

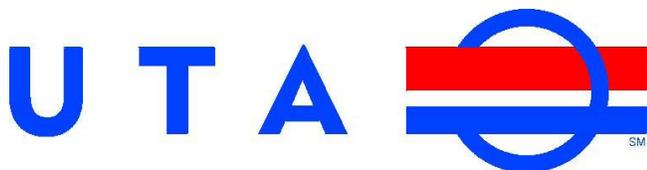
UTAH TRANSIT AUTHORITY



Construction Safety and Security Program Manual

10 June 2016

Revision 11.0



Revision Table

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9.0	5 October 2012	Updated policies layout, and font.	Max Hanna
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1.0 Introduction and Definitions

1.1 Introduction

Contractors and subcontractors are charged with the responsibility of adoption and use of this *UTA Construction Safety and Security Program Manual (CSSP)* and other safety programs administered by UTA. This will allow for a coordinated safety and security effort consistent with the CSSP on all project sites. Employee participation, proper supervision, and training at all tiers with the CSSP is required.

This manual provides general information and guidance to UTA project managers, engineers, and contractors on the requirements and procedures for accident prevention and safety for Utah Transit Authority projects. The UTA safety goal is to achieve an accident-free construction project.

This *CSSP* reflects minimal standards and best practices. All general contractors, contractors, and their sub-tiers will be expected to meet or exceed the standards and good safe practices outlined in this manual and their own safety program, whichever is more stringent. Variance from the accepted standards are acceptable when well developed, communicated, and documented.

Contractors must adopt this safety plan or exceed it with one of their own creation. A Health and Safety Plan (HASP) is required if there is a risk of chemical contamination on the site.

Additionally, UTA invites all who use this program to provide revision comments. Email your comments to the UTA Construction Safety Administrator for inclusion in the next version of this program manual.

1.2 Definitions

access control	Any combination of features designed to dissuade, prohibit, or prosecute illegal entry. May include CCTV, alarm systems, security guards, and/or key card entry
accident	An unexpected event that interrupts or interferes with the orderly progress of the construction activity or process, and could result in bodily injury or property damage.
bid	The offer of the bidder for the work when made out and submitted on the prescribed bid forms, properly signed, and guaranteed.
claim	A demand for compensation, including a benefit request for injuries or damages caused by a loss.
combustible	Globally Harmonized System of Classification and Labelling of Chemicals defines the flash point temperature of combustible liquids between 140 °F (60 °C) and 200 °F (93 °C)
construction manager	A resident engineer's general superintendent for a given project that has overall responsibility to see that the work or job is performed to specification.

construction safety program	The safety and loss control program established to minimize hazards and risks associated with construction projects.
CSSC	Construction Safety and Security Committee. See section 3.8 of this program manual.
construction work	Building a new item, facility, or component. Also the installation or replacement of parts or components of a system in which most of the parts are replaced. The question of construction or maintenance has no clear answer and must take into account all of the conditions at the site. However, OSHA has stated that if a determination cannot be made, then the more protective standard applies. ¹
consultant	The firm or firms under contract to UTA which are performing services, including but not limited to design, engineering, project control, construction management, surveying, environmental assessment and geotechnical investigations, in support of the overall project of which this contract is a part.
contract	The written agreement covering the performance of the work and the furnishing of labor, materials, tools, and equipment in the construction of the work. The contract shall include the invitation for bids, bid, general provision, plans and specifications, and contract bond; also any and all supplemental agreements amending or extending the work contemplated and which may be required to complete the work in a substantial and acceptable manner.
contractor	The person, persons, partnership, joint venture, company, or corporation entering into this contract for the performance of the work required by the contract. A contractor will normally report to a general contractor unless there is a reason for direct contact with a project manager or UTA's resident engineer.
contractor's safety supervisor	A contractor's employee hired or assigned to perform safety responsibilities and may perform other project tasks secondary to safety responsibilities.
contractor's superintendent	The individual for a given project who has the overall responsibility to see that the work or job is completed satisfactorily.
engineer	A registered professional, with a designation or academic degree in a specific technical discipline.
flammable	Globally Harmonized System of Classification and Labelling of Chemicals which defines the flash point temperature of flammable liquids to be between 0 and 140 °F (60 °C). Antonyms of flammable/inflammable are non-flammable, non-inflammable,

¹ UTA Internal Memorandum dated 13 January 2016. Subject: Construction vs. Maintenance under OSHA Regulations as Applied to Work Done by Facilities Personnel

	incombustible, non-combustible, ininflammable, not flammable or fireproof.
general contractor	A corporation, company, partnership, joint venture, person, or persons entering into contract for performance of work required by the contract.
general duty clause (GDC)	Is defined by section 5(a)(1) of the Occupational Safety and Health Act (OSHA). GDC would apply to any condition considered unsafe by competent persons for regulatory rules that have not been established, published, and distributed. Any such condition shall be brought to the attention of appropriate management and representative of UTA to determine corrective action. See Construction Work definition.
government requirements	Federal, state, and local statutes, ordinances, codes, regulations, orders, rules, directives, requirements, policies, procedures, and guidelines applicable to the project or the work to be performed under the contract.
inflammable	Synonym of flammable
lighting/illumination	Lighting at work sites, offices, and storage areas may be used to reduce vulnerability.
maintenance	Making or keeping a structure, fixture, or foundation in proper condition in a routine, scheduled, or anticipated fashion. The question of construction or maintenance has no clear answer and must take into account all of the conditions at the site. However, OSHA has stated that if a determination cannot be made, then the more protective standard applies.
manual	<i>UTA Construction Safety and Security Program Manual or CSSP.</i>
near miss	Any unplanned event having the potential for serious consequences, but resulting in no property damage or personal injury. Short for near mishap.
OSHA	Either the Occupational Safety and Health Act or the Occupational Safety and Health Administration. The Act established the Administration.
physical barriers	Perimeter fencing with lockable gates will be used for storage areas and may be used for vulnerable work areas or office locations. Other physical barriers may be used to prevent vehicle access to the site.
plans	The drawings, standard drawings, profiles, typical cross-sections, general cross-sections, elevations, diagrams, schedules, and details which show the locations, character, dimensions, and details of the work.

project engineer	The contractor's executive representative designated in accordance with project specifications.
project resident engineer	UTA's authorized representative charged with the professional administration of a particular contract.
safety stand down	Typically a full or half day taken to review specific safety practices. No work is performed during the stand down, but all personnel, including subs, are required to attend training. Used after an accident or near miss to prevent recurrences.
security	Those contracted or hired agents under the authority of UTA, serving in the interest of public safety and property control.
security guard service	On-site security guard service may include both patrolling guards to randomly cover all work, office, and storage areas and stationary guards (fixed post) to control key access points or observe significant vulnerabilities.
signage	Warning signs may be used both for security and safety reasons.
subcontractor	Any individual, partnership, or corporation undertaking construction or other services under contract with a contractor or general contractor.
sub-subcontractor	Any individual, partnership or corporation which performs sublet work with the consent of a subcontractor or its designee, excluding vendors, suppliers, material dealers, or others whose function is solely to supply materials, parts or equipment to and from the job site.
TASP	Transit Agency Safety Plan. An FTA mandated, overarching, all consuming, all knowing, safety plan for everything a transit agency does. This document replaces the Safety and Emergency Preparedness Plan.
UOSH	The Utah Occupational Safety and Health rules and regulations promulgated there under relating to the occupational safety and health requirements for the job site, including construction work.
UTA	Utah Transit Authority
UTA Construction Safety Administrator	A UTA employee who administers the Construction Safety Program
work	The furnishing of all supervision, labor, material, equipment, services, and incidentals necessary to complete any duties and obligations imposed on the contractor by the contract.
work site	The area enclosed by the limit of work indicated on the plans and the boundaries of local streets and public easements in which the

contractor is to perform work under the contract. This is interchangeable with "job site".

2.0 Purpose, Scope, and Objectives

2.1 Purpose

The purpose of this policy is to establish the minimum safety and security guidelines for contractors of and visitors to UTA construction projects. And to promote consistency of purpose, compliance, and conduct on all UTA construction projects, regardless of size or cost.

Utah Occupational Safety and Health (UOSH) requires that UTA inform all contractors regarding the safety rules of UTA. UOSH also requires that contract employees are trained in the work practices necessary to safely perform their jobs.

Safety and security must be an integral part of each job. Full participation, cooperation, and support are necessary and required to ensure the safety and health of all persons and property involved in the project. Each Contractor is responsible to provide safe working conditions for their employees and Subcontractors, and to protect the public and all others who may come in contact with, or be exposed to, the project.

Contractors must adopt this plan or exceed it with one of their own creation. In the event that a contractor decides to adopt this safety plan, the adoption of this CSSP as the contractor's safety plan will be formalized in writing and signed by the Contractor. A Health and Safety Plan (HASP) is required if there is a risk of chemical contamination on the site.

Good partnering with other contractors on project sites is required to minimize the potential for exposure from external sources. Contractors are required to:

- a. Plan and execute all work in order to prevent personal injury, property damage, and loss work time.
- b. Comply with federal, state, and local laws, ordinances, codes, regulations, and industry standards, along with UTA's protocols and procedures.

2.1.1 Program Elements

An effective safety and security program contains the following elements:

- a. Management leadership and employee involvement
 1. Top management personal involvement
 2. System to address safety, security, and health concerns
- b. Worksite analysis
 1. Hazard analysis (SOP; JSA)
 2. Self inspection
 3. Security issues
- c. Hazard prevention
 1. Hazard tracking
 2. Medical services
 3. Disciplinary program for all levels
- d. Safety and health training

1. New employee
 2. Managers and supervisors
 3. Visitors
- e. Lessons Learned
1. Collection of lessons learned
 2. Analysis of incidents
 3. Plan of improvement to prevent the same incident

2.1.2 Contractor's Construction Safety and Security Program

The contractor's safety and security program shall include, but is not limited to, the guidelines outlined in section 4 of this manual. The contractor is responsible to review the specific requirements of the contract, analyze the planned methods of operation, and incorporate any additional specific or unique safety requirements in the writing. The contractor is responsible to ensure that all applicable safety regulations are addressed as part of their safety program.

The contractor's program will acknowledge that the contractor is totally responsible for compliance with UOSH regulations and relevant state/local codes and requirements, which requires a place of employment that is free of unsanitary or hazardous conditions that would expose an employee's to unhealthy or unsafe environment.

The contractor's procedures for completing and forwarding to the resident engineer all on-site accident and incident reports is also to be included in the program.

2.2 Scope

This policy applies to all UTA employees, contractors, sub-contractors, and visitors to UTA construction projects. This also applies to companies providing goods and materials to the project.

It is not possible to include all specific instructions for every job condition, state, or federal regulation or other recognized procedures in this manual. This manual has been developed to provide guidelines for safe work practice. Each contractor is required under the contract, and in effect by law, to adhere to the *CSSP*.

