriate when the length of hair exposes employees to such hazards.

5.3 Barricades

Barricades shall be installed when a hazard exists and removed after completing work activities or when the hazard has been abated.

Barricades shall be erected where the hazard exists and shall consist of material suitable to constitute a physical barrier.

Caution tape (yellow with black lettering) shall be used to identify a hazard, but will allow personnel to proceed through the area with care.

Danger tape (red with black lettering) shall be used to identify a hazard zone where only authorized personnel are allowed to enter.

Whenever barricade tape is used a warning tag shall be attached to the tape at all normal through traffic locations stating the date of installation and the specific hazard information.

Orange safety fencing shall be used when pedestrian traffic is prohibited through an area.

All trenches/excavations left open overnight or unattended for more than ½ day (that is not within a roadway) shall be guarded with orange safety fence or equivalent.

5.4 Manual Lifting

Tasks involving repetitive lifting should be analyzed to determine alternate methods of completing the task.

Training on proper lift techniques shall be provided in the contractor's orientation and periodically through site safety meetings.

5.5 Access

Employees shall ensure that a stairway or ladder shall be provided at all personnel points of access where there is a break in elevation of 19 inches or more, and no ramp, runway, or personnel hoist is provided.

A double-cleated ladder or two or more separate ladders shall be provided when ladders are the only means of access or exit from a working area for 25 or more employees or when a ladder is to serve simultaneous two-way traffic.

When a building or structure has only one point of access between levels; that point of access shall be kept clear to permit free passage of employees. When work must be performed or equipment must be used such that free passage at that point of access is restricted a second point of access shall be provided and used.

The following requirements apply to all stairways as indicated:

- Stairways that will not be a permanent part of the structure on which construction work is being performed shall have landings of not less than 30 inches in the direction of travel and extend at least 22 inches in width at every 12 feet or less of vertical rise.
- Stairs shall be installed between 30 deg. and 50 deg. from horizontal.
- Riser height and tread depth shall be uniform within each flight of stairs including any foundation structure used as one or more threads of the stairs. Variations in riser height or tread depth shall not be over ¼-inch in any stairway system.
- Where doors or gates open directly on a stairway, a platform shall be provided, and the swing of the door shall not reduce the effective width of the platform to less than 36 inches.

- All parts of stairways shall be free of hazardous projections such as protruding nails.
- Slippery conditions on stairway shall be eliminated before the stairways are used.

Stairways having four or more risers shall be equipped with:

- At least one handrail; and
- One stair rail system along each unprotected side or edge.

Stair rails installed shall be not less than 36 inches from the upper surface of the stair rail system to the surface of the tread in line with the face of the riser at the forward edge of the tread.

Other structural members when used shall be installed so as to create no openings in the stair rail system that are more than 18 inches apart.

Handrails and the top rails of stair rail systems shall be capable of withstanding, without failure, a force of at least 200 pounds applied within 2 inches of the top edge, in any downward or outward direction, at any point along the top edge.

When the top edge of a stair rail system also serves as a handrail the height of the top edge shall be not more than 37 inches nor less than 36 inches from the upper surface of the stair rail system to the surface of the tread in line with the face of the riser at the forward edge of the tread.

Unprotected sides and edges of stairway landings shall be provided with guardrail systems.

5.6 Illumination

Construction areas, ramps, runways, corridors, offices, shops, and storage areas shall be lighted to not less than the minimum illumination intensities listed below while any work is in progress:

MINIMUM ILLUMINATION INTENSITIES IN FOOT-CANDLES

- General construction areas, concrete placement, excavation and waste areas, access ways, active storage areas, loading platforms, refueling, and field maintenance areas; 8 foot candles
- Indoors: warehouses, corridors, hallways, and exit-ways; 10 foot candles
- Tunnels, shafts, and general underground work areas: 10 foot candles

- General construction plant and shops (e.g., batch plants, screening plants, mechanical and electrical equipment rooms, carpenter shops, rigging lofts and active store rooms, mess halls, and indoor toilets and workrooms.)
- First aid stations and offices; 30 foot candles

6. Employee Training

The contractor shall ensure that all employees are periodically retrained regarding federal and state regulations and this manual. Supervisors are encouraged to use the weekly safety meeting for this purpose. All employees should work safely. Unsafe conditions must be reported immediately to the job site superintendent or the foreman.

New employees shall attend a safety orientation prior to placement on any ROCIP project.

All accidents must be reported immediately to the job site superintendent or foreman and the ROCIP Safety Team.

Defective tools or equipment will not be used. Such equipment must be reported immediately to the job site superintendent or foreman and removed from service.

7. Contractors Responsibilities

Contractors are required to assume certain safety related responsibilities on every job site. These are, but not limited to:

- Plan and execute all work so as to comply with OSHA regulations, contract specifications for safety, and the requirements of this manual.
- Take immediate action to correct unsafe practices or unsafe conditions.
- Conduct routine safety inspections. More frequent inspection shall be conducted during hazardous operations such as demolition, tunneling, etc.
- Attend or conduct weekly job site safety meetings. Maintain a record of these meetings.
- Meet with the Program Safety Manager monthly to discuss accidents/incidents and safety reports.
- Maintain good housekeeping at all times.
- Ensure vendors remain in their vehicles at all times.

8. Subcontractors Responsibilities

Prior to a subcontractor beginning work, the contractor shall ensure that all subcontractors are notified and comply with all regulations outline in this manual.

All contractors and subcontractors shall read and understand the disciplinary program section.

9. Driver Qualifications – CDL Drivers

Contractors or any tier subcontractors whose employees drive vehicles requiring a CDL will be subject to D.O.T. drivers' qualification standards including the following:

- All applicable laws under 29 CFR, 49 CFR.
- Be twenty (21) years or older.
- Can read and speak English sufficiently to converse with general public.
- Understand all traffic signs and signals.
- Be in control of the equipment or materials to be transported.
- Be physically able and qualified to drive the vehicle.
- Evidence of no disqualification to drive a motor vehicle.
- Provided General Contractor a current copy of the CDL.
- Has a current D.O.T. physical
- Has completed the required road test.

10. Trucks and Company Vehicles

All employees shall comply with the following:

- All traffic and safety rules will be adhered to.
- Consumption of alcoholic beverages or illicit drugs is prohibited.
- Only authorized use of contractor's vehicles is allowed.
- Full adherence and compliance with speed limits at all times.
- All transport trucks (dump trucks) will tarp all loads.
- All equipment shall be secured in accordance with 49CFR.
- Contractors or subs commercial motor vehicle will be equipped with the following items:

    A. First Aid Kit
    B. Fire extinguisher
    C. Current insurance card and registration documents

11. References

29 CFR 1926, 29 CFR 1910, and 29 CFR 49

Laser Ionizing and Non-Ionizing - 18

1. Policy

Laser use shall be conducted safely and in accordance with manufacturer's guidelines, 29 CFR 1926, and 29 CFR 1910 with associated exposures eliminated/controlled.

2. Purpose

To ensure that all employees are protected against laser hazards.

3. Scope

Applies to all ROCIP projects.

4. Definitions

None

5. Training (Non-Ionizing)

Contractors shall provide training to employees assigned to install, adjust, and operate laser equipment.

Proof of qualification of the laser equipment operator shall be documented in the employees possession at **all** times.

6. Requirements (Non-Ionizing)

Employees working in areas where a potential exposure to direct or reflected laser light greater than 0.005 watts (5 milliwatts) exists shall be provided with appropriate eye protection.

Areas in which lasers are used shall be posted with standard laser warning placards.

Beam shutters or caps shall be utilized, or the laser turned off, when laser transmission is not actually required. When the laser is left unattended for a substantial period of time such as during lunch hours, overnight, or at change of shifts, the laser shall be turned off.

Only mechanical or electronic means shall be used as a detector for guiding the internal alignment of the laser.

The laser beam shall not be directed at employees.

Laser equipment shall bear a label to indicate maximum output.

Employees shall not be exposed to light intensities above:

- Direct staring: 1 micro-watt per square centimeter;
- Incidental observing: 1 milliwatt per square centimeter;
- Diffused reflected light: 2 ½ watts per square centimeter

Laser unit in operation should be set up above the heads of the employees, when possible.

Employees shall not be exposed to microwave power densities in excess of 10 milliwatts per square centimeter.

7. Requirements (Ionizing)

In construction and related activities involving the use of sources of ionizing radiation, the pertinent provisions of the Nuclear Regulatory Commission Standards for Protection Against Radiation (10 29 CFR Part 20) relating to protection against occupational radiation exposure shall apply.

Any activity which involves the use of radioactive materials or X-rays whether or not under license from the Nuclear Regulatory Commission shall be performed by Competent Persons specially trained in the proper and safe operation of such equipment. In the case of materials used under Commission license only persons actually licensed or Competent Persons under direction and supervision of the licensee, shall perform such work.

8. Traffic and Pedestrian Safety

Although OSHA regulations make only general references to traffic and pedestrian exposure these activities may create hazards as construction activities progress. In order to provide this protection all employees shall comply with the Texas Manual of Uniform Traffic Control Devices for Streets and Highways and all other applicable laws, when their scope of work requires protective measures for the general public and pedestrians.

8.1 All ROCIP projects shall be secured as to prevent unauthorized vehicular or pedestrian traffic from entering each project.

9. References

29 CFR 1926.54 (Non-Ionizing)
29 CFR 1926.53 and 29 CFR 1910.1096 (Ionizing)

Hazardous Communications (HAZCOM) - 19

1. Policy

Work activities involving hazardous and potentially hazardous chemicals shall be conducted safely through a Hazard Communication Plan.

2. Purpose

To ensure that all employees involved with such chemical hazards are informed of potential chemical exposures and control methods.

3. Scope

Applies to all ROCIP projects.

4. Definitions

All definitions from 29 CFR 1910.1200 apply.

Health hazard means a chemical for which there is statistically significant evidence based on a least one study conducted in accordance with established scientific principles that acute or chronic health effects may occur to exposed employees.

Label means any written, printed, or graphic material displayed on or affixed to containers of hazardous chemicals.

Material Safety Data Sheet (MSDS) means written or printed material concerning a hazardous chemical.

Physical Hazards means a chemical that acts outside the body to produce a dangerous situation. Flammable or explosive chemicals pose physical hazards.

5. Requirements

5.1 Written

Each contractor shall develop his/her own specific written Hazard Communication Program. An evaluation of the written hazard communication Program shall be conducted at least annually or as necessary during the project.

5.2 Hazard determination and chemical inventories

Master chemical MSDS inventories shall be kept current.

5.3 Labels and other forms of warnings shall contain:

- The identity of the hazardous chemical(s).
- Appropriate hazard warnings.
- Name and address of the chemical manufacturer, importer, or other responsible party.

5.4 Material Safety Data Sheets (MSDS)

The most current MSDS available shall be utilized.

A master set of MSDSs shall be maintained in the General Contractor's office. MSDSs for a specific work area shall be established, maintained, and made available to employees in designated locations within these areas.

5.5 Contractor Information and Training

The employer shall provide training to meet the requirement the Federal Hazardous Communication Standard. All training will be conducted in accordance with Federal and State laws, and best industry practices. Training will include, but not limited to 29 CFR 1910.1200

Training shall be provided to each affected employee prior to employee exposure to hazardous chemicals.

Contractor shall provide all employees with the following information and training:

- The requirements and details of the written Hazard Communication Program.
- Location of operations in their work area where hazardous chemicals are present.
- The location and availability of the written Hazard Communication Program and MSDS.
- Methods and observations that may be used to detect the presence or release of a hazardous chemical in the work area.
- Physical and health hazards of the chemicals in their work area.
- Measures taken to protect them from these hazards including any specific control procedures implemented to protect from exposure.

As new chemicals are introduced to the work area further training is required as follows:

- Location of operations in their work area where such new chemicals will be present.

- Methods and observations that may be used to detect the presence or release of such new chemicals in the work area.
- Physical and health hazards of such chemicals.
- Measures that can be taken for protection from such chemicals.

5.6 Multi-employer worksites shall:

- Abide by the applicable provisions of Federal, State and local hazard communication laws.
- Maintain a copy of all contractors Hazard Communication Program and applicable MSDS in a readily accessible area and will permit access to employees.
- Provide MSDS information for all chemicals used or stored in the work area and all applicable procedures/precautions for handling and proper use.

5.7 Non-Routine Tasks

Hazard Communication plans for non-routine tasks shall include:

- The method used to identify the hazards of non-routine tasks.
- The methods used to inform employees of these hazards.
- A description of special procedures required for hazardous non-routine tasks.

6. Responsibilities

The employer shall ensure proper chemical inventory and hazard evaluations have been conducted

The employee is responsible to:

- Read and follow all label directions.
- Report the use of new chemicals brought on site.
- Promptly report concerns.

7. References

CFR 29 CFR 1910.1200, CFR 29 CFR 1926.59

Housekeeping and Sanitation - 20

1. Policy

Contractor(s) shall maintain all work areas in a clean, safe, and orderly condition.