Contractors and their subcontractors on the site bear the primary responsibility for safety and no liability is implied by the development of the *CSSP*.

The existence of this *CSSP* does not relieve the contractor of its safety responsibilities under applicable government requirements nor does it change the terms and conditions of the contract or any of the policies of insurance to be issued. Safety must be a primary consideration in all construction related activities to be undertaken on any project.

UTA reserves the right to add, delete, or modify sections of this *CSSP* from time to time as it deems necessary.

2.3 Program Objectives

The *CSSP* has been established to promote safety and to minimize and control hazards and risks associated with the on-site construction activities of the project. It is intended that the program manual will complement each contractor's safety program and will be coordinated toward a total safety effort. The overall *CSSP* goals are as follows:

- a. Eliminate personal injuries and property damage.

- b. Achieve greater administrative efficiency.
- c. Develop a healthful and safe place to work.

The effectiveness of the *CSSP* depends on the active participation and cooperation of all levels of contractor's management, including supervisors and employees of each sub-contractor, and the coordination of their efforts with the project resident engineer, in carrying out the following basic procedures:

- a. Adopt this manual and use it in conjunction with the contractors' own safety program, in preparation of the work or services to be performed on UTA sites.
- b. Plan all work to minimize the potential for personal injury, property damage, and loss of productive time.
- c. Maintain a system of prompt detection and correction of unsafe practices and conditions.
- d. Establish and conduct training programs to stimulate and maintain interest and cooperation of all employees.
- e. Prompt notification and investigation of all accidents or claims to determine the causes and to take corrective action.
- f. Interface with the project resident engineer's emergency preparedness procedures and train all employees in protocol for communication in the event of an incident/injury.

NOTE: The existence of this *CSSP* does not relieve the contractor of its safety responsibilities under applicable government requirements or regulations, nor does it change the terms and conditions of the contract or any of the policies of insurance to be issued. Safety must be a primary consideration in all construction-related activities to be undertaken on any project.

UTA reserves the right to add, delete, or modify sections of this manual as necessary.

2.4 Right to Search

UTA reserves the right to search vehicles, toolboxes, lunch boxes and any other means of pilfering UTA owned materials from UTA properties.

3.0 Construction Safety and Security Responsibilities

3.1 General Contractor

The general contractor is responsible for accident prevention and jobsite safety on the overall project. This responsibility cannot be delegated to subcontractors, sub-subcontractors, insurance administrators, the resident engineer's representative, or other persons. Without limiting the generality of the foregoing, the contractor shall perform the following:

- a. Comply with all government requirements and regulations, including, but not limited, to UOSH.
- b. Participate in and support the general *CSSP*, *CSSC*, and other safety procedures specified in the contract.
- c. If required by the appropriate contract, regulation, Construction Safety Administrator, or the UTA project engineer, prepare a formal safety and health program designed to address specific activities associated with the work. Examples of required written safety programs include, but are not limited to the following: confined space entry, hazard communication, lockout/tag out, steel erection, etc.
- d. Abide by the general duty clause. (This clause is intended to clarify and reinforce UTA's posture in requiring contractors to provide a safe and healthy working environment for their employees).
- e. Upon notification of the contract award, adopt this manual and also present contractor's safety program to the resident engineer. Contractors lacking a formal safety program will not receive schedule extensions or additional monies to develop such a safety program.
- f. Appoint a competent contractor's superintendent and contractor's safety supervisor to carry out the duties and responsibilities of the safety program. The name of the contractor's superintendent and contractor's safety supervisor shall be given to the UTA Construction Safety Administrator in writing. Where the nature or the size of the contract warrants, the resident engineer may request the contractor to employ a qualified contractor's safety professional.
- g. Maintain and promptly file accurate reports as required by the resident engineer, the insurers, government requirements, including accident and injury reports, and furnish to the resident engineer and UTA Construction Safety Administrator, a monthly summary of injuries (on the attached form, appendix C). The resident engineer reserves the right to audit any contractors or subcontractors OSHA Log 300.
- h. Ensure subcontractor and sub-subcontractor compliance with jobsite safety requirements.
- i. Ensure that all of its subcontractors and their sub-subcontractors are provided with a copy of this manual and are informed of their obligations with regard to safety.
- j. Plan and execute all work to comply with the stated objectives and safety requirements including, but not limited to this manual, provisions of the contract, government requirements, and industry standards, including those listed in appendix A.
- k. Hold safety meetings at least weekly. Documentation of topics discussed and attendees shall be maintained and provided to the UTA Construction Safety Administrator upon request.
- l. Maintain an orientation and training program for new employees that will include training on the (1) hazards present in the area in which they will be working and (2) personal protective

equipment and apparel the workers will be required to use or wear as specified under applicable government requirements, including UOSH. The contractor shall provide and enforce the use of all personal protective equipment.

- m. Provide tools, machinery, and equipment in safe working condition.
- n. Promptly investigate and take corrective action when unsafe working conditions or methods are detected (e.g., lack of good housekeeping practice, use of equipment in obviously poor condition, failure to adhere to statutory construction regulations, etc.). First-time deficiencies should be corrected by prompt referral of the incident to the contractor's project safety supervisor or to the contractor's superintendent.
- o. Be responsible for the proper execution by contractor's personnel of their obligations in the *CSSP*, including the obligations of the contractor's superintendent or contractor's safety representative.
- p. Ensure that each crew has the ability to verbally communicate with any other member of UTA construction, inspection, and/or UTA management team.
- q. Provide monthly reports to the UTA Construction Safety Admin. See Appendix B.
- r. Maintenance of Traffic Control Employee - The contractor must name an employee and an alternate who will be on twenty-four hour call, with the authority to maintain construction barricades and signal flashers.

3.2 Construction Superintendent

The contractor's superintendent will ensure compliance with all provisions of the contract, including the *CSSP* and government requirements. Additional duties of the contractor's construction superintendent shall include the following:

- a. Review and direct immediate action to correct all substandard safety conditions at the job site.
- b. 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.
- c. Cooperate with the resident engineer representatives, UTA Construction Safety Administrator, the insurance administrators, and the insurers.
- d. Require each subcontractor and sub-subcontractor to appoint a job superintendent and job foreman to ensure compliance with this manual.

3.3 Contractor's Safety Supervisor

The Contractor's safety representative or contractor's safety supervisor shall perform the following:

- a. Provide timely reports in writing of any unsafe conditions or practices, and take corrective actions. Report all violations to the appropriate superintendent for corrective action.
- b. Investigate all accidents and implement immediate corrective action.
- c. Report all injuries and accidents in a timely manner in accordance with this manual and government requirements.
- d. Conduct daily safety inspections of the job site and the work of the contractor, subcontractor, and sub-subcontractors to eliminate unsafe acts and/or conditions.

- e. Review safety meeting reports submitted by job foremen and take necessary action to ensure that meaningful weekly safety meetings are held by the job foremen.
- f. Assist in the preparation of all accident investigation and reporting procedures.
- g. Implement safety-training programs for supervisors and employees applicable to specific responsibilities, including the steps to take in the event of an accident. Provide job foremen with appropriate training materials to conduct weekly "tool box" safety meetings, and attend those meetings for evaluation and follow through.
- h. Be responsible for the control, availability, and use of necessary safety equipment, including personal equipment for the employees.
- i. Coordinate safety activities with the UTA Construction Safety Administrator, the insurance administrator, and the insurers, and take necessary steps to promptly implement safety recommendations.
- j. Coordinate the public relations aspects of this manual with the UTA Construction Safety Administrator.
- k. Attend and participate in special safety meetings held or sponsored by the resident engineer, the insurers, or the insurance administrator.
- l. Obtain and keep current knowledge of availability of first aid and emergency treatment for injured employees.
- m. Maintain an active incident log containing a comprehensive record of all incidents on the project classifying them as near miss; utility hit; vehicle (on-site); first aid; recordable; lost time/restricted duty; and fatality. Such logs will be submitted to the Construction Safety Administrator quarterly, or in the event a project is finished within a quarter, at the completion of the project.

It should be noted that the *CSSP* reflects minimal standards. All general contractors, contractors, and their sub-tiers will be expected to meet or exceed the standards and good safe practices outlined in this manual and their own safety program, whichever is more stringent.

Additionally, smaller projects and smaller contractors may find it prudent to combine the responsibilities of the Superintendent and Safety Supervisor. This is the contractor's discretion, however, the standards will be met regardless.

3.4 Foremen

The job foremen are an integral part of an effective safety program, and the amount of effort they put into accident prevention on their daily assignments determines whether or not a good accident record is established.

The job foreman's responsibilities shall include the following:

- a. Instruct the personnel under his/her supervision in safe work practices and work methods at the time employees are given work assignments.
- b. Provide employees under his/her supervision with use of the proper protective equipment and suitable tools for the Work.
- c. Provide continuous monitoring to ensure that prompt action is taken to correct any unsafe practices or conditions on the job site.
- d. Correct or report immediately to the job superintendent any unsafe conditions, practices, or violations of this manual or the contractor's safety manual.

- e. Perform a complete investigation of all accidents and take corrective action to prevent a recurrence.
- f. Set a good safety example for personnel
- g. Hold weekly safety meetings with work crews to
 - Discuss any observed unsafe work practices or conditions,
 - Review the accident experience of the crew and discuss corrective action to prevent future accidents and,
 - Encourage safety suggestions from the employees and report their recommendations to the contractor safety engineer or contractor safety supervisor.
- h. Ensure that prompt first aid is administered to an injured employee.

3.5 Project Engineer Responsibilities

Insure that the contractor follows all applicable rules regarding safety and health and this manual. The project resident engineer is authorized to stop any construction activity or task which, in his judgment, constitutes an immediate or evolving situation of imminent danger. The resident engineer may perform the following:

- a. Review all applicable contract documents for safety related issues.
- b. Review contractor's safety programs, descriptions of the hazards peculiar to their work, and their nominees for the contractor's safety professional (or contractor's safety supervisor) position.
- c. Observe the contractor's application of its own safety program and the *CSSP*.
- d. Any contractor, subcontractor or sub-subcontractor employee who is found to be in violation of safety rules or other resident engineer policies or procedures is subject to a stop work notice until differences are resolved or the contractor disciplines the employee.

PROVIDED, HOWEVER, that the project resident engineer shall have no duty or obligation to conduct continuous or exhaustive inspections or observations to check the safety of the project or the safety precautions and programs for the work since these are solely the responsibility of the contractor under the contract.

3.6 UTA Construction Safety Administrator

The UTA Construction Safety Administrator will observe the contractor's application of the *CSSP*. The UTA Construction Safety Administrator has the right to perform the following:

- a. Stop any construction activity that constitutes an immediate threat of imminent danger, until such condition has been corrected.
- b. Report any observed unsafe working condition to the contractor and the resident engineer.
- c. Promptly notify the contractor and the resident engineer in writing of noncompliance with any of the safety requirements contained in the contract or this manual.
- d. Maintain written documentation of communications, as necessary with the contractor concerning accident prevention.
- e. Receive and review copies of the contractor's daily reports, equipment maintenance log, accident report forms, and other forms as they apply, upon request.

- f. Enforce the recommendations of the resident engineer.

PROVIDED, HOWEVER, that the UTA Construction Safety Administrator shall have no duty or obligation to conduct continuous or exhaustive inspections or observations to check the safety of the project or the safety precautions and programs for the work since these are contractually required of the contractor.

In the event of a conflict and/or ambiguity between various statutes on safety provisions, the most stringent safety regulation or interpretation by the Construction Safety Administrator as to which provision applies or what is implied in a given situation will be final.

3.7 UTA Employees Engaged in Construction Activities

UTA Employees engaged in construction activities will meet the applicable UTA, City, County, State, and Federal requirements. UTA Managers and Supervisors will notify the Construction Safety Administrator of construction activity in their area.

3.8 UTA Construction Safety and Security Committee

UTA has chartered a Construction Safety and Security Committee (CSSC) since 2005. Chaired by the UTA Construction/Design Safety Administrator, this committee meets at least every other month and includes the following members:

- 1st Tier Contractor Project Managers, Safety Managers, Superintendents, and Foremen
- UTA Chief of Safety and Security
- UTA Chief of Development
- UTA Capital Development Senior Program Managers
- UTA Capital Development Project Managers and Engineers
- UTA Civil Eng/Quality/Bridge Manager and designees
- UTA Safety Manager
- UTA Security Manager
- UTA Facility Maintenance Manager
- UTA Strategic Planners with projects nearing transition to CapDev
- UTA Transit Oriented Development Manager
- UTA Claims and Insurance Manager
- All UTA Safety Administrators
- UDOT State Safety Oversight
- Union Pacific Representative
- Invitees as determined by the UTA Construction Safety Administrator

The CSSC's primary responsibility is to share best construction safety practices across trades and contractors in order to prevent injuries. Additionally, this committee meeting serves as an update to multiple departments within multiple agencies on construction progress and issues. The CSSC is the approving authority for this program manual.

4.0 Safety Requirements

4.1 General Safety Provisions

The general contractor shall provide for the health and safety of employees, the public, and other persons; prevent damage to property, materials, supplies, and equipment. Without limiting the generality of the foregoing, to achieve these purposes, the contractor shall perform at least the following:

- a. Comply with all government requirements, industry standards (see appendix A) including, but not limited to, the application of OSHA Construction Safety and Health Regulations 29 CFR 1926 and 29 CFR 1910. Adhere to their contractor safety program and the *CSSP*. The contractor shall require compliance of the foregoing by all subcontractors and sub-subcontractors at every tier. UTA has adopted in full, 49 CFR 214, Railway Worker Protection Act.
- b. The contractor shall not receive additional payment or reimbursement for safety items and procedures which have been identified as required by the contract, or the *CSSP*, or any government requirements.
- c. All contractors shall have a written safety and health policy where required by OSHA unless they adopt the safety and health policy of the general contractor in writing.
- d. Require the wearing of reflective vests, safety glasses, and hard hats on all UTA construction sites. Work inside a building, without hazards from falling objects may preclude the wearing of a hard hat.

4.2 Employee Communication

Occupational safety and health matters will be promptly communicated with employees. This will be done by:

- **SAFETY COMMITTEE:** Safety Committees will communicate with employees on inspections and abatement activities, accident investigation findings, and general committee activities.
- **BULLETIN BOARDS:** A safety bulletin board will be located in each work area. The UOSH Poster and the company's Safety Policy will be permanently posted on all bulletin boards.
- **TOOLBOX/TAILGATE TALKS:** Supervisors will give Tailgate talks at least once each week to all employees. Provisions must be made to ensure that employees who were not present are given the information presented during the talk. This may be done by presenting the talk at a later time for the missing employees or by posting an outline of the talk on the safety bulletin board. Tailgate talks must be documented on the SAFETY MEETING REPORT.
- **EMPLOYEE SAFETY HANDBOOK:** An Employee Safety Handbook will be issued to each employee. This handbook covers basic safety rules, guidelines for safe work performance, company policy, etc. (Note: supervisors will be provided a SUPERVISOR'S SAFETY HANDBOOK, which will include the Employee's Safety handbook and appropriate additional information for supervisors).

- SAFETY POSTERS: Safety Posters, either purchased from a vendor or produced by the Safety and Environmental Coordinator, will be posted on the bulletin board and at other appropriate locations.
- SAFETY PERFORMANCE ANALYSIS: On a monthly basis, the UTA Safety Department publishes a dashboard. The Construction safety metrics are: lost time accidents in the past 12 months, recordable accidents in the past 12 months, and first aid incidents per month. See Appendix B for report formats.

4.3 Contractor Personnel Requirements

It is UTA's desire to maintain a safe place to work. To do this, the project manager must have the active participation and cooperation of all contractors, subcontractors, sub-subcontractors, and their employees. The contractor and each subcontractor and sub-subcontractor are responsible for orienting employees on the specific safety rules that must be followed by all persons working on the project.

The following items are not intended to be all inclusive. Refer to 29 CFR 1926 and UOSH requirements for clarification of any of the following.

4.3.1 Personal Protective Equipment

- The contractor shall be responsible for providing and requiring the use of required personal protective equipment for its employees.
- Approved hard hats shall be worn at all times on the job site. Individual company name/logo identification shall be shown on each hard hat. (Hats shall meet the requirements outlined by 29 CFR 1910.135). Those performing steel erection, welding, rigging, surveyors, and equipment operators may wear hard hats with beaks facing rear for clear (unrestricted) vision while the harness is properly oriented. All others shall be worn as designed by the manufacturer. Hard hats inspected periodically for damage to the shell and suspension system. Hard hats are **not** required during finish work (i.e. case and base) within facilities where there is no danger of falling items, at the discretion of UTA.
- Eye protection by means of goggles or eyeglasses with side shields shall be worn at all times on the job site.
- Protection against the effects of occupational noise exposure provided when sound levels exceed those of the OSHA noise standard.
- Clothing Requirements:
 - A serviceable, over the ankle, leather shoe or work boot with a heavy sole is to be worn. Protective steel or composite toe boots with a non-slip sole are recommended.
 - Full length trousers.
 - Shirts with a minimum of tee-shirt length sleeve.
 - Gloves shall be worn where protection is needed against: concrete, rough edges, sharp objects, hot or abrasive materials, and caustic or other chemicals.
 - Tank tops, shirts cut off at the midriff, cutoff shorts, sweat pants, moon boots, sandals, sneakers, loafers, jogging shoes, clogs, flip-flops, etc., are prohibited. Visitors are required to maintain the same dress code.

- Long hair shall be contained under a hard hat or net if individual is working near an exposure where hair may become entangled.
- High visibility vests (orange with reflective surfaces are required when working on or near the UPRR right of way) shall be worn at all times while working/visiting the railway, roadway, or public right of way. Safety vests are required on any site where there is heavy equipment present. Class 2 Level 2 vests are required in accordance with the Roadway Worker Protection Program. UTA reserves the right to require safety vests on other job sites.
- Protective goggles or face shields provided and worn where there is any danger of flying particles or corrosive materials.
- Employees who need corrective lenses (glasses or contacts lenses) in working environments with harmful exposures, required to wear only approved safety glasses, protective goggles, or use other medically approved precautionary procedures.
- Protective gloves, aprons, shields, or other means provided against cuts, corrosive liquids and chemicals. Appropriate foot protection required where there is the risk of foot injuries from hot, corrosive, poisonous substances, falling objects, crushing or penetrating actions.
- Approved respirators provided for regular or emergency use where needed.
- Have eye wash facilities and a quick drench shower within the work area where employees are exposed to injurious corrosive materials.
- Special equipment needed for electrical workers is required when working with voltages over 120 AC/DC.
- When lunches are eaten on the premises, they are eaten in areas where there is no exposure to toxic materials or other health hazards.

4.3.1.1 Working in the Heat

- Cooling pads inserted into hardhats or around the neck can help keep the head and neck cooler. Vented hardhats are also available to prevent heat buildup by allowing air to pass through. Neckbands soaked in cold water and worn during the day may also keep workers more comfortable. These measures will reduce the likelihood of heat injuries.
- Protective eyewear offering sufficient ventilation or special lens coatings can help reduce lens fogging in hot conditions. Sweatbands can be worn to absorb perspiration on the forehead before it drips into the eyes.
- Gloves used for hand protection can be cumbersome and also increase workers' heat complaints. Breathable products, employing nylon mesh or containing perforations, are available to reduce heat buildup. Select a glove that has a liner to absorb sweat.
- Maintaining proper hydration is essential. In some settings, workers can produce two or more gallons of sweat in a day. The National Institute for Occupational Safety and Health (NIOSH), recommends drinking five to seven ounces of fluids (excluding coffee, tea, soda, or alcohol) every 15-20 minutes to replenish the body. Workers must simultaneously be aware of hyponatremia caused by the consumption of too much water. The best guideline is to drink when thirsty.
- Physically demanding tasks should be limited to the coolest part of the shift and workers should take frequent breaks in cool areas.

4.3.1.2 Working in the Cold

- Wearing the proper clothes may be the most significant precaution to reducing cold stress/injuries. Wearing appropriate clothes for cold weather involves using layers of clothing. Also use layering to protect the head, hands, and feet.
- Drink plenty of fluids, preferably warm beverages. Thirst is suppressed in a cold environment and dehydration may occur when fluid intake is reduced.
- Increase caloric intake when working in cold environments. Workers in cold environments who wear heavy, protective clothing expend more energy and so require 10-15 percent more calories.
- A work warm-up schedule should be used to provide periodic times for warm-up breaks. Additional breaks should be provided as the wind velocity increases and/or the temperature drops.
- Avoid taking certain drugs such as alcohol, nicotine, caffeine, and medication that inhibits the body's response to cold or impairs judgment.
- Avoid the cold if you are becoming exhausted or immobilized. These conditions can accelerate the effects of cold weather.
- Shield work areas from drafty or windy conditions. Provide a heated shelter for workers with prolonged exposure to equivalent wind-chill temperatures of 20° F or less.
- Select the warmest hours of the day when braving the cold. Minimize activities that reduce circulation.
- Educate employees on symptoms of cold-related stresses: heavy shivering, uncomfortable coldness, severe fatigue, drowsiness, and/or euphoria.
- Use the buddy system. Always work in pairs when working in extreme weather conditions so partners can monitor one another and obtain help quickly in an emergency.

4.3.1.3 Sanitizing Equipment & Clothing

- Personal protective clothing or equipment, that employees are required to wear or use, is of a type capable of being easily cleaned and disinfected.
- Employees are prohibited from interchanging personal protective clothing or equipment, unless it has been properly cleaned.
- Machines and equipment, which processes, handle or apply materials that could be injurious to employees, cleaned and/or decontaminated before being overhauled or placed in storage.
- Employees prohibited from smoking or eating in any area where contaminants are present.
- When employees are required to change from street clothing into protective clothing, a clean change room with separate storage facility for street and protective clothing is provided.
- Employees required to shower and wash their hair as soon as possible after a known contact has occurred with a carcinogen.
- When equipment, materials, or other items are taken into or removed from a carcinogen regulated area, is done in a manner that will not contaminate non-regulated areas or the external environment.