2. Purpose

To define good housekeeping and sanitation procedures.

3. Scope

Applies to all ROCIP projects.

4. Definitions

Potable Water means water that meets the quality standards prescribed in the U.S. Public Health Service Drinking Water Standards, published in 42 CFR part 72, or water which is approved for drinking purposes by the State or local authority having jurisdiction.

Lavatory means a basin or similar vessel used exclusively for washing of the hands, arms, faces, and head.

Number of employees means, unless otherwise specified, the maximum number of employees present at any one time on a regular shift.

5. Requirements

5.1 General Housekeeping

All work sites, vehicles, fabrication facilities, warehouse, material lay-down areas, offices, and parking lot areas shall be kept in a clean and orderly condition.

All tools (construction, service and emergency equipment) shall be kept clean and well maintained.

Walkways, stairways and roadways shall be kept clear to allow the safe movement of persons, material and equipment.

Arrangements shall be made for adequate trash receptacles and the emptying of such receptacles on a regular schedule.

All trash receptacles used for food waste shall have a cover and be in place at all times

Electrical cords, hoses, ropes, conduit, pipe and other hazards shall not be placed in walkways, stairways, or work areas in such a manner as to create a tripping hazard.

Scrap materials shall be stacked or stored for disposal or recycling in a neat and orderly manner so as not to interfere with job processes or create hazards.

Employees shall keep their work areas in a clean and orderly manner. Inspections of overall or general work areas shall be conducted on a daily basis.

Emergency exits and evacuation routes shall be clearly marked and kept clear at all times.

5.2 Potable Water

An adequate supply of potable water shall be provided at all work sites.

5.3 Water Containers and Drinking Cups

Portable potable water containers used to dispense drinking water shall be capable of being tightly closed and equipped with a tap. Water shall not be dipped from containers.

Any container used to distribute drinking water shall be clearly marked as to the nature of its contents and not used for any other purpose.

Water containers shall be cleaned periodically with an antiseptic cleaning solution.

The ‘common drinking cup’ is prohibited.

Where single service cups are supplied both a sanitary container for the unused cups and a receptacle for disposing of the used cups shall be provided.

5.4 Non-potable water

Non-potable water outlets (such as water for industrial or firefighting purposes only) shall be identified with signs to indicate clearly that the water is unsafe for drinking, washing, or cooking purposes.

There shall be no cross-connection, open or potential, between a system furnishing potable water and a system furnishing non-potable water.

5.5 Toilets at temporary worksites

The minimum numbers of toilets that shall be provided for employees on job sites are 1facility per every ten people/week. All portable toilets shall be maintained in a clean and sanitary manner.

Under temporary field conditions provisions shall be made to assure not less than one toilet facility is available.

5.6 Washing facilities

Washing facilities shall be maintained in a sanitary condition. Washing facilities shall be provided for employees engaged in the application of paints, coating, herbicides, or insecticides, or in other operations where contaminants may be harmful to the employees. Such facilities shall be in near proximity to the work site and shall be so equipped as to enable employees to remove such substances.

Each facility shall be provided with tepid running water.

Hand soap or similar cleansing agents shall be provided.

Individual hand towels shall be provided.

5.7 Eating and Drinking Areas

Employees shall not be allowed to consume food or beverages in a toilet room nor in any area exposed to a toxic material.

Eating areas shall be designated and kept in a sanitary condition. On work sites provisions shall be made to properly dispose of food scraps and trash.

Employees shall not be permitted to eat in areas where food may become contaminated or food may contaminate an environment.

6. References

CFR 29 CFR 1910, Subparts E, J, N. CFR 29 CFR 1926, Subparts C, D

Industrial Hygiene - 21

1. Policy

Contractor(s) shall maintain all work areas to the highest feasible level of quality.

2. Purpose

To ensure that risk of personnel injury, environmental impact, and property damage are controlled for industrial hygiene-related issues.

3. Scope

Applies to all ROCIP projects.

4. Definitions

TLV means Threshold Limit Value

PEL means Permissible Exposure Level

5. Requirements

5.1 General

Periodic evaluations of every work site shall be made to determine the degree of risk arising from exposure to chemical, physical, or biological agents.

All work areas shall be evaluated for exposures by the contractor or other designated Competent Person.

Noise levels shall be controlled, where feasible, so as to create and sustain a productive work place for the type of work being conducted. Any employee subject to noise which exceeds the limits established in 1926 subpart D shall be provided with and wear hearing protection.

Supplementary and/or temporary fuel fired heaters shall not be used unless the contractor has reviewed the environmental conditions in the area of use.

Work environments involving extreme heat or cold shall be evaluated as necessary.

5.2 Air Contaminants

Potential health hazards of air contaminants resulting from industrial operations shall be evaluated by a designated Competent Person.

The contractor(s) shall determine what air contaminants should be evaluated further through the use of industrial hygiene monitoring.

Any initial or baseline monitoring shall consist of air monitoring in multiple locations within each worksite depending upon layout and repeated under varying conditions.

Changes to the work environment and the continuing effectiveness of engineering controls shall be determined through follow-up monitoring.

Personal monitoring shall be utilized to the fullest extent possible.

When the results of the air monitoring reveal air contaminants at concentration equal to or greater than one-half the PEL, engineering controls shall be implemented where feasible to reduce the contaminant level.

Respiratory protection shall be worn in areas with air contaminant concentrations above the TLV or the PEL when engineering controls and/or administrative controls do not resolve. Applicable engineering and/or administrative controls shall continue to be implemented during the use of respiratory protection.

Control devices on equipment shall be regularly inspected and tested. The employer shall evaluate the control techniques and their effectiveness on controlling air contamination. Work site management shall immediately inform the ROCIP Safety Team of any changes that may affect contaminant concentrations.

5.3 Ensuring Reliability of Test Equipment

All users of portable air monitoring equipment shall be trained in proper use, care, inspection, and calibration requirements and limitations of the equipment.

Routine replacement of parts shall be performed in accordance with the manufacturers written instructions by Qualified Personnel. The authorized service provider must undertake all other repairs.

An external independent calibration is necessary on a scheduled basis to ensure correct performance of the units. Preventative maintenance shall also be carried out at this time.

5.4 Noise Monitoring

The contractor in response to workplace assessments, employee complaints, or regulatory requirement shall arrange for noise monitoring.

6. References

CFR 29 CFR 1910 Subpart(s) G, J, Z
CFR 29 CFR 1926 Subpart(s) C, D, Z
CFR 29 CFR 1926.51(c) Table D-1
ASHRAE standards appropriate to the site
ACGIH standards as referenced and appropriate at site.

Ladders - 22

1. Policy

Work activities requiring the use of approved ladders shall be conducted safely and in accordance with manufacturer's guidelines.

2. Purpose

To define the requirements for the safe use of approved ladders.

3. Scope

Applies to all ROCIP projects.

4. Definitions – General Common Terms

ANSI stands for the American National Standards Institute that provides ladder manufacturing guidelines.

Competent Person (for ladders) means a person possessing the ability to identify hazardous or dangerous conditions and shall have the authorization to take prompt corrective measures to eliminate these conditions. A Competent Person shall know how to detect defects as well as the proper procedures to follow when equipment is found to be defective.

All other definitions of 29 CFR 1926 subpart X shall apply.

5. Requirements

5.1 Ladder Selection Criteria

The following table outlines the weight-capacity classifications for approved ladder types:

TYPE	APPLICATION	WORKING LOAD
IAA	Construction/Services/Shop/Warehouse	375 lbs. Maximum
IA	Construction/Services/Shop/Warehouse	300 lbs. Maximum
I	Construction/Services/Shop/Warehouse	250 lbs. Maximum

Only type IAA, IA, or I ladder are approved for ROCIP projects.

Ladders of these types should only be of fiberglass/non-conductive material. Wood or job-made ladders are discouraged and require approval by a Competent Person for use under special circumstances.

Any future-developed ladder with a rating higher in 'working load' capacity than the type IAA is acceptable.

5.2 Training

Contractor(s) shall provide annual training to all employees utilizing ladders either separately or in conjunction with fall protection training.

Ladder safety shall also be covered as a part of a new employee's orientation.

Individual refresher training shall be required of all employees engaged in work-related near-miss or injury incidents involving ladders.

All training related to applicable ladders shall include:

- The nature of ladder hazards in the work site.
- As applicable, the correct procedures for construction (job-made ladders), use, placement and care in handling all ladder types and styles.
- The maximum intended load-carrying capacities of all ladder types and styles.
- Applicable standards contained in 29 CFR 1926 subpart X and those of this policy section.

5.3 Inspections

Ladders shall be visually inspected before use.

Ladder defects include but are not limited to:

- Structural defects-such as bent, broken or missing rungs, cleats, or steps, broken or split rails, corroded components, or other faulty or defective components.
- Such ladders shall be immediately removed from service and tagged with **"DANGEROUS-DO NOT USE"** sign/tag and immediately reported to your supervisor or a designated Competent Person.
- Such ladders are to be removed from the work area for proper disposal or repair by personnel trained to manufacturer's standards.

5.4 Ladder Use and Transportation

5.4.1 Choosing the Proper Ladder

Before a ladder is used it shall be determined that a ladder is the best device to use. Scaffolds and mechanical lifts may be a better choice for

certain situations. Once a ladder has been determined to be the best option the proper ladder shall be chosen.

Ladders shall be chosen in accordance with the job to be performed. Choose ladders based on the ladders rated strength, usable height, and load specification. The combined weight of the user, their tools, and materials shall not exceed the rating of the ladder. Each ladder shall have a duty rating displayed on a label affixed to the ladder.

5.4.2 Transporting

Two people should carry step ladders over 10 feet, and straight/extension ladders 20 feet or greater in length.

Any ladder less than ten feet (10') in length can be carried by one contractor when supporting the ladder in the middle and to his/her side.

Ladders stored on/in vehicles shall be secured from movement at both ends. Materials used to secure such ladders shall be properly sized and inspected for decay before use and discarded if in disrepair.

Ladders projecting more than three (3) feet from the vehicle body shall be marked with a red 'flag'.

5.4.3 Setup Rules

All ladders shall be placed on firm stable footing.

If the ladder is positioned by a door or walkway ensure that the door is locked or the walkway is barricaded to prevent collisions.

Keep ladders at least ten feet (10') away from energized power lines (all personnel shall be trained and instructed to watch for overhead power lines before erecting any ladder).

When using portable extension ladders identify the best location that allows for the proper securing of the ladder at the base and/or top.

Barriers and/or warnings should be posted while working on a ladder in any high-traffic areas.

5.4.4 Setup and Use

5.4.4.1 Portable Step Ladders

Ensure that the folding cross braces on the ladder are locked in the proper position.

Ensure that the bottom areas of the ladder are kept clear and free of debris.

Ensure that a portable step ladder is never utilized as a straight or extension ladder (for example, leaning it against an object when climbing).

Place the top step directly under or slightly in-front of the intended work area.

It is good practice to have someone hold any ladder over twelve feet (12') in height while ascending/descending/ performing work.

Where possible, do not work with the side rails facing the working surface.

Never climb the back side of a ladder.

5.4.4.2 Portable Straight and Extension Ladders

Place a straight or extension ladder at an angle of 4:1. For every 4 feet of height, the base of the ladder should be out 1 foot (i.e., one horizontal foot from the support point).

Ensure that both side rails make contact with the structure at the bearing point.

All ladders must extend at least three feet (3') (approximately three rungs) beyond the surface being accessed. Further overlap adds stability.

Straight or extension ladder are not to be placed in a horizontal position as a substitute for a scaffold or a runway between two elevated locations.

Straight or extension ladder are never to be placed directly against a windowpane or sash.

Ensure that the top and bottom areas of the ladder are kept clear and free of debris.

5.5 General Rules for Use

All ladders shall only be used as specified by the manufacturer.

Never jump from or onto any ladder. Never slide down a ladder.

Never “walk” a ladder while working on it.

Never “jump” a ladder while working on it.

Remove any ice, snow, mud or other slippery substance from the rungs/steps.

Always use the 3-point rule when climbing up or down. At least two hands and one foot, or two feet and one hand, should be in contact with the ladder at all times.

Ladders cannot be moved, shifted or extended while employees are on them.

Always face the ladder when ascending or descending.

If tools are needed they should be carried in a tool belt or pulled up with a rope once the employee has reached his/her destination.

When ascending or descending tools/equipment/supplies that cannot be readily carried in a tool pouch shall be handled by another employee on the ground or lowered/raised to/from the ground by the employee on the ladder once positioned safely on the ladder.

Do not store tools or materials on the top of ladders unless specifically designed for this purpose.

Do not lean outside the frame rails of a ladder. This could cause the user to lose balance and fall. With a properly positioned ladder the work should always be directly in front of you.

Wear slip resistance footwear for climbing/descending such as work boots.

Do not use the top two steps of a portable stepladder and the top four rungs on extension ladders. Those steps/rungs are necessary for balance only. Obtain a larger ladder if more height is needed.