4.3.2 General Work Environment and Housekeeping

- Office areas are to be kept neat and orderly.
- Storage areas will be maintained orderly at all times. When supplies are received, the supplies will be stored properly.
- Spills will be cleaned-up immediately and wastes disposed of properly.
- All waste receptacles will be lined with a plastic trash bag to avoid direct contact while handling. Custodial employees will use rubber gloves and compaction bar when handling wastes.
- Keep file and desk drawers closed when not attended to avoid injuries. Open only one drawer at a time to prevent tipping of file cabinets.
- At the end of the business day, turn off all office equipment (area heaters, lamps, coffee-maker, PCs, etc.) and lights to save energy and prevent fires. All space heaters must be unplugged at the end of the day to assure they have been turned-off.
- Work areas will be kept neat and orderly, during operations and as follows:
- All aisles, emergency exits, fire extinguishers, eye wash stations, etc., will be kept clear (a minimum of three feet in front of and to either side) of product storage, material storage, fork trucks and pallet jacks at all times.
- Utility employees will be responsible to keep aisles and work floors clear of excessive debris and waste materials during shift operation, between breaks and at shift change when necessary or directed by supervision; however, all Employees are responsible to communicate slippery floors to supervision for immediate clean-up.
- All refuse and waste materials will be placed in the recognized waste containers for disposal.
- Restrooms and break areas are provided as a convenience for all Employees. The following rules will apply:
- Employees are expected to clean-up after themselves as a common courtesy to fellow Employees.
- Flammable materials (fireworks, explosives, etc.) may not be stored in break areas or brought on UTA property.

4.3.2.1 Maintenance Areas

- Housekeeping, including the removal of trash and debris from site, shall be provided by the contractor. This pertains to all areas occupied by or worked in, including parking lots.
- The contractor shall provide sanitation facilities (porta-potties) and, when number of workers regularly exceeds 20 personnel per day, hand wash stations.
- No employee shall possess, use, or be under the influence of illegal drugs, alcohol, or any mind-altering substance while on the project.
- Gambling, fighting, or horseplay shall not be tolerated.
- Use of water trucks, sweeping, and other additional means will treat areas in need of dust control.

- All persons shall follow these safe practices rules, render every possible aid to safe operations, and report all unsafe conditions or practices to managers or supervisors.
- All aisles, emergency exits, fire extinguishers, etc., will be kept clear (a minimum of three feet of either side) of material storage (temporary and permanent) at all times.
- Storage Areas will be maintained orderly at all times:
 - Pipe stock stored horizontally on racks and sorted by size
 - Metal stock stored horizontally on racks and sorted by size
 - Sheet metal stock stored vertically in racks and sorted by type
 - All fittings, etc., stored in bins on shelves and sorted by type and use
 - All flammables stored in OSHA-approved Fire Cabinets and self-closing cans where necessary
 - Spills will be cleaned-up immediately by the person responsible and wastes disposed properly.
- All refuse and waste materials will be placed in the recognized waste containers for disposal.
- The grounds surrounding the facility and worksites are an extension of the work place.
- Keep all doors and loading docks completely free of debris or other obstructions.
- Maintain visibility through all windows by washing at regular intervals.
- Keep doors and windows properly maintained in good working order.
- Repair any damage to doors and windows at regular intervals.
- All trash will be discarded only in the waste containers provided.
- Park only in the designated assigned area.
- Provide any stairs or platforms adjacent to or leading into the building(s) with adequate rails, adequate treads to climb, and an area clean and free of materials.
- Keep grounds neat and orderly, free of refuse and unnecessary materials.
- Store materials outdoors only in designated areas of the grounds.
- Provide designated walkways through grounds, preferably paved and kept clear of snow, ice, materials, or any other physical hazards.
- Provide a lighting system that is adequate to allow employees to navigate around the grounds as necessary at dusk and after dark or restrict access to daylight hours only. All work areas adequately illuminated.
- Work surfaces kept dry or appropriate means taken to assure the surfaces are slip-resistant.
- Combustible scrap, debris and waste stored safely and removed from the worksite promptly.
- Accumulated combustible dust routinely removed from elevated surfaces, including the overhead structure of buildings.
- Combustible dust cleaned up with a vacuum system to prevent the dust going into suspension.

- Metallic or conductive dust prevented from entering or accumulation on or around electrical enclosures or equipment.
- Covered metal waste cans used for oily and paint-soaked waste.
- All oil and gas fired devices equipped with flame failure controls that will prevent flow of fuel if pilots or main burners are not working.
- Paint spray booths, dip tanks and the like cleaned regularly.
- All toilets and washing facilities clean and sanitary.
- Pits and floor openings covered or otherwise guarded.
- Managers and supervisors shall insist on employee's observing and obeying every rule, regulation, and order as is necessary to the safe conduct of the work, and shall take such action as is necessary to obtain observance.
- Running, jumping, horseplay, scuffling, and other acts which tend to have an adverse influence on the safety or well-being of the employees shall be prohibited.
- Work shall be well planned and supervised to prevent injuries in the handling of materials and in working together with equipment.
- Employees shall be instructed to ensure that all guards and other protective devices are in proper places and adjusted, and shall report deficiencies promptly to the manager or supervisor.
- Observe and obey all safety signs and procedures in any area you are assigned to work in.
- Report all damaged or faulty equipment to your supervisor unless you are authorized to make repairs.
- No unauthorized person shall make electrical or mechanical repairs or adjustments on equipment.
- Maintain adequate access to electrical panels.
- Approach doors slowly and open them with caution; someone may be on the other side.
- Fire doors must not be blocked open or locked in such a way that they cannot be opened in the exit direction.
- When using stairs, do not carry loads so large that the view of stair treads is obscured. Keep one hand free for the hand rail.
- Keep stairs clear of all objects. Pick up anything you find on the stairs and store or dispose of it properly.
- Know where the fire extinguisher in your area is, how to use it, and for what types of fires it is rated. Do not block or cover fire extinguishers, fire alarms, or sprinkler heads.
- Burning of decorative candles is not permitted without specific permission from the fire marshal.
- Do not run cords, computer cables, or telephone wires across walkways creating a tripping hazard.

- Do not use extension cords as a substitute for permanent electrical wiring. The only exception to this are “fused” multi-outlet strips which are “UL listed.” If extension cords are necessary for short-term use, use only heavy-duty cords.
- Report unsafe conditions or behavior to your supervisor or to the RSO.
- All personnel will be required to attend a Safety Meeting as required by Project Requirements.
- Drinking water containers are for drinking water and ice only. The "common drinking cup" is not allowed. Only disposable cups will be used.
- Do not remove, displace, damage, destroy or carry off any safety device, safeguard, notice, or warning.
- Never use a box, bucket, chair, shelf, etc., as a ladder. Use only approved step-stools or ladders.

4.3.2.2 Walkways

- Aisles and walkways marked as appropriate.
- Wet surfaces covered with non-slip materials.
- Holes in the floor, sidewalk or other walking surface repaired properly, covered or otherwise made safe.
- There is safe clearance for walking in aisles where motorized or mechanical handling equipment is operating.
- Spilled materials cleaned up immediately.
- Materials or equipment stored in such a way that sharp projectiles will not interfere with the walkway.
- Changes of direction or elevations readily identifiable.
- Aisles or walkways that pass near moving or operating machinery, welding operations or similar operations arranged so employees will not be subjected to potential hazards.
- Adequate headroom provided for the entire length of any aisle or walkway. If low headroom is a byproduct of the construction process, place appropriate signage.
- Bridges provided over conveyors and similar hazards.

4.3.2.3 Floor & Wall Openings

- Floor openings guarded by a cover, guardrail, or equivalent on all sides (except at entrance to stairways or ladders).
- Toe boards installed around the edges of a permanent floor opening where persons may pass below the opening.
- Skylight screens of such construction and mounting that they will withstand a load of at least 200 pounds.
- The glass in windows, doors, glass walls that are subject to human impact, of sufficient thickness and type for the condition of use.

- Grates or similar type covers over floor openings such as floor drains, of such design that foot traffic or rolling equipment will not be affected by the grate spacing.
- Unused portions of service pits and pits not actually in use either covered or protected by guardrails or equivalent.
- Manhole covers, trench covers and similar covers, plus their supports, designed to carry a truck rear axle load of at least 20,000 pounds when located in roadways and subject to vehicle traffic.
- Floor or wall openings in fire resistive construction provided with doors or covers compatible with the fire rating of the structure and provided with self-closing feature when appropriate.

4.3.2.4 Stairs & Stairways

- Standard stair rails or handrails on all stairways having four or more risers. The most common violation of this rule is the construction of stairs for access to construction trailers.
- All stairways at least 22 inches wide.
- Stairs have at least a 6'6" overhead clearance.
- Stairs angle no more than 50 and no less than 30 degrees.
- Stairs of hollow-pan type treads and landings filled level with solid material.
- Step risers on stairs uniform from top to bottom, with no riser spacing greater than 7-1/2 inches.
- Steps on stairs and stairways designed or provided with a surface that renders them slip resistant.
- Stairway handrails located between 30 and 34 inches above the leading edge of stair treads.
- Stairway handrails have a least 1-1/2 inches of clearance between the handrails and the wall or surface they are mounted on.
- Stairway handrails capable of withstanding a load of 200 pounds, applied in any direction.
- Where stairs or stairways exit directly into any area where vehicles may be operated, adequate barriers and warnings provided to prevent employees stepping into the path of traffic.
- Stairway landings have a dimension measured in the direction of travel, at least equal to width of the stairway.
- The vertical distance between stairway landings limited to 12 feet or less.

4.3.2.5 Elevated Surfaces

- Signs posted, when appropriate, showing the elevated surface load capacity.
- Surfaces elevated more than 30 inches above the floor or ground provided with standard guardrails.
- All elevated surfaces (beneath which people or machinery could be exposed to falling objects) provided with standard 4-inch toe boards.
- A permanent means of access and egress provided to elevated storage and work surfaces.

- Required headroom provided where necessary.
- Material on elevated surfaces piled, stacked or racked in a manner to prevent it from tipping, falling, collapsing, rolling or spreading.
- Dock boards or bridge plates used when transferring materials between docks and trucks or rail cars.