Always climb slowly with your weight centered between side rails.

Never join two short ladders to make a longer one.

5.6 Maintenance and Storage

5.6.1 Maintenance

Ladder shall be maintained in accordance with the manufacturer recommendations. Ladders should never be painted (other than for property marking) because paint may hide defects that could lead to ladder failure.

5.6.2 Storage

Never store ladders in such a way that they present a tripping hazard or could potentially fall on employees.

Keep ladders in areas where they will not come into contact with oil, grease, or other slipping hazards.

Store and secure ladders in a safe and dry place out of direct exposure to the sun and other weather elements whenever possible.

6. References

CFR 29 CFR 1926 Subpart X

Personal Protective Equipment - 23

1. Policy

Employees shall use appropriate personal protective equipment (PPE) as determined by hazard assessments, training, and ROCIP requirements.

2. Purpose

To establish a specific procedure for the control, use, and care of personal protective clothing and equipment.

3. Scope

Applies to all ROCIP projects and includes all visitors, vendors, and subcontractors.

4. Definitions

General Use PPE means any PPE that is generally issued to all employees for a work site for known exposures.

PPE is an abbreviated term for 'personal protective equipment'.

ANSI is an abbreviated term for 'American National Standards Institute'.

5. Requirements

All PPE shall be selected by the employer and assigned/issued by supervision.

PPE is to be provided by all employers for controlling exposures to applicable hazards. The first and foremost means of protecting employees from injuries or exposures is to eliminate the exposure, the second is engineering controls, and the third is PPE. PPE is a means of preventing injury or exposure when exposure elimination and/or engineering controls are not possible.

Prior to any personal protective equipment being selected for any work site a hazard assessment shall be performed for each specific task or work area. The assessment shall be written and maintained on file at the work site.

A PPE hazard assessment shall be conducted whenever there is a change in operations, processes, machinery or any other conditions that may promote, create, or produce any potential physical or health hazard.

5.1 Training

5.1.1 Initial

All employees shall be trained on the following:

- When PPE is necessary
- What PPE is necessary
- How to properly don, doff, adjust, and wear PPE
- The limitations of the PPE; and
- The proper care, maintenance, useful life, and disposal of the PPE

5.1.2 Refresher

Refresher training of individual employees shall occur when any of the following occur:

- Changes in the work site render previous training obsolete.
- Changes in the types of PPE to be used render previous training obsolete.
- Inadequacies in the employee's knowledge or use of assigned PPE indicate that the employee has not retained an understanding or skill of PPE use.

5.1.3 Certification of Training

All employees shall certify their receipt and understanding of this training. The following information shall be documented with this certification:

- Name of each employee.
- Date(s) of training.
- Identification of the PPE subject.

5.2 Head Protection

All hard hats shall be in compliance with or exceed ANSI standard Z89.1 (1997). Criteria to be considered when purchasing hard hats shall include:

- Compatibility to welding hoods.
- Compatibility with earmuffs, splash goggles, face shields, etc.
- Comfort for the wearer.
- Ratchet suspension.

Bump caps and metallic hardhats are prohibited.

Approved Hardhats shall be worn at all times on all ROCIP projects except in designated areas (offices).

5.3 Eye/Face Protection

Safety glasses, goggles, and face shields shall meet ANSI Standard Z87.1-1989.

ANSI approval is distinguished on the frame and/or on the lens (Z87.1).

Approved eye protection shall be worn at all times except in designated areas such as offices. Approved face protection shall be worn as required by the hazard assessment.

Only those sunglasses approved by ANSI Z 87.1 are permitted on work sites.

Prescription glasses shall meet ANSI Standard Z 87.1-1989 or ANSI-approved glasses/goggles shall be used over non-ANSI approved prescription glasses.

Employees exposed to arc flashes shall wear eye/face protection that meets NFPA 70E standards appropriate for the maximum potential arc flash.

The cost of obtaining ANSI approved prescription lenses is the responsibility of the employer.

Face shields shall be used when an employee is using a quickie saw and on any other occasion when goggles or glasses provide insufficient protection.

Employees shall wear ANSI-approved safety glasses or goggles whenever they are using face shields.

5.4 Hand Protection

When hand protection is utilized or required the appropriate form of hand protection shall be worn as determined by the PPE hazard assessment.

5.5 Clothing

Employees shall wear protective clothing as determined by the PPE hazard assessment.

All employees engaged in “Hot Work” (energized circuits) shall wear the appropriate Fire Rated (FR) clothing. All employees engaged in working on live electrical circuits/components shall wear Arc Flash FR clothing sufficient to withstand the maximum arc flash anticipated.

All employees engaged in hot work (welding, cutting, brazing) shall wear the appropriate Fire Rated (FR) clothing.

Employees exposed to public vehicular traffic or working in the R.O.W. shall be provided with and wear class II or class III warning vests or other suitable garment marked with or made of reflectorized or high visibility material.

5.6 Hearing Protection

When hearing protection is utilized or required various types and styles of hearing protection shall be made available for employee selection and use.

In the event that hearing protection is required the protection chosen must have the ability to reduce the noise exposure to below 85 DBA. The Noise Reduction Rating (NRR) will indicate the amount of reduction provided by the specific hearing protection equipment. All requirements for this part shall be in accordance with 1926 subpart D.

5.7 Fall Protection

See the Fall Protection section of this manual.

5.8 Foot Protection

Footwear shall be determined in accordance with the PPE hazard assessment.

Appropriate sturdy leather footwear shall be worn at all times. No tennis shoes, running shoes, sandal, etc. are allowed on any project.

Employee operation hand operated compactors (“jumping jacks”) shall wear metatarsals.

All protective safety footwear shall meet the requirements and specifications of ANSI Z41-1991.

5.9 Respiratory Protection

See the Respiratory Protection section of this manual.

6. References

29 CFR 1926, 29 CFR 1910, and associated ANSI and NFPA standards.

Respiratory Protection - 24

1. Policy

Employees will be protected from the adverse effects of airborne contaminants or a lack of oxygen. Respiratory protection shall only be used when engineering controls are not feasible or while these engineering controls are being instituted.

2. Purpose

To provide guidance for respirator use in order to protect employees from any exposure to airborne hazards. This policy is designed to comply with the requirements of the Occupational Safety and Health Administration's Respiratory Protection Standard (29CFR 1910.134).

3. Scope

Applies to all ROCIP projects.

4. Definitions

IDLH – "Immediately Dangerous to Life and Health". An atmosphere that poses an immediate threat to life, would cause irreversible adverse health effects, or would impair a person's ability to escape from a dangerous atmosphere.

Respirator - Any personal protective equipment which is designed to protect a person's respiratory tract. Respirators include:

- Negative pressure air purifying devices - Respirators in which the air pressure inside the facepiece is negative during inhalation with the respect to the ambient air pressure outside the respirator. Filtering facepieces (commonly referred to as dust masks) fall under this category.
- Positive pressure air supplying devices - Respirators in which the pressure inside the respiratory inlet covering exceeds the ambient air pressure outside the respirator. Self-contained breathing apparatus (SCBA) certified by NIOSH for a minimum service life of 30 minutes, or a combination full facepiece pressure demand supplied air respirator with auxiliary self-contained air supply are examples of positive pressure air supplying devices.
- Powered Air Purifying Respirator (PAPR) – Respirators in which ambient air is pulled through a filter by a battery driven motor and forced into either a loose fitting hood or a tight fitting face piece.
- Escape-only respirators – Respirators intended for use only in escaping a hazardous atmosphere (e.g. loose-fitting respirators)

Hood – A respiratory inlet covering that completely covers the head and neck and may also cover portions of the shoulders and torso.

Employee Exposure means exposure to a concentration of an airborne contaminant that would occur if the contractor were not using respiratory protection.

End-of-service-life Indicator (ESLI) means a system that warns the respirator user of the approach of the end of adequate respiratory protection, for example, that the absorbent is approaching saturation or is no longer effective.

Fit Factor means a qualitative estimate of the fit of a particular respirator to a specific individual, and typically estimates the ratio of the concentration of a substance in ambient air to its concentration inside the respirator when worn.

Fit Test means the use of a protocol to qualitatively or quantitatively evaluate the fit of a respirator on an individual (see Qualitative Fit Testing and Quantitative Fit Testing).

Oxygen Deficient means an atmosphere with oxygen content below 19.5% by volume.

Qualitative Fit Testing means a pass/fail test to assess the adequacy of respirator fit that relies on the individual's response to the test agent.

Quantitative Fit Testing means an assessment of the adequacy of respirator fit by numerically measuring the amount of leakage into the respirator.

All the definitions of 29 CFR 1910 subpart I apply.

5. Requirements

5.1 Requirements

Respiratory protection requirements will be included in all hazard analysis. Confined Space Entry Permits, Welding, Cutting, and Hot Work Permits may also require respiratory equipment requirements for the task(s) being performed.

Employees shall not be allowed to enter an area requiring the use of a respirator without meeting all of the requirements of this policy and federal standards.

Medical evaluations shall be required for respirator users. Parameters of the medical evaluation are determined by a physician or other licensed health care professional (PLHCP) and required regulations.

Training and fit testing shall be required initially (prior to use) and annually thereafter for all respirator users.

Respirators not in use shall be maintained according to the manufacturer's requirements.

5.2 Respirator Selection

Respiratory hazards in the workplace must be evaluated to identify relevant workplace and user factors. Respirator selection will be based on those factors. This evaluation will include:

- Anticipated use of the material and employee exposure potential.
- Employee monitoring data.
- Exposure limits set by OSHA or the American Conference of Government Industrial Hygienists (ACGIH).
- Recommendation for respiratory protection by the chemical manufacturer.
- Toxicity of the material.

Note: Where the employee exposure cannot be easily identified or reasonably estimated the atmosphere will be considered to be IDLH.

A self-contained breathing apparatus will be required for all IDLH or potentially IDLH atmospheres.

The respirator selected for use in non-IDLH service must be appropriate for the state and physical form of the contaminant.

Where negative pressure respirators are worn for protection against gases and vapors employees must change out cartridges upon usage need and concentration level of substances. The number of hours before cartridge change-out is required will be adjusted when there is sufficient data to determine the breakthrough period. Each cartridge shall be dated with the current date upon putting into service.

Where negative pressure respirators are worn for protection against particulate (dust, mist, and fumes), an increase in breathing resistance or a change is smell or taste indicates that the filters should be changed out. Disposable dust masks should be changed out when there is an increase in breathing resistance or change in smell and after each use whichever occurs first.

All air purifying respirators shall be NIOSH approved for the types and levels of contaminants they are to protect against. All SCBA's shall be NIOSH approved with pressure demanded-regulators for the types and levels of contaminants they are to protect against.

5.3 Respirator Assignment

Employers shall be responsible for enforcing regular respirator use. Respirators shall be issued for routine and non-routine work to employees after medical evaluations, training and fit testing.

A list of authorized users by respirator type shall be maintained by the employer.

5.4 Training

The employer shall provide training to meet the requirement for respiratory protection. All training will be conducted in accordance with Federal and State laws, and best industry practices. Training will include, but not limited to 29 CFR 1910 Subpart I. Training is required for all employees who wear respirators prior to initial use.

Additionally annual refresher training is required for all employees who wear respirators. Training will be accomplished through one-on-one instruction during the fit-test and through classroom training. The employer is responsible for developing and conducting the classroom training. Training will consist of:

- Consequences of improper fit, use, or maintenance on respirator effectiveness.
- Limitations and capabilities of the respirators used by the employee.
- Instructions on how to change cartridges/canisters when breakthrough occurs.
- Appropriate use of respirators in emergency situations.
- Specific instruction on inspection, donning/removing, performing a user seal check, what to do if problems are encountered during inspection, how to report problems, and how to obtain replacement equipment.
- Procedures for maintenance and storage of respirators.
- A familiarizing period of wear in normal air.
- How to recognize medical signs and symptoms that may limit or prevent the effective use of respirators, i.e. shortness of breath or dizziness; and
- The general intent of the Respiratory Protection Standard (29 CFR 1910.134).
- In addition to the annual refresher training retraining in the use of respiratory equipment will be provided if any of these situations occur:
- Changes in the workplace or the type of respirator render the previous training ineffective or obsolete

Retraining shall occur before the next use of a respirator if:

- An employee is observed to demonstrate a lack of knowledge in the use of a respirator.
- There are changes in the respiratory equipment.

- In adequacies in the employee's knowledge or use of the respirator indicate that the employee has not retained the understanding or skill needed.

Any other situation arises in which the need for retraining in order to ensure proper respirator use is indicated.

All employees who are required to wear respirators while performing tasks required by their job assignment and those employees who elect to voluntarily wear a respirator shall have respiratory training. Those employees who voluntarily wear a dust mask shall read Appendix D of 29 CFR 1910.134.