4.3.3.6 Exiting or Egress

- All exits marked with an exit sign and illuminated by a reliable light source.
- The directions to exits, when not immediately apparent, marked with visible signs.
- Doors, passageways or stairways, that are neither exits nor access to exits and which could be mistaken for exits, appropriately marked "NOT AN EXIT", "TO BASEMENT", "STOREROOM", and the like.
- Exit signs provided with the word "EXIT" in lettering at least 5 inches high and the stroke of the lettering at least 1/2 inch wide.
- Exit doors side-hinged.
- All exits kept free of obstructions.
- At least two means of egress provided from elevated platforms, pits or rooms where the absence of a second exit would increase the risk of injury from hot, poisonous, corrosive, suffocating, flammable, or explosive substances.
- Provide sufficient exits to permit prompt escape in case of emergency.
- Special precautions taken to protect employees during construction and repair operations.
- The number of exits from each floor of a building, and the number of exits from the building itself, appropriate for the building occupancy load.
- Ramps are used as part of required exiting from a building, with the ramp slope limited to 1-foot vertical and 12 feet horizontal.
- Exiting will be through frameless glass doors, glass exit doors, storm doors, and such are the doors fully tempered and meet the safety requirements for human impact.

4.3.3.7 Exit Doors

- Doors that are required to serve as exits designed and constructed so that the way of exit travel is obvious and direct.
- Windows that could be mistaken for exit doors, made inaccessible by means of barriers or railings.
- Exit doors openable from the direction of exit travel without the use of a key or any special knowledge or effort, when the building is occupied.
- A revolving, sliding or overhead door prohibited from serving as a required exit door.
- Where panic hardware is installed on a required exit door, it will allow the door to open by applying a force of 15 pounds or less in the direction of the exit traffic.
- Doors on cold storage rooms provided with an inside release mechanism that will release the latch and open the door even if it's padlocked or otherwise locked on the outside.

- Exit doors open directly onto any street, alley or other area where vehicles may be operated, are adequate barriers and warnings provided to prevent employees stepping into the path of traffic.
- Doors that swing in both directions and are located between rooms where there is frequent traffic, provided with viewing panels in each door.

4.3.4 Confined Spaces

In accordance with the most recent change to 29 CFR 1926, the general contractor is responsible communicating confined space hazards to all employees and subcontractors on the site. Any vessel, manhole or pit including trenches, or any structure not meant for human occupancy is considered a confined space. Confined spaces that require permits must meet the following criteria:

1. Not designed for human occupation
2. Limited access and egress
3. Large enough to access
4. Contain a hazard such as engulfment, poor atmosphere, etc.

A completed Confined Space Permit by competent person is required prior to entry into permit required confined spaces. Contact your Supervisor prior to starting any Confined Space work for copies of permit required and a list of required Safety Equipment. The following guidelines are generally applicable to all confined spaces:

- Confined spaces thoroughly emptied of any corrosive or hazardous substances, such as acids or caustics, before entry.
- Before entry, all lines to a confined space, containing inert, toxic, flammable, or corrosive materials are valved off and blanked or disconnected and separated.
- It is required that all impellers, agitators, or other moving equipment inside confined spaces be locked-out if they present a hazard.
- Either natural or mechanical ventilation is provided prior to confined space entry.
- Before entry, appropriate atmospheric tests are performed to check for oxygen deficiency, toxic substance and explosive concentrations in the confined space before entry.
- Adequate illumination is provided for the work to be performed in the confined space.
- The atmosphere inside the confined space is frequently tested or continuously monitored during conduct of work.
- There is an assigned safety standby employee outside of the confined space, whose sole responsibility is to watch the work in progress, sound an alarm if necessary, and render assistance.
- The standby employee or other employees are prohibited from entering the confined space without lifelines and respiratory equipment if there is any questions as to the cause of an emergency.
- In addition to the standby employee, there is at least one other trained rescuer in the vicinity.
- All rescuers appropriately trained and using approved, recently inspected equipment. While calling 911 is prudent, this may not constitute the entire rescue plan.
- All rescue equipment allows for lifting employees vertically from a top opening.

- Personnel trained in First Aid and CPR immediately available.
- Approved respiratory equipment is required if the atmosphere inside the confined space cannot be made acceptable. There is an effective communication system in place whenever respiratory equipment is used and the employee in the confined space is out of sight of the standby person.
- All portable electrical equipment is used inside confined spaces either grounded and insulated, or equipped with ground fault protection.
- Before gas welding or burning is started in a confined space, hoses are checked for leaks, compressed gas bottles forbidden inside of the confined space, torches lighted only outside of the confined area and the confined area tested for an explosive atmosphere each time before a lighted torch is to be taken into the confined space.
- If employees will be using oxygen-consuming equipment such as torches, furnaces, in a confined space, sufficient air is provided to assure combustion without reducing the oxygen concentration of the atmosphere below 19.5 percent by volume.
- Whenever combustion-type equipment is used in confined space, provisions are made to ensure the exhaust gases are vented outside of the enclosure.
- Each confined space is checked for decaying vegetation or animal matter, which may produce methane.
- The confined space is checked for possible industrial waste, which could contain toxic properties.
- If the confined space is below the ground and near areas where motor vehicles will be operating, it is possible for vehicle exhaust or carbon monoxide to enter the space.

4.3.5 Excavations

- The “2 for 25” rule:
 - All spoils, materials and equipment shall be a minimum of **2'** from the edge or excavation.
 - Trenches **4'** or deeper require shoring, except in solid rock.
 - A ladder, stairway, or ramp must be no further than **25'** from an employee in the trench.
- All floor openings or excavations shall be barricaded on all sides to ensure employees are aware of the hazard.
- Excavations can accumulate noxious gasses and fumes. Trenches and manholes with live sewage must be well ventilated and tested before entry, in accordance with confined space rules.

4.3.6 Tools

- Lasers—Only continuous wave (CW) lasers with output power levels of 10mW/cm² (10 milliwatts per square centimeter) or less and installed and operated in accordance with the manufacturer’s instructions shall be used on construction sites. The use of lasers exceeding 5mW/cm² requires the use of anti-laser eye protection devices.

- All tools whether company or personal, must be in good working condition. Defective tools will not be used. Examples: chisels with mushroomed heads, hammers with loose or split handles, any tool missing a guard, etc.
- All extension cords, drop cords and electrical tools shall be checked (to include presence of GFI's) and color coded by a designated competent person each month. This shall be part of the assured grounding program. Electrical cords and equipment must be properly grounded with GFI's in place and checked by a competent person. Cords and equipment which do not meet requirements shall be immediately tagged and removed from service until repairs have been made.
- Hand tools shall be used only for the purpose for which they were designed and shall be kept in good repair.
- Pneumatic power tools shall be secured to the hose by some positive means to prevent the tool from becoming accidentally disconnected.
- Any tool found not in proper working order, or that develops a defect during use, shall be removed from service until properly repaired.
- All tools and equipment (both, company and employee-owned) used by employees at their workplace in good condition.
- Worn or bent wrenches replaced regularly.
- Appropriate handles used on files and similar tools.
- Appropriate safety glasses, face shields, and similar equipment used while using hand tools or equipment that might produce flying materials or be subject to breakage.
- Check jacks periodically to assure they are in good operating condition.
- Tool handles wedged tightly in the head of all tools.
- Tool cutting edges kept sharp so the tool will move smoothly without binding or skipping.
- Tools stored in dry, secure location where they won't be tampered with.
- Eye and face protection used when driving hardened or tempered spuds or nails.

4.3.6.1 Portable (Power Operated) Tools & Equipment

- No power tool shall be operated without a properly adjusted guard in place.
- Grinders, saws, and similar equipment provided with appropriate safety guards.
- Power tools used with the correct shield, guard or attachment recommended by the manufacturer.
- Portable circular saws equipped with guards above and below the base shoe.
- Circular saw guards checked to assure they are not wedged up, thus leaving the lower portion of the blade unguarded.
- Rotating or moving parts of equipment guarded to prevent physical contact.
- All cord-connected, electrically operated tools and equipment effectively grounded or of the approved double insulated type.

- Effective guards in place over belts, pulleys, chains, and sprockets, on equipment such as concrete mixers, air compressors, and the like.
- Portable fans provided with full guards or screens having openings 1/2 inch or less.
- Hoisting equipment available and used for lifting heavy objects, and are hoist ratings and characteristics appropriate for the task.
- Ground-fault circuit interrupters provided on all temporary electrical 15 and 20 ampere circuits, used during periods of construction.
- Pneumatic and hydraulic hoses on power-operated tools checked regularly for deterioration or damage.

4.3.6.2 Abrasive Wheel Equipment Grinders

- The work rest used and kept adjusted to within 1/8 inch of the wheel.
- The adjustable tongue on the top side of the grinder used and kept adjusted to within 1/4 inch of the wheel.
- Side guards cover the spindle, nut, and flange and 75 percent of the wheel diameter.
- Bench and pedestal grinders permanently mounted.
- Goggles or face shields always worn when grinding. **Gloves may not be worn when using a bench grinder or wire wheel.**
- The maximum RPM rating of each abrasive wheel compatible with the RPM rating of the grinder motor.
- Fixed or permanently mounted grinders connected to their electrical supply system with metallic conduit or other permanent wiring method.
- Each grinder have an individual on and off control switch.
- Each electrically operated grinder effectively grounded.
- Before new abrasive wheels are mounted, they are visually inspected and ring tested.
- Dust collectors and powered exhausts provided on grinders used in operations that produce large amounts of dust.
- Splashguards mounted on grinders that use coolant, to prevent the coolant reaching employees.
- Cleanliness maintained around grinder.

4.3.6.3 Powder Actuated Tools

- Only trained, certified employees will be allowed to operate powder-actuated tools.
- Employees who operate powder-actuated tools trained in their use and carry a valid operator's card, issued by the employer.
- Each powder-actuated tool stored in its own locked container when not being used.
- A sign at least 7" by 10" with bold type reading "POWDER-ACTUATED TOOL IN USE" conspicuously posted when the tool is being used.
- Powder-actuated tools left unloaded until they are actually ready to be used.

- Powder-actuated tools inspected for obstructions or defects each day before use.
- Powder-actuated tools operators have and use appropriate personal protective equipment such as hard hats, safety goggles, safety shoes and hearing protection.

4.3.6.4 Machine Guarding

- Employers will provide
 - a training program to instruct employees on safe methods of machine operation.
 - adequate supervision to ensure that employees are following safe machine operating procedures.
 - a regular program of safety inspection of machinery and equipment.
- All machinery and equipment kept clean and properly maintained.
- Sufficient clearance provided around and between machines to allow for safe operations, set up and servicing, material handling and waste removal.
- Equipment and machinery securely placed and anchored, when necessary to prevent tipping or other movement that could result in personal injury.
- There is a power shut-off switch within reach of the operator's position at each machine.
- Electric power to each machine be locked out for maintenance, repair, or security.
- The noncurrent-carrying metal parts of electrically operated machines bonded and grounded.
- Foot-operated switches guarded or arranged to prevent accidental actuation by personnel or falling objects.
- Manually operated valves and switches controlling the operation of equipment and machines clearly identified and readily accessible.
- All emergency stop buttons colored red.
- All pulleys and belts that are within 7 feet of the floor or working level properly guarded.
- All moving chains and gears properly guarded.
- Splashguards mounted on machines that use coolant, to prevent the coolant from reaching employees.
- Methods provided to protect the operator and other employees in the machine area from hazards created at the point of operation, ingoing nip points, rotating parts, flying chips, and sparks.
- Machinery guards secure and so arranged that they do not offer a hazard in their use.
- Special hand tools are used for placing and removing material protect the operator's hands.
- Revolving drums, barrels, and containers required to be guarded by an enclosure that is interlocked with the drive mechanism, so that revolution cannot occur unless the guard enclosure is in place, so guarded.
- Arbors and mandrels have firm and secure bearings and are free from play.
- Provisions made to prevent machines from automatically starting when power is restored after a power failure or shutdown.

- Machines constructed so as to be free from excessive vibration when the largest size tool is mounted and run at full speed.
- Machinery is cleaned with compressed air, is air pressure controlled and personal protective equipment or other safeguards used to protect operators and other workers from eye and body injury.
- Fan blades protected with a guard having openings no larger than 1/2 inch, when operating within 7 feet of the floor.
- Saws used for ripping, equipped with anti-kick devices and spreaders.
- Radial arm saws so arranged that the cutting head will gently return to the back of the table when released.

4.3.7 Fall Protection

- The employee is required to wear a full body harness with lanyard when working more than six feet above any adjacent working surface. A one hundred percent tie-off is required when working six or more feet above grade. An alternate form of fall protection may be used, provided it meets with 29 CFR 1926 and UTA Policy OSH 4.22.
- Lifelines shall be erected to provide fall protection where work is required in areas where permanent protection is not in place. Horizontal lifelines shall be a minimum of 1/2" diameter wire rope. Vertical lifelines shall be 3/4" manila rope or equivalent and shall be used in conjunction with an approved rope grab.
- Structural steel erectors are required to "Hook Up" with full body harness and lanyard.
- Employees working over or near water, where danger of drowning exists, shall be provided with U.S. Coast Guard approved life jacket or buoyant work vests.
- Workers using their lanyards to access the work or position themselves on a wall or column, etc., must use an additional safety lanyard for fall protection.
- Proper use of manlifts: As soon as you enter an articulating boom lift and before the lift is started, you must put on the harness and attach the lanyard to the lift. Employees are not required to wear harnesses on scissor lifts.
- Variation from OSHA regulatory guidance requires a documented hazard evaluation signed by a foreman or superintendent.

4.3.8 Electrical

- Workplace electricians must be familiar with the OSHA Electrical Safety Regulations and the local code requirements.
- Specify compliance with OSHA for all contract electrical work.
- All employees required to report as soon as practicable any obvious hazard to life or property observed in connection with electrical equipment or lines.
- Employees instructed to make preliminary inspections and/or appropriate tests to determine what conditions exist before starting work on electrical equipment or lines.
- When electrical equipment or lines are to be serviced, maintained or adjusted, necessary switches are opened, locked-out and tagged whenever possible.

- Portable electrical tools and equipment grounded or of the double insulated type.
- Electrical appliances such as vacuum cleaners, polishers, vending machines grounded.
- Extension cords being used have a grounding conductor.
- Multiple plug adapters prohibited.
- Ground-fault circuit interrupters installed on each temporary 15 or 20 ampere, 120 volt AC circuit at locations where construction, demolition, modifications, alterations or excavations are being performed.
- All temporary circuits protected by suitable disconnecting switches or plug connectors at the junction with permanent wiring.
- Exposed wiring and cords with frayed or deteriorated insulation shall be repaired or replaced promptly.
- Flexible cords and cables free of splices or taps.
- All cord, cable and raceway connections intact and secure. All electrical raceways and enclosures securely fastened in place.
- In wet or damp locations, electrical tools and equipment are appropriate for the use or location or otherwise protected.
- The location of electrical power lines and cables (overhead, underground, underfloor, other side of walls) is determined before digging, drilling or similar work is begun.
- Metal measuring tapes, ropes, handlines or similar devices with metallic thread woven into the fabric prohibited where they could come in contact with energized parts of equipment or circuit conductors.
- The use of metal ladders is prohibited in area where the ladder or the person using the ladder could come in contact with energized parts of equipment, fixtures or circuit conductors.
- All disconnecting switches and circuit breakers labeled to indicate their use or equipment served.
- Disconnecting means always opened before fuses are replaced.
- All interior wiring systems include provisions for grounding metal parts of electrical raceways, equipment and enclosures.
- All energized parts of electrical circuits and equipment guarded against accidental contact by approved cabinets or enclosures.
- Sufficient access and working space is provided and maintained about all electrical equipment to permit ready and safe operations and maintenance.
- All unused openings (including conduit knockouts) in electrical enclosures and fittings closed with appropriate covers, plugs or plates.
- Electrical enclosures such as switches, receptacles, junction boxes, etc., provided with tight-fitting covers or plates.
- Low voltage protection is provided in the control device of motors driving machines or equipment, which could cause probably injury from inadvertent starting.

- Each motor disconnecting switch or circuit breaker is located within sight of the motor control device.
- Each motor not located within sight of its controller or the controller disconnecting means is capable of being locked in the open position or is a separate disconnecting means installed in the circuit within sight of the motor.
- The controller for each motor is in excess of two horsepower, rated in horsepower equal to or in excess of the rating of the motor it serves.
- Employees who regularly work on or around energized electrical equipment or lines shall be instructed in the cardiopulmonary resuscitation (CPR) methods.
- Employees are prohibited from working alone on energized lines or equipment over 600 volts.

4.3.8.1 Lockout Tag Out: Control of Hazardous Energy

All equipment shall be locked out or tagged out to protect against accidental or inadvertent operations when such operations could cause injury to personnel. Contractors must provide a Lockout Tag Out procedure that meets the following:

- Lockout Tag out will be used to ensure that the machine or equipment is stopped, isolated from all potentially hazardous energy sources, and locked out before employees perform any servicing or maintenance where the unexpected energization or start-up of the machine or equipment or release of stored energy could cause injury such as minor to serious shock, burns (chemical or thermal), cuts, or abrasions.
- All employees are required to comply with the restrictions and limitations imposed upon them during the use of lockout.
- The locking-out of control circuits in lieu of locking-out main power disconnects prohibited.
- Appropriate employees provided with individually keyed personal safety locks.
- Employees required to keep personal control of their key(s) while they have safety locks in use.
- It is required that employees check the safety of the lock out by attempting a start up after making sure no one is exposed.
- The power disconnecting means for equipment does not also disconnect the electrical control circuit.
- Servicing is to be done only by trained, authorized employees.
- Each new or transferred affected employee and other employees whose work operations are or may be in the area shall be instructed in the purpose and use of the lockout tag out procedures.
- All employees, upon observing a machine or piece of equipment which is locked out to perform servicing or maintenance, shall not attempt to start, energize, or use the machine or equipment.
- In the event a piece of equipment is to be isolated for a period of time exceeding one normal shift and the isolating means is not capable of being locked out, a reasonable effort will be made to affix a device to the isolating means to make capable of being locked out.

- All authorized employee engaging in lockout tag out activities will follow the written procedure and the guidelines set forth in the contractor's Lockout Tag Out Program.

4.3.9 Hot Work

Further guidance for UTA employees is provided in UTA OSH 4.33 Hot Work (Welding and Cutting) Plan

- Adequate precautions must be taken to protect employees and equipment from hot work such as welding or burning. Fire extinguishing equipment shall be no further away than 50 ft. from all hot work. Used extinguishers to be re-charged immediately.
- Ensure that no welding or cutting operations which may generate an open flame or hot surface around combustibles /flammable liquids are performed until contractor's superintendent or resident engineer has been notified and written authorization is obtained to conduct such operations.
- Have anti-flashback devices installed on the fuel side of all fuel gas and oxygen cutting torches.
- Use of welding blinds are required in high traffic areas.
- Secure compressed gas cylinders in upright position at all times. Valve caps shall be in place when not in use. Cylinders shall be transported and stored in accordance with applicable government requirements.
- Provide safety devices on all air compressors with hoses exceeding one and one-half-inch inside diameter at the source of supply or branch line to reduce pressure in case of hose failure.
- Burning and cutting equipment shall be checked daily before being used. Flash back arresters shall be installed at the regulators on both oxygen and L.P. bottles. All gas shall be shut off and hoses disconnected from bottles and manifolds at the end of the day. Caps shall be replaced on bottles when gauges are removed. When gauges are removed and caps replaced, the oxygen and L.P. bottles shall be separated into storage areas not less than 20' apart with a "No Fire or Smoking" sign posted and a fire extinguisher readily available. Makeshift field repairs will not be allowed.

4.3.9.1 Welding, Cutting & Brazing

Contractors may require welders to be certified through a nationally recognized program such as the American Welding Society.

- Only authorized and trained personnel permitted to use welding, cutting or brazing equipment.
- All operator have a copy of the appropriate operating instructions and are they directed to follow them.
- Compressed gas cylinders regularly examined for obvious signs of defects, deep rusting, or leakage.
- Carefully handle cylinders, safety valves, relief valves, and the like, to prevent damage.
- Precautions taken to prevent the mixture of air or oxygen with flammable gases, except at a burner or in a standard torch.

- Only approved apparatus (torches, regulators, pressure-reducing valves, acetylene generators, manifolds) used.
- Cylinders kept away from sources of heat.
- It is prohibited to use cylinders as rollers or supports.
- Empty cylinders appropriately marked their valves closed and valve-protection caps on.
- Signs reading: DANGER NO-SMOKING, MATCHES, OR OPEN LIGHTS, or the equivalent posted.
- Cylinders, cylinder valves, couplings, regulators, hoses, and apparatus keep free of oily or greasy substances.
- Do not drop or strike cylinders.
- Unless secured on special trucks, regulators are removed and valve-protection caps put in place before moving cylinders.
- Cylinders without fixed hand wheels have keys, handles, or non-adjustable wrenches on stem valves when in service.
- Liquefied gases stored and shipped valve-end up with valve covers in place.
- Employees instructed to never crack a fuel-gas cylinder valve near sources of ignition.
- Before a regulator is removed, the valve is closed and gas released from the regulator.
- Hoses will be color coded: red used to identify the acetylene (and other fuel-gas) hose, green for oxygen hose, and black for inert gas and air hose.
- Pressure-reducing regulators used only for the gas and pressures for which they are intended.
- Open circuit (No Load) voltage of arc welding and cutting machines as low as possible and not in excess of the recommended limits.
- Under wet conditions, automatic controls for reducing no-load voltage are used.
- Grounding of the machine frame and safety ground connections of portable machines checked periodically.
- It is required that electric power to the welder be shut off when no one is in attendance.
- Suitable fire extinguishing equipment available for immediate use.
- The welder is forbidden to coil or loop welding electrode cable around his body.
- Wet machines thoroughly dried and tested before being used.
- Work and electrode lead cables frequently inspected for wear and damage, and replaced when needed.
- Means for connecting cables' lengths have adequate insulation.
- Use shields to confine heat, sparks, and slag if the object to be welded cannot be moved and fire hazards cannot be removed.
- Firewatchers assigned when welding or cutting is performed, in locations where a serious fire might develop.
- Combustible floors kept wet, covered by damp sand, or protected by fire-resistant shields.