5.5 Medical Evaluation & Fit Testing

The use of a respirator may place a physiological burden on an employee that can vary with the type of respirator worn, the task being performed, the workplace conditions in which the respirator is being used, and the medical status of the employee. Because of this, it is required that each employee who is required to wear a respirator to perform the task(s) required by his/her job and those employees who voluntarily wear a respirator receive a medical evaluation prior to being fit-tested and prior to being asked to use a respirator.

It is not necessary for an employee to have a medical evaluation to wear the escape-only respirator.

Initial Evaluation

All employees who will be required to use a respirator will complete a medical questionnaire. In addition to completing the questionnaire for evaluation employees will be required to have a baseline Pulmonary Function Test.

Additional Evaluations

Additional Medical Evaluation will be required if:

- An employee reports medical signs or symptoms that are related to the ability to use a respirator.
- Observations during fit testing or in program evaluation indicate a need.
- A change occurs in workplace conditions that may result in a substantial increase in the physiological burden placed on an employee (e.g. significantly increased protective clothing requirements).

Annual Evaluation

After the initial medical evaluation an annual review is required for personnel who continue to be required to wear a respirator.

Fit Testing

Before an employee will be allowed to wear a tight-fitting respirator, negative, or positive pressure he/she must pass a fit test for the specific make, model, style, and size of the respirator to be used. Quantitative fit tests will be required for employees who are required to wear any negative pressure or supplied air respirator. In the event that a quantitative fit test cannot be performed a qualitative fit test will be performed in its place. The Administrator for Respiratory Protection program or their designee will conduct fit tests. Employees will be fit tested on each type of respirator that they are required to wear. Fit testing will be repeated annually and prior to the employee using a different respirator or type of respirator facepiece. Additional fit testing will also be required if there is a change in the person's physical condition that could affect respirator fit. Employees who are to be fit tested to wear tight-fitting respirators must be clean shaven in the seal area.

Documentation

The employee's fit test qualification will be kept in his/her file.

Use of Respirators

Employees are required to perform a user seal check every time they use a tight-fitting respirator. User seal checks are not intended to take the place of the required fit test.

When conditions change in the workplace in a way that may affect the effectiveness of a respirator the respiratory program administrator must be notified so that changes to the respiratory requirements can be made as needed.

5.6 Maintenance, Care, and Storage

Cleaning and Disinfecting of Personal Negative-Pressure Respirators

Respirators must be kept clean and disinfected so that they are ready for use at all times. The employee is responsible for cleaning his/her respirator in accordance with the manufacturer's requirements at the end of the shift each time the respirator has been used.

Storage of Respirators

All personal respirators shall be stored to protect them from damage, contamination, dust, sunlight, extreme temperatures, excessive moisture and chemical damage. They should not be stored outdoors, in a process area, with tools or chemicals, or underneath equipment. The recommended mode of storage for personal respirators is inside a clean plastic bag. Respirators shall not be stored with cartridges attached. Each pair of cartridges is factory sealed in a plastic bag they are dated as to the date of manufacture. The cartridges have a shelf life of three years as long as they are unopened.

Inspection of Respirators

All respirators used in routine service shall be inspected before each use and during cleaning.

The person who will be wearing the respirator prior to each use must perform a before-use inspection. This includes supplied-air respirators as well as negative-pressure respirators. The inspection must include:

- A functional check of the respirator, tightness of connections, condition of the various parts including the facepiece, head straps, valves, connecting tube, cartridges and/or filters.
- A check of the elastomeric parts for pliability and signs of deterioration.
- Supplied-air respirators must be inspected to ensure that the breathing air cylinder is at least 90% full and that the regulator and warning devices work as designed. Breathing air cylinders that are less than 90% full (below the full mark) should be replaced and arrangements made to have the cylinder refilled.

5.7 Program Surveillance

Program effectiveness shall be evaluated through regular inspections of each area/situation where respirators are used and stored. The safety coordinator or supervisor shall be responsible for these evaluations.

Work areas where emergency respirator use may be required shall be reviewed.

The procedures to be taken during an emergency are included in the emergency action plan established by the General Contractor.

5.8 Recordkeeping

Records of medical evaluations shall be retained and made available per 29 CFR1910.134.

5.8.1 Site Administrator for Respirator Protection

In accordance with 1910.134, the site shall maintain a site administrator for respiratory protection. This administrator shall be responsible for overseeing of the respirator program including fit testing, training, and auditing. The site administrator must attend a refresher training every 3 years.

5.9 Respirator Details

5.9.1 SCBA Basics

Open-circuit systems with pressure-demand regulators are recommended for use in both oxygen-deficient and IDLH atmospheres.

The buddy system is required when using SCBA in immediately dangerous to life health (IDLH) environments.

All SCBA shall have an alarm that goes off when 20-25% of the air is left.

Any SCBA with less than a 15-minute air supply may be used for emergency escape only.

5.9.2 Air Line Respirator Basics

Air may be supplied from an air cylinder or a compressor (oxygen shall not be used). Cylinders are to be tested and maintained according to DOT regulations and need to be properly labeled.

As related to compressors:

- Contractor shall ensure that carbon monoxide levels in the breathing air do not exceed 10 PPM.
- Oil-lubricated types need either a high temperature or CO alarms or both. If only a high temperature alarm is used, the air shall be tested routinely to ensure a CO level of not more than 10 PPM.
- Alarms are necessary to indicate compressor failure and overheating.
- Between the compressor and the receiver air shall pass through a particulate filter followed by a bed of activated charcoal and moisture absorber. The filters and absorbents shall be inspected regularly and changed as necessary.
- The intake of the compressor should be protected by locating it away from sources of contamination such as auto exhaust or the exhaust of engines which run the compressor.

Air-line couplings shall not be the same size or types as other gas system outlets.

In an immediately dangerous to life or health (IDLH) atmosphere:

- A wearer shall also have an auxiliary self-contained supply of respirable air for escape.
- A stand-by person with self-contained breathing apparatus shall be available for emergency rescue.

Air-line respirators need a flow control valve to govern air flow. Air flow depends on the length of the hose and the mask and is specific for each respirator type, make, and approval. Never circumvent the manufacturer's recommendations. Air-line respirators are approved as systems. Any interchange of parts between units of different manufacturers or systems shall void the NIOSH/MSHA approval. Breathing air quality shall meet the requirements of 1910.134

6. Responsibilities

6.1 Employer(s)

Overall accountability for respiratory protection program with direct program implementation and maintenance assigned to the employer's program administrator. The employer will review the effectiveness of the program on a regular basis.

Ensure fit testing and training are properly documented.

Periodically audit respirator permitted areas to determine the effectiveness of the program.

Remove unapproved respirators from service.

Maintain a list of current approved respirators by NIOSH that are used in the Respiratory Program.

6.2 Contractor Superintendents/Supervisors

Ensure that subcontractor training, fit testing, and medical evaluation requirements are met.

Maintain surveillance of work area conditions and levels of contractor exposure or stress.

6.3 Physician or other Licensed Health Care Professionals (PLHCP)

Medical evaluations shall be conducted by a PLHCP. They shall determine if the employee is medically fit to use a respirator.

The frequency of follow-up medical evaluations shall occur defined by the health care professional during the initial evaluation, based on expose.

7. References

CFR 29 CFR 1910.134
CFR 29 CFR 1910.1000
ANSI Z88.2 1969
ANSI Z88.2 1980
ANSI Z88.6 1984
NIOSH Guide to Industrial Respiratory Protection (Published 1987)

Scaffolding - 25

1. Policy

Scaffolding shall be constructed and used in a safe manner.

2. Purpose

Procedures for the safe erection, use, and dismantling of scaffold systems.

3. Scope

Applies to all ROCIP.

4. Definitions

All definitions of 29 CFR 1926 subpart L apply

Competent Person means one who is capable of identifying existing and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous or dangerous to personnel, and who has authorization to take prompt corrective measures to eliminate them.

Qualified Person means a person who, by possession of a recognized degree, certificate, or professional standing, or who by extensive knowledge, training and experience has successfully demonstrated his/her ability to solve or resolve problems related to the subject matter, the work, or the project.

5. Requirements

5.1 General

Scaffolds shall be erected, used, modified, and dismantled in accordance with the requirements of this policy and those of regulatory agencies. These standards also apply to contracted parties responsible for these activities.

When scaffold assemblies are no longer required they shall be dismantled and removed.

Only Competent Persons designated as scaffold builders by the employer are authorized to construct, modify, and dismantle scaffolds.

Only persons who are trained and designated as scaffold users may enter onto scaffold assemblies except for stand-alone scaffold stairways.

Persons working inside the confines of a completed scaffold are not required to wear fall protection equipment unless otherwise specified.

5.2 Designing and Building Scaffolds

Only a Qualified Person shall design scaffold systems.

Tube and coupler or fabricated frame scaffolds over one hundred and twenty-five (125) feet in height shall be designed by a Registered Professional Engineer, and shall be constructed and loaded in accordance with that design.

A designated Competent Person shall direct the erection, repair, and dismantling of scaffolding systems.

A Competent Person shall be at the physical location where scaffold assemblies are under construction, being modified, or being dismantled.

5.3 Training

5.3.1 Scaffold Users

Prior to the commencement of work scaffold users shall be trained by a Competent Person to recognize the hazards associated with the type of scaffold being used and to understand the procedures to control or minimize those hazards. The training shall include the following areas as applicable:

- Recognition of known hazards.
- Correct procedures for dealing with electrical hazards and for erecting, maintaining, and disassembling the fall protection systems and falling object protection systems being used.
- Maximum intended load and load-carrying capacities and the type of scaffold(s) used.
- All other pertinent information associated with this policy manual section and 29 CFR 1926 Subpart L.

5.3.2 Scaffold Builders and Inspectors

Scaffold builders and inspectors shall be trained by a Competent Person to recognize any hazards associated with the work being conducted.

The training shall include the following areas as applicable:

- Nature of scaffold hazards.
- Correct procedures for erecting, disassembling, moving, operating, repairing, inspecting, and maintaining the type of scaffold(s) used
- Design criteria, maximum intended load-carrying capacity and intended use of the scaffold(s)
- All other pertinent information associated with this policy manual section and 29 CFR 1926.451 Subpart L

5.3.3 Refresher Training

Any scaffold builder, inspector or user who displays a lack of skill or understanding for conducting their work safely shall be retrained until such skill is observed to be understood satisfactorily.

Retraining shall include the following areas, at a minimum:

- Any changes at the worksite that have not been previously trained.
- Any changes in the type of scaffold, fall protection, falling object protection, or other equipment have not been previously trained.
- Any particular points of skill or understanding that is not being proficiently displayed.

5.4 Inspections

5.4.1 Competent Person Inspection

Upon the completion of a scaffold assembly a Competent Person is responsible for conducting an inspection to verify the condition of the assembly.

5.4.2 Daily Inspection

Competent Persons are responsible for visually inspecting scaffolds and work platforms for defects and damage prior to use each day. If defects or damage is noted or discovered work shall stop and the immediate supervisor shall be notified and work shall not commence until corrective action has been taken.

These inspections shall be documented on an inspection tag attached to the scaffold assembly or a form that is retained.

This inspection shall include the following information:

- Name of the person inspecting scaffold
- Name of Users
- Date inspected
- Items inspected shall be documented appropriately by comment (on the tag) or by initialing an inspection checklist.

5.5 Scaffold Inspection Tags

Because not all scaffolds are constructed to a 100% complete state a scaffold tagging procedure as defined in this document shall be used to identify the condition of a scaffold assembly.

During the construction phase of a scaffold assembly a “Red” Scaffold tag shall be affixed to the assembly and remain in place until a final inspection has been conducted.

Personnel shall not use scaffolds that **do not** have a yellow or green scaffold tag affixed to it.

Scaffold tags shall be in use while scaffolds are being erected, modified, used and dismantled. Only Scaffold Builders are permitted to be on a scaffold with a Red Tag (Danger, Do Not Use Scaffold).

5.5.1 Green Tag

A Green tag shall be used to indicate a scaffold is complete and ready for use. This tag authorizes personnel to use the scaffold without fall protection equipment while working within the confines of the work platform.

5.5.2 Yellow Tag

A yellow tag indicates a scaffold is not complete.

5.5.3 Red Tag

A red tag indicates a scaffold is not safe to use.

5.6 Access

Access shall be provided to scaffold platforms when they are more than nineteen (19) inches above or below a point of access. Cross braces shall not be used for access. Acceptable access includes:

- Portable ladder, hook-on ladder, attachable ladder.
- Stair tower.
- Stairway-type ladder.
- Ladder stand.
- Ramp.
- Walkway.
- Integral prefabricated scaffold access or direct access from another scaffold.
- Personnel hoist.

A safe means of access shall be provided for personnel erecting and dismantling a scaffold where the provision of safe access is feasible and does not create a greater hazard as determined by a Competent Person. This decision shall be based upon site conditions and the type of scaffold being erected or dismantled.

Hook on type ladders shall be installed as soon as scaffold erection has progressed to a point that permits safe installation and use.

5.7 Working on Scaffold Assemblies

Scaffolds shall not be loaded in excess of their maximum intended loads or rated capacities whichever is less.