- When floors are wet, personnel are protected from possible electrical shock.
- When welding is done on metal walls, precautions are taken to protect combustibles on the other side.
- Before hot work is begun, are used drums, barrels, tanks, and other containers so thoroughly cleaned that no substances remain that could explode, ignite, or produce toxic vapors.
- It is required that eye protection helmets, hand shields and goggles meet appropriate standards.
- Employees exposed to the hazards created by welding, cutting, or bracing operations protected with personal protective equipment and clothing.
- A check made for adequate ventilation where welding or cutting is performed.

4.3.9.2 Arc Welders

- Keep your head out of the fumes or use the appropriate respirator.
- Use enough ventilation or exhaust to remove fumes and gases from the work area. Mechanical equipment should exhaust at least 2000 cfm of air for each welder, except where individual exhaust hoods, booths, or air-line respirators are used.
- Natural ventilation may be used under certain conditions. For welding or cutting mild steel, natural ventilation is usually sufficient if a room has at least 10,000 cubic feet per welder, with a ceiling height of at least 16 feet. Cross-ventilation should not be blocked, and welding should not be done in a confined space.
- Don't get too close to the arc ("Avoid the plume"). Use corrective lenses to help you maintain the proper distance if necessary.
- Electrodes removed from the holders when not in use. Electrodes are considered a hazardous item by UOSH and require an SDS be maintained onsite.
- Read and understand the Safety Data Sheets (SDS) for the product.
- Use a smoke extractor-type welding gun for semiautomatic welding processes.
- Protect your body from welding spatter and arc flash with clothing made from durable, flame-resistant material, such as woolen fabrics, and gear that includes flame-proof apron and gloves, leather leggings, and high boots.
- Avoid clothing made of synthetic materials, which can melt when exposed to extreme heat or sparks, or cotton unless it is specially treated for fire protection.
- Keep your clothes free of grease and oil, which may ignite.
- Protect others from spatter, flash, and glare with non-flammable protective screens or curtains.
- Be sure to wear safety glasses with side shields when in a welding area. Safety glasses shall be worn underneath the
- Be sure you are insulated from the work piece and ground, as well as other live electrical parts.
- Don't lean on the work piece.
- Use plywood, rubber mats or other dry insulation to stand on, and wear dry, hole-free gloves.

- Stay dry, and do not weld when you are wet. Never dip the electrode in water to cool it.
- Check equipment to be sure it is properly grounded, in good repair, and installed according to prevailing codes.
- Be sure equipment is turned off when not in use.
- Electric current flowing through a conductor causes Electric and Magnetic Fields (EMF), which can interfere with pacemakers and may effect health in other ways. Consult your physician before arc welding if you have a pacemaker. To avoid excessive exposure to EMF, keep the electrode and work cables together, never place your body between the two cables or coil the electrode lead around your body, and do not work directly next to the welding power source.
- Do not remove labels from chemical containers unless the containers are empty and have been thoroughly cleaned. Clean, empty containers may be used for other materials if proper new labels are affixed.

4.3.10 Scaffolding

- Green tags are to be placed on 100% complete scaffolds with all braces, locks and hand, mid & toe rails in place before use.
- Yellow tags are for incomplete scaffolds. If scaffold is missing a hand, mid or toe board, it must have a yellow tag and employees on it must be tied off at all times.
- Red tags are for scaffolds that are in the process of either being erected or disassembled. These scaffolds are not to be used at any time.
- Scaffold tags should be placed in a highly visible location on the scaffolds for all employees to see.
- All scaffolding and work platforms must be in accordance with OSHA specifications. UTA corporate Policy OSH 4.22 also contains some guidance on the use of scaffolding.

4.3.11 Portable Ladders

When ladders are used on train, streetcar, or BRT platforms, contractors and UTA employees must abide by UTA Corporate Policy OSH 4.22. The intent of this policy is to prevent an individual from falling off the ladder and into the path of an oncoming revenue vehicle.

The use of any device to gain height, ladders included, within the ROW creates the potential to foul the track. The Roadway Worker Protection Program (RWPP) Manual provides further guidance and requirements.

Fixed ladders have other requirements directed by 29 CFR 1926.1053(a)(19).

Within the confines of construction, the following apply:

- All ladders maintained in good condition, joints between steps and side rails tight, all hardware and fittings securely attached, and moveable parts operating freely without binding or undue play.
- Ladders shall be secured at the top and bottom and extend 3 feet past the working surface.
- Metal ladders around electrical work are prohibited. The only exception is a properly constructed wooden ladder built by a contractor on a job site. In this case, UTA employees may use the ladder to inspect the job site.

- Never use a step ladder as an extension ladder. A step ladder must only be used when fully opened with braces locked.
- Non-slip safety feet provided on each ladder.
- Keep ladder rungs and steps free of grease and oil.
- It is prohibited to place a ladder in front of doors opening toward the ladder except when the door is blocked open, locked or guarded.
- It is prohibited to place ladders on boxes, barrels, or other unstable bases to obtain additional height.
- Face the ladder when ascending or descending.
- Maintain three points of contact while ascending or descending the ladder.
- Employees are prohibited from using ladders that are broken, missing steps, rungs, or cleats, broken side rails or other faulty equipment.
- Employees may not to use the top 2 steps of ordinary stepladders as a steps.
- It is required that when portable rung or cleat type ladders are used the base is so placed that slipping will not occur, or it is lashed or otherwise held in place.
- Portable metal ladders legibly marked with signs reading "CAUTION" "Do Not Use Around Electrical Equipment" or equivalent wording.
- Employees prohibited from using ladders as guys, braces, skids, gin poles, or for other than their intended purposes.
- Employees instructed to only adjust extension ladders while standing at a base (not while standing on the ladder or from a position above the ladder).
- The rungs of ladders uniformly spaced at 12 inches, center to center.

4.3.12 Compressors & Compressed Air

- Compressors equipped with pressure relief valves, and pressure gauges.
- Compressor air intakes installed and equipped to ensure that only clean uncontaminated air enters the compressor.
- Air filters installed on the compressor intake.
- Compressors operated and lubricated in accordance with the manufacturer's recommendations.
- Safety devices on compressed air systems checked frequently.
- Before any repair work is done on the pressure system of a compressor, the pressure is bled off and the system locked-out.
- Signs posted to warn of the automatic starting feature of the compressors.
- The belt drive system is totally enclosed to provide protection for the front, back, top, and sides.
- It is strictly prohibited to direct compressed air towards a person.
- Employees prohibited from using highly compressed air for cleaning purposes.

- If compressed air is used for cleaning off clothing, the pressure is reduced to less than 10 psi.
- When using compressed air for cleaning, employees use personal protective equipment.
- Safety chains or other suitable locking devices used at couplings of high pressure hose lines where a connection failure would create a hazard.
- Before compressed air is used to empty containers of liquid, the safe working pressure of the container is checked.
- When compressed air is used with abrasive blast cleaning equipment, the operating valve is a type that must be held open manually.
- When compressed air is used to inflate auto tires, a clip-on chuck and an inline regulator preset to 40 psi is required.
- It is prohibited to use compressed air to clean up or move combustible dust if such action could cause the dust to be suspended in the air and cause a fire or explosion hazard.
- Compressed air may not be transferred or piped through any non-metal pipe such as PVC, HDPE or LDPE.
- Claw type connections on air hoses require locking pins and whip checks.

4.3.13 Compressed Air Receivers

- Every receiver is equipped with a pressure gauge and with one or more automatic, spring-loaded safety valves.
- The total relieving capacity of the safety valve capable of preventing pressure in the receiver from exceeding the maximum allowable working pressure of the receiver by more than 10 percent.
- Every air receiver provided with a drainpipe and valve at the lowest point for the removal of accumulated oil and water.
- Compressed air receivers periodically drained of moisture and oil.
- All safety valves tested frequently and at regular intervals to determine whether they are in good operating condition.
- The inlet of air receivers and piping systems is kept free of accumulated oil and carbonaceous materials.

4.3.14 Compressed Gas & Cylinders

- Cylinders with a water weight capacity over 30 pounds equipped with means for connecting a valve protector device, or with a collar or recess to protect the valve.
- Cylinders legibly marked to clearly identify the gas contained.
- Compressed gas cylinders stored in areas which are protected from external heat sources such as flame impingement, intense radiant heat, electric arcs, or high temperature lines.
- Cylinders located or stored in areas where they will not be damaged by passing or falling objects, or subject to tampering by unauthorized persons.
- Cylinders stored or transported in a manner to prevent them creating a hazard by tipping, falling or rolling.

- Cylinders containing liquefied fuel gas, stored or transported in a position so that the safety relief device is always in direct contact with the vapor space in the cylinder.
- Valve protectors always placed on cylinders when the cylinders are not in use or connected for use.
- All valves closed off before a cylinder is moved, when the cylinder is empty, and at the completion of each job.
- Low pressure fuel-gas cylinders checked periodically for corrosion, general distortion, cracks, or any other defect that might indicate a weakness or render it unfit for service.
- The periodic check of low pressure fuel-gas cylinders include a close inspection of the cylinders' bottom.

4.3.15 Material Handling

- Is there safe clearance for equipment through aisles and doorways?
- Aisle ways designated, permanently marked, and kept clear to allow unhindered passage.
- Motorized vehicles and mechanized equipment inspected daily or prior to use.
- Vehicles shut off and brakes set prior to loading or unloading.
- Containers or combustibles or flammables, when stacked while being moved, always separated by dunnage sufficient to provide stability.
- Dock boards (bridge plates) used when loading or unloading operations are taking place between vehicles and docks.
- Trucks and trailers secured from movement during loading and unloading operations.
- Dock plates and loading ramps constructed and maintained with sufficient strength to support imposed loading.
- Hand trucks maintained in safe operating condition.
- Chutes equipped with sideboards of sufficient height to prevent the materials being handled from falling off.
- Chutes and gravity roller sections firmly placed or secured to prevent displacement.
- At the delivery end of rollers or chutes, provisions are made to brake the movement of the handled materials.
- Pallets usually inspected before being loaded or moved.
- Hooks with safety latches or other arrangements used when hoisting materials so that slings or load attachments won't accidentally slip off the hoist hooks.
- Securing chains, ropes, chockers or slings are adequate for the job to be performed.
- When hoisting material or equipment, provisions are made to assure no one will be passing under the suspended loads.
- Safety Data Sheets available to employees handling hazardous substances.