Any part of a scaffold damaged or weakened shall be taken out of service until repaired, replaced, or braced to meet requirements.

Employees shall not be on scaffolds while they are moved horizontally except:

- When designed by a registered engineer specifically for such movement; or.
- Provisions for mobile scaffolds are followed (CFR 29 CFR 1926.452 (w).

Employees shall not be permitted to work on scaffolds covered with snow, ice or other slippery material except as necessary for removal of such materials. Under these circumstances slip resistant footwear and other precautions shall be taken to ensure personnel do not fall from the scaffold assembly.

Protection from falling objects such as tools, equipment, materials, and debris is required for personnel working on scaffolds and work platforms. Protection includes installation of toe boards, screens, guardrail systems, debris nets, catch platforms, deflectors or canopies. Heavy, massive and large objects shall be placed away from edges and secured in place to prevent accidental falling.

The area below scaffolds shall be barricaded to protect personnel working below from falling objects.

Employees shall not be permitted to work on scaffolds during storms and high winds unless a Qualified Person has determined that it is safe and personnel are utilizing fall protection equipment. Windscreens shall not be used unless scaffolds are designed to withstand wind loads and the load of the windscreen itself.

Employees shall not be permitted to work on scaffold assemblies when electrical storms are visible and in near proximity.

Debris shall not be allowed to accumulate on work platforms.

Barrels, boxes, blocks, bricks, and other devices shall not be used to increase the working level height of personnel on any type of scaffold.

5.8 Electrical Lines and Hazards

All electrical lines shall be treated as 'live' unless proven otherwise.

Clearance between scaffolds and electrical power lines during erection, use, and dismantling shall be as follows:

Insulated Lines Voltage	**Minimum Distance**	**Alternatives**
Less than 300 Volts	3 Feet	
300 Volts to 50 kv	10 Feet	
More than 50 kv	10 feet plus 0.4 inches for each 1 kv over 50 kv 2	times the length of the line insulator, but never less than 10 feet
Un-insulated Lines Voltage	**Minimum Distance**	
Less than 50 kv	10 Feet and no contact can be made during material handling operations	
More than 50 kv	10 feet plus 0.4 inches for each 1 kv over 50 kv	

Exception is granted to these requirements when the utility operator or electrical system operator has de-energized the systems, relocated the lines, or installed protective covering to prevent accidental contact with the lines. This must be verified and documentation available at the jobsite.

6. References

29 CFR 1926 Subpart L
ANSI Guidelines as referenced

Tools - 26

1. Policy

Tools shall be in good working order and shall be safely used for their intended purpose in accordance with manufacturer specifications.

2. Purpose

To define the procedures for the safe use, care, and inspection of tools.

3. Scope

Applies to all ROCIP projects.

4. Definitions

None

5. Requirements

5.1 General

Appropriate personal protective equipment (PPE) shall be used with all tools.

Electrically powered tools shall not be carried, hoisted, lowered, or handled by their electrical cords.

Where practical, tools or devices should be used to hold chisels, stakes, and other implements driven or struck with a hammer. Hands shall be kept clear of impact tools.

Guards shall not be removed from tools.

When using ladders tools that cannot be carried safely in a tool belt shall be hoisted to/from the work position by a rope or by other means.

Tools, except for small tools within a tool belt, shall not be carried while climbing ladders, platforms, and other structures where the hands are required for gripping, stability, movement and balance.

Precautions shall be taken to prevent tools from dropping onto others and equipment that could be damaged by falling objects.

Only authorized persons shall be permitted to repair tools.

Tools shall not be altered from their original design.

Tools shall be used according to their design. Handles shall be in place and used during the operation.

All 120 Volt A.C operated tools shall be used in conjunction with a Ground Fault Circuit Interrupter (GFCI). GFCI's shall be tested before each use.

Tools shall not be left on scaffolds or elevated workspaces.

On-off switches controlling the operation of hand-held powered tools shall conform to the following requirements:

- All hand-held powered sanders, grinders with 2-inch or less diameter wheels, routers, planers, laminate trimmers, nibblers, shears, scroll saws, and jigsaws with blade shanks 0.25 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 exceeding 2 inches in diameter; disk sanders; belt sanders; reciprocating saws; saber saws; and other similar tools shall be equipped with a momentary contact on-off control. They may have a lock-on control provided the turnoff can be accomplished by a single motion of the same finger or fingers that turn it on.
- Jackhammers and similar pneumatic-powered hand tools and other hand-held power tools including chainsaws, circular saws, and percussion tools shall be equipped with a constant pressure switch that shuts off power when pressure is released.

Only non-sparking tools shall be used in locations where sources of ignition may cause an explosion or fire.

Employees shall not work under areas where hand-held tools are being used unless the tools are equipped with restraining straps or appropriate decking, planking, and netting are provided for contractor protection.

When the periphery of the blades of a fan is less than seven (7) feet above the floor or working level, the blades shall be guarded. The guard shall have openings no larger than 1/2 inch.

Machines designed for a fixed location shall be securely anchored to prevent walking or moving.

Loose or frayed clothing or long hair, necklaces, dangling ties, finger rings, etc. shall not be worn around moving machinery or other sources of entanglement.

5.2 Inspections

All hand and power tools will be inspected in accordance with the manufacturer's requirements.

Only authorized persons shall inspect, test, or repair hand or power tools.

Users shall be trained to visually inspect the tools they are assigned to use.

Users are responsible for visually inspecting the tools they use each day for visual defects. Defective tools shall be reported to the appropriate supervisor and taken out of service.

"Do Not Use" tags shall be attached to defective tools. The tag shall have the name of the person who attached it, date, and a description of the defect. The appropriate supervisor shall be notified when a defective tool is tagged out of service.

Defective tools shall be removed from the project until they are repaired. Non-repairable tools shall be destroyed.

5.3 Abrasive Blasting Tools

The blast cleaning nozzles shall be equipped with an operating valve which must be held open manually. A support shall be provided on which the nozzle may be mounted when it is not in use.

Abrasive blasting suits shall be inspected daily for leaks, tears, and general conditions. Defective equipment shall be taken out of service until repairs are completed or the suit is replaced.

5.4 Air Hoses

All hoses exceeding ½ inch inside diameter shall have a safety device at the source of supply which will automatically reduce pressure in case of a line failure. All connections, couplings, and splices in air lines exceeding ½ inch inside diameter shall be equipped with clips and wire rope or chain lashings. The clips and lashings shall be installed in a manner that prevents whipping of the hose line should the connection coupling or splice fail.

Air hoses shall not be disconnected at compressors until air pressure has been relieved.

The manufacturer's safe operating pressure for hoses, pipes, valves, and fittings shall not be exceeded. Defective hoses, valves, and fittings shall be removed from service.

Compressed air shall not be directed at any part of the body. Compressed air shall not be used for cleaning purposes, except when reduced to less than 30 PSI, and then only with effective chip guarding and the operator protected by applicable personal protective equipment.

Air hoses shall not be used for hoisting or lowering tools. Hoses shall not be laid on ladders, steps, scaffolds, or walkways in a manner creating a tripping hazard. Air hoses shall not be exposed to damage from vehicle or other traffic.

5.5 Drill Press

Pieces of metal being drilled shall be held tightly in a vise or clamp.

Before drilling the employee shall check the spindle speed and the setup.

Before drilling the chuck key shall be removed. Never leave the chuck key in the chuck.

5.6 Electric Powered Tools (general)

Electric powered tools shall be double-insulated type or effectively grounded as required for ground fault protection or other grounding and bonding requirements.

Power cords shall not be used for hoisting or lowering tools. Power cords shall not be laid on ladders, steps, scaffolds, or walkways in a manner creating a tripping hazard. Electric power cords shall not be exposed to damage from vehicle or other traffic.

When automatic restarting would create a hazard electrically driven equipment shall be controlled with a device that will prevent automatic restarting following a power failure.

5.7 Fuel Powered Tools (general)

All fuel powered tools shall be stopped while being refueled, serviced, or maintained, and fuel shall be transported, handled, and stored as appropriate for the type of material.

When fuel powered tools are used in enclosed spaces the applicable requirements for concentrations of toxic gases and use of personal protective equipment shall apply.

Gasoline powered tools shall not be used inside, underground, or in locations where toxic exhaust gases can accumulate.

5.8 Grinders

All abrasive wheels shall be closely inspected and ring-tested before mounting to ensure that they are free from cracks or other defects. Cracked or defective abrasive wheels shall be removed from service immediately.

Grinding wheels shall be carefully installed and not forced.

Whenever possible, when grinding with a portable grinder, position the grinding wheel so that the sparks and steel go away from the person doing the work.

Nonferrous metal should not be ground because of the danger of exploding grinding wheels unless the grinding wheel is designed to grind these metals.

Sheet metal and other small pieces of work shall never be ground on a pedestal grinder.

Grinding shall never be done against the side of the wheel.

Grinding wheels shall not be used if the pores are clogged. The wheels shall also be free of large chips and grooves.

5.9 Grinders (bench and floor stand)

Floor and bench-mounted grinders shall be provided with readily adjustable work rests which are rigidly supported. The tool rest shall always be set within 1/8 inch away from the wheel. The nose guard shall be adjusted to within 1/4 inch of the wheel.

Grinding tools shall not be used without the safety guards.

All abrasive wheel bench and stand grinders shall be provided with safety guards that cover the spindle ends, nut, and flange projects and are strong enough to withstand the effects of a bursting wheel.

5.10 Hand Tools (general)

Sharp tools such as chisels, screwdrivers, knives, and pointed objects shall not be carried in pockets. Sharp tools carried by hand shall have the sharp or pointed end facing away from the body.

Lengths of pipe shall not be used as an extension of a tool to increase torque. For example a length of pipe inserted over the handle of a pipe wrench.

Persons shall not hammer on any wrenches unless they are designed for that purpose.

The wooden handles of tools shall be kept free of splinters or cracks and shall be kept tight in the tool. Impact tools such as drift pins, wedges, and chisels, shall be kept free of mushroomed heads.

Screwdrivers shall not be used as chisels.

Wrenches, including adjustable pipe, end, and socket wrenches shall not be used when jaws are sprung to the point that slippage occurs.

Files shall be equipped with handles and not be used to punch or pry.

5.11 Hydraulic-Powered Tools (general)

The manufacturer's safe operating pressure for hoses, valves, pipes, filters, and fittings shall not be exceeded.

The fluid used in hydraulic powered tools shall be an approved fire-resistant fluid and checked on a regular basis.

Stationary presses shall be provided with guards that adequately contain flying particles forcibly expelled from the material being compressed.

5.12 Jacks (ratchet, screw, and hydraulic)

The manufacturer's rated capacity shall be legibly marked on all jacks and shall not be exceeded.

Jacks of any type shall have a positive stop to prevent over-travel.

Jacks shall be set on a stable and firm footing and cribbed or blocked where necessary to prevent settlement or dislodgment. Where there is a possibility of slippage of the metal cap of the jack a wood block shall be placed between the cap and the load. After the load has been raised it shall be cribbed, blocked, or otherwise secured at once.

Persons shall not work under vehicles supported by bumper jacks or chain hoists without protective blocking that will prevent injury if jacks or hoists should fail.

All jacks shall be properly lubricated at regular intervals.

Each jack shall be inspected as required by the federal standard.

5.13 Nail Guns

Shall be provided with an automatically closing valve actuated by a trigger located inside the handle where it is reasonably safe from accidental operation. The machine shall operate only when the trigger is depressed.

Do not pull trigger or depress contact arm while connected to air supply.

When in operation always point the contact arm downward away from the personnel.

The air supply shall be disconnected when reloading or servicing of a nailing gun.

Pneumatically driven nailers, staplers, and similar equipment provided with automatic fastener feed shall have a safety device on the muzzle to prevent the ejection of the fasteners unless the muzzle is in contact with the work surface.

5.14 Pneumatic Tools (general)

The pneumatic impact tools shall have the following features:

- An automatically closing valve activated by a trigger located inside the handle where it is reasonably safe from accidental operation. The machine shall operate only when the trigger is depressed.
- A retaining device that holds the tool in place so that it cannot fly off accidentally from the barrel.
- Be provided with heavy rubber grips to reduce operator vibration and fatigue.

Pneumatic power tools shall be secured to the hose in a positive manner to prevent accidental disconnection.

5.15 Powder-Actuated Tools

Powder-actuated tools shall be operated and serviced only by persons who have been trained and certified in the use of such tools. Operators shall possess a training card at issued by a firm or person authorized to issue such cards.

Operators of powder-operated tools shall wear safety goggles and face shields and utilize hearing protection when the tool is in use. Other employees working in close proximity to this activity shall also utilize hearing protection.

Powder-actuated tools shall not be used in explosive or flammable atmospheres.

Only powder charges, studs, or fasteners specified by the manufacturer for the specified tool shall be used.

Tools shall be designed to operate only when pressed against the work surface with a force at least 5 pounds greater than the weight of the tool. They shall be constructed so the tool cannot fire when dropped or during loading or preparation to fire. All tools shall be used with the correct shield, guard, or attachment recommended by the manufacturer.

Driving into soft or easily penetrated material is prohibited unless the material is backed to prevent the pin or fastener from passing completely through and creating a flying missile hazard on the other side. Tools shall not be used on very hard or brittle materials including, but not limited to, cast iron, glazed tile, surface hardened steel, glass block, live rock, face brick, or hollow tile. No fastener shall be driven into a spalled area caused by an unsatisfactory fastening.

Tools shall not be loaded until just prior to firing. Loaded tools shall not be left unattended. Neither loaded nor empty tools shall be pointed at any person and all parts of the body shall be kept clear of the muzzle.

Tools shall be tested each day before loading to ensure that the safety devices are in proper working order; the test shall be conducted in accordance with the manufacturer's recommended test procedures.

High-velocity tools shall be used only for those applications where low-velocity tools will not meet the job requirements.

Work sites where powder actuated tools are used shall maintain a list of all powder-actuated tools and names of certified operators. This list shall be made available at the control point of where tools are issued or controlled and distributed to supervisory personnel as appropriate.

Signs warning of the use of powder-actuated tools shall be posted appropriately.

5.16 Saws (bench and radial-arm)

Bench-type circular saws shall be equipped with spreaders, anti-kickback devices, and guards that automatically enclose the exposed cutting edges.

Radial arm saws and swing cutoff saws shall be equipped with:

- Limit stops, which prevent the leading edge of the blade from traveling beyond the edge of the table.

- Hoods and/or guards that protect the operator from flying material, direct the sawdust toward the back of the blade, and enclose all parts of the blade not in contact with the material being cut.
- Automatic brakes or automatic return devices.

Power saws shall not be left running and unattended.

Push sticks or other devices shall be used to guide materials through the cutting plan of circular saws.

The hand, arm, or any other part of the body shall not pass over the saw blade while it is in operation.

Cracked, bent, or otherwise defective blades shall be removed from service.

The blade of a table saw shall not be set higher than (1/16") one sixteenth of an inch above the material being cut.

5.17 Saws (portable electric)

Portable circular saws shall have the following features:

- Guards above and below the base plate.
- Both guards shall cover the saw to depth of the teeth.
- When the tool is withdrawn from the work the lower guard shall automatically and instantly return to the covered position.
- Be equipped with a constant pressure switch or control that shuts off the power when pressure is released.
- ***The hand, foot, knee, leg, or any other part of the body shall not be used as a support for materials.***

5.18 Spray Guns (airless)

Airless spray guns of the type which atomize paints and fluids at pressures of 1,000 PSI or more shall be equipped with automatic or visible manual safety devices, which will prevent pulling of the trigger and prevent release of the paint or fluid until the safety device is manually released.

In lieu of the above, a diffuser nut to prevent high-pressure release when the nozzle tip is removed and a nozzle tip guard to prevent the tip from contacting the operator or other equivalent protection shall be provided.

5.19 Washing and Steam Units (high pressure)

Employees who use high pressure washing tools and steam cleaning systems shall follow the manufacturer operating instructions and wear required protective equipment.

As a minimum, operating personnel are required to wear protective footwear, eye and facial protection, and hand protection as determined by the operating process, operating design, and manufacturer specifications.

Employees who operate high pressure washing units or steam systems shall be trained and qualified by a Competent Person.

5.20 Winches and Hoists (hand-powered)

Hand-powered winches and hoists shall be used within the manufacturer's rated capacity, and the capacity shall be legibly marked on the winch or hoist.

The use of hand cranks is prohibited unless the winch or hoist is equipped with positive self-locking dogs or if the wormgear type hand wheels do not have projecting spokes or knobs.

5.21 Woodworking Tools (general)

Switches shall be located to enable the operator to cut off the power without leaving his operating position. Fixed power-driven tools shall be provided with a disconnect switch that can be locked or tagged in the off position.

When automatic restarting would create a hazard, electrically driven equipment shall be controlled with a device that will prevent automatic restarting following a power failure.

A push stick, block, or similar safe means shall be used for all operations close to high-speed cutting edges.

Planers and joiners shall be equipped with cylindrical cutting heads and fully guarded.

Band saw blades shall be fully enclosed except at the point of operation.

6. References

CFR 29 CFR 1910 (as applicable)
CFR 29 CFR 1926 (as applicable)
Applicable Manufacturer Manuals

Welding and Cutting - 27

1. Policy

Work activities involving welding and cutting shall be conducted in a safe manner.

2. Purpose

To define the safety requirements for welding, cutting, brazing, metals grinding, and other hot work.

3. Scope

Applies to all ROCIP projects.

4. Definitions

Authorized Persons means the employee(s) for the work area or a designated site safety coordinator for that work site.

Authorized Free-Burn Area means a work area where no sources of combustion are present therefore no 'Hot Work Permit' would be required.

Combustible means any material that has the possibility of catching fire or supporting a fire.

Fire watch means contractor(s) employees trained and assigned to monitor or watch for potential fires or fire hazards and warn others in the event of an emergency or unsafe condition.

Hot Work means the performing of operations capable of providing a source of ignition e.g. riveting, welding, cutting, grinding, soldering, burning, and heating.

5. Requirements

5.1 General

Authorized hot work areas for welding and cutting shall be free of flammable and combustible materials and have adequate fire extinguishing equipment.

5.2 Hot Work Permits

Permits for Hot Work are required for all welding, cutting, and brazing operations exclusive of those areas designated as authorized or free-burn areas.

When hot work is to be performed that does not meet the requirements of 5.1 the contractor or employee performing the hot work shall complete a Hot Work Permit before commencing work. Upon completion of the work the permit shall be turned in to the permit issuer (safety representative).

Permit issuers shall retain returned permits for a minimum of 30 days from the date of return.

A new permit shall be completed where there is an interruption in the work process such as meal breaks; shift changes, work condition changes, or the area has been left unmonitored for significant periods of time.

Before beginning hot work activities the affected area(s) shall be inspected and results documented on the Hot Work Permit.

Only authorized persons are allowed to use flame or spark producing equipment.

Air monitoring shall be conducted in accordance with the established procedures and regulations.

5.3 Fire Prevention and Protection

If the object to be welded or cut cannot be readily moved to an area designated for hot work all moveable fire hazards shall be moved at least 35 feet from the work site.

Combustibles and flammables that cannot be relocated shall be isolated from ignition sources by flameproof covers or otherwise shielded with metal or fire-resistant guards or curtains.

Appropriate fire extinguishing equipment shall be readily available for use whenever hot work is performed.

A fire watch shall be provided when welding or cutting is performed outside of a free burn area. The fire watch will remain in the watch area for a minimum of thirty (30) minutes at the completion of hot work activities to ensure there is no smoldering fires or potential for fire.

5.4 Confined Spaces

No Hot Work will be conducted in any confined space that contains or has the potential to contain explosive, flammable, or combustible atmospheres.

All welding and cutting operations conducted in confined spaces shall be adequately ventilated to prevent the accumulation of toxic materials or possible oxygen deficiency. This applies not only to the welder but also to helpers and other personnel in the immediate vicinity. All air that is replacing the air that is withdrawn shall be clean and respirable.

In circumstances for which it is impossible to provide such ventilation airline respirators or hose masks approved for this purpose by the National Institute for Occupational Safety and Health (NIOSH) must be used.

In areas immediately hazardous to life a full-face piece pressure-demand self-contained breathing apparatus or a combination full-face piece, pressure-demand supplied-air respirator with an auxiliary, self-contained air supply approved by NIOSH must be used.

Where welding operations are carried on in confined spaces and where welders and helpers are provided with hose masks, hose masks with blowers, or self-contained breathing equipment a worker shall be stationed on the outside of such confined spaces to insure the safety of those working within.

All respiratory equipment will be approved by MSHA or NIOSH.

All work performed in confined spaces shall conform to the Confined Space Policy of this Manual.

5.5 Compressed Gas Cylinders

Empty cylinders shall be labeled as such and kept separate from full cylinders.

Cylinders shall be used in an upright position particularly those containing liquefied gas or acetylene.

When transporting cylinders they shall be upright, secured, gauges removed, and capped.

Cylinders shall be secured against being knocked over with a non-combustible restraint such as a chain.

Oxygen cylinders in storage shall be separated from fuel-gas cylinders and any flammable or combustible materials by a minimum of twenty (20) feet or by a non-combustible barrier at least five (5) feet in height having a fire-resistance rating of at least one-half hour.

The gauges shall be removed and the metal cylinder cap shall be in place to protect the valve when a cylinder is not in use.

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. A cylinder not provided with a hand wheel valve shall be opened with a spindle key or a special wrench or other tool provided or approved by the gas supplier or manufacturer.

DO NOT use a cylinder of compressed gas without a pressure-reducing regulator attached to the cylinder valve.

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, sparks, open flames, or other sources of ignition.

Use regulators and pressure gauges only with the gases for which they were designed and intended. DO NOT attempt to repair or alter cylinders, valves, or attachments. The glass face of gauges shall be kept intact.

Gauges shall be turned off and hoses shall be ‘bled’ when not in use.

All fuel-gas welding, burning, and cutting equipment shall be equipped with a check valve.

5.6 Energy Control (Lockout)

When systems must be shut down to accomplish the hot work, the shutdown shall be performed in accordance with the Energy Control procedures (Lockout) section of this manual.

5.7 Welding or Cutting of Containers and Piping

No hot work shall be performed on used drums, barrels, tanks, or other containers until it can be determined that absolutely no flammable materials or other materials are present which, when subject to heat, might produce flammable or toxic vapors. Containers shall be adequately vented to the atmosphere to prevent explosion. When containers do contain flammable or toxic materials, the following precautions shall be taken:

- Piping to the containers shall be disconnected or blanked off.
- The container shall be purged with an inert gas.
- After purging is completed the atmosphere in the container shall be sampled to ensure it is safe for hot work.

5.8 Fire Watch

5.8.1 Training

Personnel assigned to perform "Fire Watch" duties shall be trained prior to assignment to perform such duties. Training shall include:

- Use of firefighting equipment such as extinguishers and water hoses.
- Emergency notification procedures.
- Property of fires.
- Duties of a "Fire Watch".
- Potential hazards.
- Use of emergency equipment.

5.8.2 Responsibilities

5.8.2.1 Supervisors

- Complete an assessment of the work to be performed.
- Review the Hot Work Permit.
- Ensuring personnel assigned to conduct Hot Work have been properly trained.
- Ensure fire watches have received adequate instruction and training.
- Be responsible for safe use of the cutting or welding equipment.
- Determine what combustible materials and hazardous areas are present or likely to be present in the work location.
- Ensure that unmovable combustibles are protected from ignition.
- See that cutting and welding are scheduled so that operations that might expose flammables/combustibles to ignition are not conducted during cutting or welding operations.
- Secure authorization for any Hot Work from the designated management representative.
- Ensure that the employee conducting Hot Work secures the supervisors approval that conditions are safe before beginning operations.
- Ensure that fire protection and extinguishers are readily available at all times.
- Ensure that if Fire Watches are required, they are at the site.

5.8.2.2 Fire watch personnel

The primary responsibility of a "Fire Watch" is to monitor for potential fire hazards and the presence of fire during operations such as welding and cutting. This includes:

- Having the ability to communicate to employee(s).
- Continuously monitor the area surrounding the immediate work area for conditions that could result in a fire or explosion.
- Immediately stop all Hot Work in the event of an emergency or other unplanned event affecting the safety of employee(s).
- Know the permit requirements relative to fire protection and ensure they are being followed as work is being performed.
- Extinguish fires when they occur if possible. When a fire occurs all work must be discontinued and the supervisor and the safety representative must be notified immediately.
- When a fire or fire potential is not controllable call 911.
- Remain at the assigned location at all times except when evacuating in case of an emergency in which the fire watch is not capable of handling.
- Perform no other work that will interfere with fire watch duties.
- Remain at the work site for at least 30 minutes after welding, cutting, or other such Hot Work operations have ceased to ensure smoldering and other potential fire conditions do not exist.

5.9 Ventilation

Adequate ventilation (natural or mechanical) shall be provided for all welding, cutting, brazing, and related operations to ensure permissible exposure levels are not exceeded.

Before welding, cutting, burning, or grinding is commenced on any surface covered by a preservative coating whose composition is not known a test shall be made by a Competent Person for hazard determination. Work processes shall be modified based on the test results.

When welding, cutting or burning galvanized or cadmium plated metal local exhaust ventilation and a respirator is required and shall be used.

5.10 Protection of Employees

All outer clothing shall be free from oil or grease.

All outer clothing shall have the appropriate Fire Rating (FR)

Synthetic or plastic clothing shall not be worn.

Welding helmets and face shields shall be used to protect the face, forehead, neck and ears from direct radiant energy from the arc and from weld spatter.

Sleeves and collars shall be kept buttoned. Pockets shall be emptied of flammable or readily combustible material. Pants shall not have cuffs and shall not be turned up on the outside. Pants shall overlap shoe tops to prevent slag from getting into shoes.

If respiratory protection is required, respirators shall be used in accordance with Respiratory Protection section of this manual.

Fire resistant screens or curtains shall be used around the welding area to protect-passers-by from flying sparks and direct view of the arc.

When welding or cutting shielded electrodes using alternating current (AC) single-phase transformer-rectifier arc welding machines and under electrically hazardous conditions, the welder shall use dry gloves and clothing, non-conductive footwear, and avoid accidental contact with live electrical parts.

Filter Lens Shades shall be selected in accordance with 29 CFR 1910.252.

Only manual electrode holders which are specifically designed for arc welding and cutting and are of a capacity capable of safely handling the maximum rated current required by the electrodes shall be used.

Any current-carrying parts passing through the portion of the holder which the arc welder or cutter grips in his hand shall be fully insulated against the maximum voltage encountered to ground.

All arc welding and cutting cables shall be of the completely insulated flexibly type capable of handling the maximum current requirements of the work in progress, taking into account the duty cycle under which the arc welder or cutter is working.

Only cable free from repair or splices for a minimum distance of 10 feet from the cable end to which the electrode holder is connected shall be used.

When it becomes necessary to connect or splice lengths of cable one to another substantial insulated connectors of a capacity at least equivalent to that of the cable shall be used. If connections are effected by means of cable lugs, they shall be securely fastened together to give good electrical contact and the exposed metal parts of the lugs shall be completely insulated.

Cables in need of repair shall not be used. When a cable other than the cable lead referred to in above becomes worn to the extent of exposing bare conductors, the portion thus exposed shall be protected by means of rubber and friction tape or other equivalent insulation.

6. References

CFR 29 1910 Subpart Q
CFR 29 1926 Subpart J

Electrical - General - 28

1. Policy

Work activities involving electrical hazards shall be conducted safely.

2. Purpose

To establish the procedures that shall be followed in the safe performance of work activities involving general electrical hazards. **Note: The National Electric Code, NFPA 70E, and 29 CFR 1926 subpart K shall be the governing source for installation, maintenance, repair, replacement or removal of new or used wiring, electrical fixtures of any kind, or any other associated electrical work.**

3. Scope

Applies to all ROCIP projects.

4. Definitions

Approved means acceptable to the authorities.

Authorized Person means an employee approved or assigned by contract to perform a specific duty or duties or to be at a specific location or locations on the project.

Cabinet means an enclosure designed either for surface or flush mounting.

Competent Person means one who is capable of identifying existing and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has the authorization to take prompt corrective measures to eliminate them.

NEC National Electric Code.

NFPA National Fire Protection Association

Qualified means persons who are capable of working safely on equipment and are familiar with electrical properties, the proper use of special precautionary techniques, personal protective equipment, insulating and shielding materials, and insulated tools.

5. Requirements

5.1 General

Contractors shall ensure all feasible engineering and administrative controls shall be applied to mitigate or minimize the risk of injury and illness from exposure to electrical hazards. Where such hazards still exist after application of these controls employees are required to develop applicable safe work procedures, determine PPE, and equipment as a supplement to this manual section. Under no circumstance shall any contractor perform live electrical work when the work can be de-energerized.

In work areas where the exact location of underground electric power lines is unknown employees using jackhammers, bars, or other hand tools that may contact a line shall be provided with insulated protective gloves. Gloves must be rated to (or exceed) the voltage for which they may be exposed. The gloves shall be inspected before use and tested as required.

5.2 Energized Electrical Parts and Systems

Safety-related work practices shall be employed to prevent electric shock or other injuries resulting from either direct or indirect electrical contacts when work is performed near or on equipment or circuits which are or may be energized. The specific safety-related work practices shall be consistent with the nature and extent of the associated electrical hazards.

Live parts to which an employee may be exposed shall be de-energized before the employee works on or near them unless it can be demonstrated that de-energizing introduces additional or increased hazards or is infeasible due to equipment design or operational limitations. Live parts that operate at less than 50 volts to ground need not be de-energized if there will be no increased exposure to electrical burns or to explosion due to electric arcs. ***Only qualified journeyman electricians shall work on energized parts.***

If the exposed live parts are not de-energized (i.e., for reasons of increased or additional hazards or infeasibility), a JSA shall be completed and signed by the affected employees and the Competent Person and additional safety practices shall be used to protect employees who may be exposed to the electrical hazards involved. Such work practices shall protect employees against contact with energized circuit parts directly with any part of their body or indirectly through some other conductive object. The work practices that are used shall be suitable for the conditions under which the work is to be performed and for the voltage level of the exposed electric conductors or circuit parts.

5.2.1 Overhead electrical lines

Vehicular and Mechanical Equipment

Vehicles or mechanical equipment capable of having parts of its structure elevated near energized overhead lines shall be operated so that a clearance of 10 ft. is maintained. If the voltage is higher than 50kV, the clearance shall be increased 4 inches for every 10kV over that voltage. However, under any of the following conditions, the clearance may be reduced:

- If the vehicle is in transit with its structure lowered, the clearance may be reduced to 4 ft. If the voltage is no higher than 50kV, the clearance shall be increased 4 in. for every 10kV over that voltage.

- If insulating barriers rated for the voltage of the line being guarded are installed to prevent contact with the lines, the clearance may be reduced to a distance within the designed working dimensions of the insulating barrier.
- The equipment shall be insulated for the voltage involved. The equipment shall be positioned so that its uninsulated portions cannot approach the lines or equipment any closer than the minimum approach distances specified in Table R-6 of 1910.269 (I) (10).

Employees standing on the ground may not contact the vehicle or mechanical equipment or any of its attachments, unless:

- The employee is using protective equipment rated for the voltage.
- The equipment is located so that no UN-insulated part of its structure can come closer to the line than 10 ft. If the voltage is higher than 50kV, the clearance shall be increased 4 in. for every 10kV over that voltage.

For any vehicle or mechanical equipment capable of having parts of its structure elevated near energized overhead lines that is intentionally grounded, the ground location must be barricaded to prevent employees from making contact.

5.2.2 Illumination

Employees shall not enter spaces containing exposed energized parts unless illumination is provided that enables the employees to perform the work safely. Where lack of illumination or an obstruction precludes observation of the work to be performed employees shall not perform

tasks near exposed energized parts. Employees shall not reach blindly into areas which may contain energized parts.

5.2.3 Confined Space or enclosed space work

When an employee works in a confined or enclosed space (such as a manhole or vault) that contains exposed energized parts protective shields, protective barriers, or insulating materials shall be used as necessary to avoid inadvertent contact with these parts. Doors, hinged panels, and the like shall be secured to prevent swinging into an employee and causing the employee to contact exposed energized parts.

5.2.4 Conductive materials and equipment

Conductive materials and equipment that are in contact with any part of an employee's body shall be handled in a manner that will prevent them from contacting exposed energized conductors or circuit parts. If an employee must handle long dimensional conductive objects (such as ducts and pipes) in areas with exposed live parts a JSA (reference JSAs in the Safety Systems section of this manual) shall be performed in advance.

5.2.5 Portable ladders

Portable ladders shall have nonconductive side rails if they are used where the employee or the ladder could contact exposed energized parts (reference Ladder section of this manual).

5.2.6 Conductive apparel

Conductive articles of jewelry and clothing (such as watch bands, bracelets, rings, key chains, necklaces, metalized aprons, cloth with conductive thread, or metal headgear) shall not be worn if they might contact exposed energized parts. However, such articles may be worn if they are rendered nonconductive by covering, wrapping, or other insulating means.

5.3 GFCI's and Assured Grounding Procedures - Ground Fault Circuit Interrupters

Ground fault circuit interrupters shall be used on all 120V outlets on construction sites and portable generators. In addition all 220 volt outlets shall be protected with a GFCI if an employee is operating equipment or utilizing a tool (such as pumps, buffers, compressors, etc) that requires such voltage.

Portable electric equipment and extension cords used in highly conductive work locations such as those inundated with water or other conductive liquids, or in job locations where employees are likely to contact water or conductive liquids, shall be approved for those locations and shall be GFCI protected.

When connecting attachment plugs the following applies:

- Employees' hands may not be wet when plugging and unplugging flexible cords equipment, if energized equipment is involved.
- Energized plug and receptacle connections may be handled only with insulating protective equipment if the connection could provide a conducting path to the employee's hand.
- Locking-type connectors shall be properly secured after connection.

5.3.1 Assured Grounding Program

GFCI's shall be used in conjunction with portable electrical hand tools. When this is not possible (feasible) the Assured Grounding procedures in this section shall apply and the contractor shall include in addition to this policy section an Assured Grounding Program. The elements of this program shall include as a minimum:

- Written description of program.
- Program coordinator.
- Inspections.
- Documented Testing.
- Availability of Equipment.
- Integrity of testing equipment (repairs/testing of test equipment).
- Handling of defective tools and equipment.
- Who will perform tests, and repairs.
- Recordkeeping.

5.3.2 Equipment and tools

All tools shall be double insulated and inspected prior to use.

Portable equipment shall be handled in a manner which will not cause damage. Flexible electric cords connected to equipment may not be used for raising or lowering the equipment. Flexible cords may not be fastened with staples or otherwise hung in such a fashion as could damage the outer jacket or insulation.

Portable cord equipment and extension cords shall be visually inspected before use for external defects such as loose parts, missing pins, or damage to outer jacket or insulation and for evidence of possible internal damage such as pinched or crushed outer jacket.

If there is a defect or evidence of damage that might expose an employee to injury the defective item shall be removed from service, tagged to identify the hazard, and remain out of service until repairs and tests necessary to render the equipment safe have been made.

When an attachment plug is to be connected to a receptacle including any on a cord set, the plug and receptacle contacts shall first be checked to ensure that they are of proper mating configurations and the ground prong is in place.

Only flexible cord of 12 gauge or greater with three wire grounding-type shall be used. All cord sets shall be inspected prior to each shifts use. Damaged cords shall be removed immediately. Attachment plugs and receptacles may not be connected or altered in a manner which would prevent proper continuity of the equipment-grounding conductor at the point where plugs are attached to receptacles. Additionally, these devices may not be altered to allow the grounding pole of a plug to be inserted into slots intended for connection to the current-carrying conductors.

5.4 Work Space Clearances - 600 Volts, nominal, or less

5.4.1 Working clearances

Working clearances shall be in accordance with 29 CFR 1926 subpart K and the NEC.

5.4.2 Guarding of live parts

Live parts of electric equipment operating at 50 volts or more shall be guarded against accidental contact by approved cabinets or other forms of approved enclosures or by any of the following means:

- By location in a room, vault, or similar enclosure that is accessible only to qualified persons.
- By suitable permanent substantial partitions or screens so arranged that only qualified persons will have access to the space within reach of the live parts. Any openings in such partitions or screens shall be so sized and located that persons are not likely to come into accidental contact with the live parts or to bring conducting objects into contact with them.
- By location on a suitable balcony, gallery, or platform so elevated and arranged as to exclude unqualified persons.
- Entrances to rooms and other guarded locations containing exposed live parts shall be marked with conspicuous warning signs forbidding unqualified persons to enter.

5.5 Work Space Clearances - over 600 volts, nominal

Working clearances shall be in accordance with 29 CFR 1926 subpart K and the NEC.

5.5.1 Elevation of unguarded live parts

There shall be no unguarded live parts above working spaces on any project except for overhead distribution lines.

6. References

OSHA 29 CFR 1910 Subpart R
OSHA 29 CFR 1910 Subpart S
OSHA 29 CFR 1926 Subpart K
OSHA 29 CFR 1926 Subpart V
National Electric Code
American National Standards Institute, Z89.2-1971
NFPA 70E

Underground Construction, Caissons, and Cofferdams - 29

1. Policy

Work activities involving underground tunnels, shafts, chambers, passageways caissons, and cofferdams shall be conducted in accordance with 29 CFR Subpart S, applicable federal standards, and this policy.

2. Purpose

To establish procedures for the safe performance of work activities involving underground tunnels, shafts, chambers, and passageways.

3. Scope

This section applies to all ROCIP projects.

4. Requirements - General

All contractors and their employees shall conduct all work in underground tunnels, shafts, chambers, and passageways in accordance with 29 CFR 1926 Subpart S.

Hoisting unique to underground construction. Employers must comply with 1926.1501(g) of 1926 subpart DD.

The following requirements are additional requirements to Subpart S and are intended to create a safer working environment.

All inspection shall be made by a competent person who is competent in the subject matter; for instance a separate competent person may be required for the tunnel, equipment, fire protection, air quality, etc. Each employee designated as a competent person shall demonstrate proficiency in the subject matter.

All employees shall be medically fit and trained in the use of SCBA for self rescue.

All tunnels shall be considered permit required confined spaces and all employees shall be trained and deemed proficient in permit required confined space procedures. The confined space section of this manual will apply.

All tunneling operation shall have an authorized attendant at the tunneling opening area while any employees are in a tunnel.

All tunneling operation will have continuous mechanical ventilation while work is being conducted.

Smoking is prohibited in all tunnels.

Before conducting any hot work a JSA or equivalent shall be preformed and a hot work permit shall be issued. No oxygen or acetylene tank shall be underground except when in use. Tanks shall be removed immediately after use regardless of the intervals of which they may be used.

All electrical equipment shall be designed for underground use and for the environment for which they will be used.

Sufficient fire extinguishing equipment shall be maintained underground at all times.
All hoisting shall be conducted in accordance with this subpart, other applicable subparts, and this manual.

Testing of atmosphere:

All testing will be in accordance with this part and the appropriate sections of this manual. If oxygen readings inside the tunnel are not equal to the ambient air outside of the tunnel the competent person shall determine what has displaced the oxygen and determine if it is safe to continue operations.

5. Training

All training will be conducted in accordance with Federal and State laws, and best industry practices. Training will include, but not limited to 29 CFR 1926 subpart S.

Training shall be provided to each affected employee before the employee is first assigned duties affected by this section and shall include:

- The proper procedures for testing and monitoring air quality.
- Maintaining proper ventilation.
- Emergency procedures.
- 29 CFR 1910.134.
- 29 CFR 1910.146 and this manual.
- Fire prevention and protection.
- Caissons and cofferdams.
- Whenever there is a change in operations that presents a hazard about which an employee has not previously been trained.
- Whenever the supervisor or safety representative has reason to believe that there are deviations from the procedures required by this instruction or inadequacies in the employee's knowledge or use of these procedures.

The training shall establish employee proficiency in the duties required by this section and shall introduce new or revised procedures, as necessary, for compliance with this section.

The employer shall certify that the training required by this section has been accomplished. The documentation shall be available for inspection by the City and their authorized representatives.

6. Working Over Water

All employees working over water shall be protected from falling by guard rails, safety nets, or personal fall arrest systems.

Employees working over or near water or on barges shall be provided with and wear a U.S. Coast Guard-approved life jacket or buoyant work vests.

Prior to and after each use the buoyant work vests or life preservers shall be inspected for defects which would alter their strength or buoyancy. Defective units shall not be used.

Ring buoys with at least 90 feet of line shall be provided and readily available for emergency rescue operations. Distance between ring buoys shall not exceed 200 feet.

At least one lifesaving skiff shall be immediately available at locations where employees are working over or adjacent to water.

7. References

29 CFR 1926 subpart S

Demolition - 30

1. Policy

Work activities involving demolition shall be conducted in accordance with 29 CFR 1926 Subpart T, applicable federal standards, and this policy.

2. Purpose

To establish procedures for the safe performance of work activities involving demolition.

3. Scope

This section applies to all ROCIP projects.

4. Requirements - General

Prior to permitting employees to start demolition operations an engineering survey shall be made by a competent person of the structure to determine the condition of the framing, floors, and walls, and possibility of unplanned collapse of any portion of the structure. Any adjacent structures where employees may be exposed shall also be similarly checked. The employer shall have in writing evidence that such a survey has been performed.

When employees are required to work within a structure to be demolished which has been damaged by any means the walls, floor, and roof shall be shored or braced.

All utility service lines shall be shut off, capped, or otherwise controlled outside of all building before demolition work is started. All utility companies which are involved shall be notified well in advance of commencement of demolition work.

If it is necessary to maintain any onsite utilities such lines shall be temporarily relocated and protected.

The engineering survey shall also determined if any type of hazardous chemicals, gases, explosives, flammable materials, or similarly dangerous substances have been used in any pipes, tanks, or other equipment on the property. When the presence of any such substances is apparent or suspected testing and purging shall be performed and the hazard eliminated before demolition begins.

Employees shall be protected from hazard associated with fragmentation of glass.

Training

All training will be conducted in accordance with Federal and State laws, and best industry practices. Training will include, but not limited to 29 CFR 1926 subpart T.

Training shall be provided to each affected employee:

- Before the employee is first assigned duties in demolition operations.
- Whenever there is a change in operations that presents a hazard about which an employee has not previously been trained.
- Whenever the supervisor or safety representative has reason to believe that there are deviations from the procedures required by this instruction or inadequacies in the employee's knowledge or use of these procedures.

The training shall establish employee proficiency in the duties required by this section and shall introduce new or revised procedures, as necessary, for compliance with this section.

The employer shall certify that the training required by this section has been accomplished. The documentation shall be available for inspection by the City and their authorized representatives.

Fall Protection

When employees are exposed to falls of six feet or more; or a ***fall of any distance onto exposed rebar, debris, or other impalement hazard*** the employee shall be protected in accordance with the fall protection section of this manual. ***No employee shall be allowed to walk among exposed rebar or impalement hazards.*** Such hazards shall be eliminated prior to any employee entering that area.

Falling Object Protection

Employee entrances to multistory structures being demolished shall be completely protected by sidewalk sheds or canopies, or both, providing protection from the face of the building for a minimum of 8 feet. All such canopies shall be at least 2 feet wider than the building entrances or openings (1 foot wider on each side thereof) and shall be capable of sustaining a load of 200 pounds per square foot.

Material disposal and Chutes

When debris is dropped through holes in the floor without the use of chutes the area onto which the material is dropped shall be completely enclosed with barricades not less than 42 inches high and not less than 6 feet back from the projected edge of the opening above. Warning signs shall be posted at each level. Removal shall not be permitted in this lower area until debris handling ceases above. Employee shall not be allowed closer than six feet from the floor opening without fall protection. Any openings cut in a floor for the disposal of materials shall be no larger in size than 25 percent of the aggregate of the total floor area unless the lateral supports of the removed flooring remain in place. Floors weakened or otherwise made unsafe by demolition operations shall be shored to carry safely the intended imposed load from demolition.

All floor openings not used as material drops shall be covered over with material substantial enough to support the weight of any load which may be imposed. Such material shall be properly secured to prevent its accidental movement.

Except for the cutting of holes in floors for to drop materials preparation of storage space and similar necessary preparatory work the demolition of exterior walls and floor construction shall begin at the top of the structure and proceed downward. Each story of exterior wall and floor construction shall be removed and dropped into the storage space before commencing the removal of exterior walls and floors in the story next below.

No material shall be dropped to any point lying outside the exterior walls of the structure unless the area is effectively protected and barricaded.

All materials chutes shall be installed and maintained in accordance with 29 CFR 1926 Subpart T. Chutes shall be designed and constructed of such strength as to eliminate failure due to impact of materials or debris loaded therein.

Stairways and Access

Only those stairways, passageways, and ladders, designated as means of access to the structure of a building shall be used. Other access ways shall be entirely closed and blocked at all times to prohibit inadvertent entry.

All stairs, passageways, ladders, and equipment shall be inspected daily and maintained in a clean safe condition.

In a multistory building all stairwell and working areas shall be properly illuminated by either natural or artificial means in accordance with this manual.

Walkways or ladders shall be provided to enable employees to safely reach or leave any scaffold or wall.

Walls

Cranes, derricks, and other hoisting equipment used shall meet the requirements specified in § 1926.1501 of § 1926 subpart DD.

Masonry walls shall not be permitted to fall upon the floors of the building in such a manner as to exceed the safe carrying capacities of the floors.

No wall section which is more than one story in height shall be permitted to stand alone without lateral bracing from both sides. All walls shall be left in a stable condition at the end of each shift.

Structural or load-supporting members on any floor shall not be cut or removed until all stories above such a floor have been demolished and removed.

In buildings of "skeleton-steel" construction the steel framing may be left in place during the demolition of masonry. Where this is done all steel beams, girders, and similar

structural supports shall be cleared of all loose material as the masonry demolition progresses downward.

Walls which serve as retaining walls to support earth or adjoining structures shall not be demolished until such earth has been properly braced or adjoining structures have been properly underpinned.

Walls which are to serve as retaining walls against which debris will be piled shall be safely supporting.

Mechanical equipment shall not be used on floors or working surfaces unless such floors or surfaces are of sufficient strength to support the imposed load.

Mechanical equipment used shall meet the requirements specified in federal standard and this manual. All equipment will have working back-up alarms and horns. Operator shall wear seatbelts at all times. All mobile equipment shall have sufficient protection in an around the cab to protect employees from falling or flying objects.

Storage space into which material is dumped shall be blocked off, except for openings necessary for the removal of material. Such openings shall be kept closed at all times when material is not being removed.

Cranes, derricks, and other hoisting equipment used shall meet the requirements specified in this manual.

No workers shall be permitted in any area, which can be adversely affected by demolition operations when work is being performed. Only those workers necessary for the performance of the operations shall be permitted in this area at any other time.

During demolition continuous inspections by a competent person shall be made as the work progresses to detect. No employee shall be permitted to work where such hazards exist until they are corrected by effective means.

5. Reference

29 CFR 1926 subpart T

Diving Operations - 31

1. Policy

Work activities involving diving shall be conducted in accordance with 29 CFR 1910 subpart T, applicable federal standards, and the Association of Diving Contractors International (ADC) safety practices.

2. Purpose

To establish procedures for the safe performance of work activities involving diving.

3. Scope

This section applies to all diving operations.

4. Requirements – General

All diving operations will be conducted in accordance with the federal standards and the safe diving program developed by the ADC.

Training

All training will be conducted in accordance with Federal and State laws, and best industry practices. Training will include, but not limited to 29 CFR 1910 subpart T.

Training shall be provided to each affected employee:

- Before the employee is first assigned duties in diving operations.
- Whenever there is a change in operations that presents a hazard about which an employee has not previously been trained.
- Whenever the supervisor or safety representative has reason to believe that there are deviations from the procedures required by this instruction or inadequacies in the employee's knowledge or use of these procedures.

The training shall establish employee proficiency in the duties required by this section and shall introduce new or revised procedures, as necessary, for compliance with this section.

The employer shall certify that the training required by this section has been accomplished. The documentation shall be available for inspection by the City and their authorized representatives.

5. References

29 CFR 1910 subpart T and the Association of Diving Contractors International (ADC) safety practices.

APPENDIX - FORMS

ROCIP Safety Information Form

This form and the required submittals shall be provided within 5 business days of council award. Contact Anthony Pleasant with City of Austin at 512.974.3456 to arrange for delivery of this form and required safety submittals to the City.

Company Name: _____Date: _____

Address: _____ Phone Number: _____

1. List your company's Experience Modification Rate for the last three years:

   Year 1_____ Year 2_____ Year 3_____

2. List the following OSHA Log Information for the past three years:

	Year 1	Year 2	Year 3
A. Total Recordable Cases	_____	_____	_____
B. Lost Workday Cases	_____	_____	_____
C. Lost Workdays	_____	_____	_____
D. Total Employee Hours Worked	_____	_____	_____
E. Number of Fatalities	_____	_____	_____

3. Do you have a designated Safety Representative? ❒ Yes, denote below

   Safety Representative Name: _____Phone Number: _____

   ❒ If No, advise who is in charge of safety and to what extent:

   _____

4. Do you hold "Tool Box Talks" for employees? ❒ Yes ❒ No

   How often?_____

   Provide documentation of Tool Box meetings - ex: sign-in sheets, etc.

5. Do you have a training program for newly hired or promoted foremen?

   ❒ No ❒ Yes, what does this include? _____

Safety Submittals:

- ❑ **Copy of your written safety program**
- ❑ **Provide evidence of training for the past 12 months. Examples, certificates or sign in sheets. If an outside firm is used for training, provide the contact name and phone number.**
- ❑ **Qualifications of your designated Safety Representative (Resume, Certifications, etc.)**

Please call Anthony Pleasant at 512-974-3456 with the City of Austin prior to the pre-construction meeting to schedule a time to allow us to conduct a safety assessment interview with your management team and designated safety representative.

I hereby certify that the above information is true and correct to the best of my knowledge.

Print name: _____Title: _____

Signature_____ Date: _____

CITY OF AUSTIN

ROLLING OWNER CONTROLLED INSURANCE PROGRAM **Form 5al**

CONSTRUCTION SAFETY MANAGEMENT
MONTHLY SAFETY INFORMATION REPORTING FORM

This report must be faxed to Safety Solutions, Inc. the ROCIP Program Safety Manager no later than the 10th of each month
Subcontractors: Fax this report to the General Contractor only

General Contractor *fax to 512.288.7168 or e-mail to safetysolutions@austin.rr.com*

If you have any questions on how to complete this report
please contact Jaime Orina at 512.423.0028 or 512.288.7157

To: Jaime Orina **Fax #: 512.288.7168**

From: _____ (Safety Representative)

General Contractor: _____

Project: _____

Report Month: _____

# of Manhours:		*(This month only)*
# of Lost Workday Cases:		*(This month only)*
# of Workdays Lost:		*(This month only)*
# of Recordable Incidents including lost workday cases:		*(This month only)*

I certify that the numbers included in this report are accurate and include the General Contractor and all subcontractors' information for the report month indicated.

Signature _____ Date Signed _____ Phone Number _____