4.3.15.1 Hoist & Auxiliary Equipment

- Each overhead electric hoist is equipped with a limit device to stop the hook travel at its highest and lowest point of safe travel.
- Each hoist automatically will stop and hold any load up to 125 percent of its rated load if its actuating force is removed.
- The rated load of each hoist is legibly marked and visible to the operator.
- Stops provided at the safe limits of travel for trolley hoist.
- The controls of hoists plainly marked to indicate the direction of travel or motion.
- Each cage-controlled hoist is equipped with an effective warning device.
- Close-fitting guards or other suitable devices installed on hoist to assure hoist ropes will be maintained in the sheave grooves.
- All hoist chains or ropes of sufficient length to handle the full range of movement for the application while still maintaining two full wraps on the drum at all times.
- Nip points or contact points between hoist ropes and sheaves which are permanently located within 7 feet of the floor, ground or working platform, guarded.
- It is prohibited to use chains or rope slings that are kinked or twisted.
- It is prohibited to use the hoist rope or chain wrapped around the load as a substitute for a sling.
- The operator is instructed to avoid carrying loads over people.
- Only employees who have been trained in the proper use of hoists allowed to operate them.

4.3.15.2 Cranes

- The crane is visually inspected for defective components prior to the beginning of any work shift.
- All electrically operated cranes effectively grounded.
- A crane preventive maintenance program is established.
- The load chart is clearly visible to the operator.
- Operating controls clearly identified.
- A fire extinguisher is provided at the operator's station.
- The rated capacity is visibly marked on each crane.
- An audible warning device is mounted on each crane.
- Sufficient illumination is provided for the operator to perform the work safely.
- Cranes of such design, that the boom could fall over backward, equipped with boomstops.
- Each crane has a certificate indicating that required testing and examinations have been performed.
- Crane inspection and maintenance records maintained and available for inspection.

4.3.15.3 Industrial Trucks - Forklifts

- Only trained personnel allowed to operate industrial trucks.
- Substantial overhead protective equipment is provided on high lift rider equipment.
- The required lift truck operating rules posted and enforced.
- Directional lighting is provided on each industrial truck that operates in an area with less than 2 foot candles per square foot of general lighting.
- Each industrial truck has a warning horn, whistle, gong or other device which can be clearly heard above the normal noise in the areas where operated.
- The brakes on each industrial truck capable of bringing the vehicle to a complete and safe stop when fully loaded.
- The industrial truck's parking brake will effectively prevent the vehicle from moving when unattended.
- Industrial trucks operating in areas where flammable gases or vapors, or combustible dust or ignitable fibers may be present in the atmosphere, are approved for such locations.
- Motorized hand and hand/rider trucks so designed that the brakes are applied, and power to the drive motor shuts off when the operator releases his/her grip on the device that controls the travel.
- Industrial trucks with internal combustion engine operated in buildings or enclosed areas, carefully checked to ensure such operations do not cause harmful concentration of dangerous gases or fumes.

4.3.15.4 Helicopters

- Do not approach or leave a helicopter while its engines are running unless in a crouched position and the pilot or pilot's designee signals that it is safe to do so.
- Always approach and leave the helicopter in plain view of the pilot or as directed by the pilot's designee; never from the rear.
- Never walk around the tail of a running helicopter. Not only will the tail rotor kill you, but it will be very painful.
- Approach and leave the helicopter on a level with the craft or a lower level, never from or to higher ground than that of the helicopter.
- Wear goggles and head protection with chin strap under the chin when in the vicinity of an operating helicopter. Loose-fitting clothing likely to flap in the downwash and possibly be snagged on the hoist line shall not be worn.
- Load all cargo and secure it to the satisfaction of the pilot or pilot's designee.
- Do not put tag lines on sling loads without the pilot's or pilot's designee's permission and limit their numbers, their placement, and their lengths to the pilot's satisfaction.
- Do not place explosives, flammables, or other dangerous materials on board any aircraft without the pilot's knowledge.
- Carry all materials to or from the helicopter in a horizontal position not above waist level.
- Do not smoke within 50 feet of a helicopter, fuel storage, or fueling operation.

- Do not stand directly under a hovering helicopter longer than necessary to hook-up or unhook the load.
- Always watch the helicopter, sling load, hook, or bottom end of the cable to avoid being hit.
- Know the escape procedure at each operation site.
- Wear appropriate ear protection while on or near helicopters.
- Keep landing and hovering areas clear of loose and lightweight materials.
- Notify the person in charge of the project when erecting a suspended line, tower or other navigational hazard.
- Turn off radio transmitter when in vicinity of explosives or explosive loading operations.
- Passengers transported by helicopter shall be instructed to:
 - Board and depart only on instruction from the pilot.
 - Use seat belts at all times.
 - Do not talk unnecessarily to the pilot.
 - Remain seated during the time you are aboard.
 - Watch for other airborne aircraft and navigational hazards and call them to the attention of the pilot.
 - Do not smoke unless permitted by the pilot.
- When performing as a crew member in external operations, listen to and be familiar with the normal sounds emitted by the helicopter in flight so that you will have the earliest notice of trouble and can avoid dangerous exposure.
- When visibility is reduced by dust or other conditions, ground personnel shall exercise special caution to keep clear of main and stabilizing rotors.

4.3.16 Spraying Operations

- Adequate ventilation is assured before spray operations are started.
- Mechanical ventilation is provided when spraying operation is done in enclosed areas.
- Mechanical ventilation is provided during spraying operations, so arranged that it will not circulate the contaminated air.
- The spray area is free of hot surfaces.
- The spray area is at least 20 feet from flames, sparks, operating electrical motors and other ignition sources.
- Portable lamps used to illuminate spray areas suitable for use in a hazardous location.
- Approved respiratory equipment is provided and used when appropriate during spraying operations.
- Fire control sprinkler heads kept clean.

- "NO SMOKING" signs posted in spray areas, paint rooms, paint booths, and paint storage areas.
- The spray area is kept clean of combustible residue.
- Spray booths constructed of metal, masonry, or other substantial noncombustible material.
- Spray booth floors and baffles noncombustible and easily cleaned.
- Infrared drying apparatus is kept out of the spray area during spraying operations.
- The spray booth is completely ventilated before using the drying apparatus.
- The electric drying apparatus is properly grounded.
- Lighting fixtures for spray booths located outside of the booth and the interior lighted through sealed clear panels.
- The electric motors for exhaust fans placed outside booths or ducts.
- Belts and pulleys inside the booth fully enclosed.
- Ducts have access doors to allow cleaning.
- All drying spaces have adequate ventilation.

4.3.17 Environmental Controls

- All work areas properly illuminated.
- Hazardous substances identified which may cause harm by inhalation, ingestion, skin absorption or contact.
- Employees aware of the hazards involved with the various chemicals they may be exposed to in their work environment, such as ammonia, chlorine, epoxies, and caustics.
- Employee exposure to chemicals in the workplace is kept within acceptable levels.
- Whenever possible a less harmful method or product shall be used.
- The work area's ventilation system is appropriate for the work being performed.
- Employee exposure to welding fumes is controlled by ventilation, use of respirators, exposure time, or other means.
- If forklifts and other vehicles are used in buildings or other enclosed areas, the carbon monoxide levels are kept below maximum acceptable concentration.
- There has been a determination that noise levels in the facilities are within acceptable levels.
- Steps being taken to use engineering controls to reduce excessive noise levels.
- Proper precautions being taken when handling asbestos and other fibrous materials.
- Caution labels and signs used to warn of asbestos.
- Wet methods used, when practicable, to prevent the emission of airborne asbestos fibers, silica dust and similar hazardous materials.
- Vacuuming with appropriate equipment is used whenever possible rather than blowing or sweeping dust.

- Grinders, saws, and other machines that produce respirable dusts vented to an industrial collector or central exhaust system.
- All local exhaust ventilation systems designed and operating properly such as airflow and volume necessary for the application.
- There written standard operating procedures for the selection and use of respirators where needed.
- All water provided for drinking, washing, and cooking is potable.
- All outlets for water not suitable for drinking clearly identified.
- Employees' physical capacities assessed before being assigned to jobs requiring heavy work.
- Employees instructed in the proper manner of lifting heavy objects.
- Where heat is a problem, all fixed work areas have been provided with spot cooling or air conditioning.
- Employees screened before assignment to areas of high heat to determine if their health condition might make them more susceptible to having an adverse reaction.
- Employees working on streets and roadways where they are exposed to the hazards of traffic, required to wear bright colored (traffic orange) warning vest.
- Exhaust stacks and air intakes located that contaminated air will not be recirculated within a building or other enclosed area.
- Equipment producing ultra-violet radiation is properly shielded.

4.3.18 Flammable & Combustible Materials

- "NO SMOKING" signs posted where appropriate in areas where flammable or combustible materials are used or stored.
- "NO SMOKING" signs posted on liquefied petroleum gas tanks.
- "NO SMOKING" rules enforced in areas involving storage and use of flammable materials.
- Combustible scrap, debris and waste materials (i.e. oily rags) stored in covered metal receptacles and removed from the worksite promptly.
- Proper storage practiced to minimize the risk of fire including spontaneous combustion.
- Approved containers and tanks used for the storage and handling of flammable and combustible liquids.
- Are all connections on drums and combustible liquid piping, vapor and liquid tight.
- Are all flammable liquids kept in closed containers when not in use (e.g. parts cleaning tanks, pans).
- Bulk drums of flammable liquids grounded and bonded to containers during dispensing.
- Storage rooms for flammable and combustible liquids have explosion-proof lights.
- Storage rooms for flammable and combustible liquids have mechanical or gravity ventilation.

- Liquefied petroleum gas stored, handled, and used in accordance with safe practices and standards.
- Liquefied petroleum storage tanks guarded to prevent damage from vehicles.
- All solvent wastes and flammable liquids kept in fire-resistant covered containers until they are removed from the worksite.
- Vacuuming used whenever possible rather than blowing or sweeping combustible dust.
- Fire separators placed between containers of combustibles or flammables, when stacked one upon another, to assure their support and stability.
- Fuel gas cylinders and oxygen cylinders separated by distance, fire resistant barriers or other means while in storage.
- Fire extinguishers selected and provided for the types of materials in areas where they are to be used.
 - Class A: Ordinary combustible material fires.
 - Class B: Flammable liquid, gas or grease fires.
 - Class C: Energized-electrical equipment fires.
- If a Halon 1301 fire extinguisher is used, employees can evacuate within the specified time for that extinguisher.
- Appropriate fire extinguishers mounted within 75 feet of outside areas containing flammable liquids, and within 10 feet of any inside storage area for such materials.
- The transfer/withdrawal of flammable or combustible liquids is performed by trained personnel.
- Fire extinguishers mounted so that employees do not have to travel more than 75 feet for a class "A" fire or 50 feet for a class "B" fire.
- Employees trained in the use of fire extinguishers.
- Are extinguishers free from obstructions or blockage.
- All extinguishers serviced, maintained and tagged at intervals not to exceed one year.
- All extinguishers fully charged and in their designated places.
- A record maintained of required monthly checks of extinguishers.
- Where sprinkler systems are permanently installed, the nozzle heads are directed or arranged so that water will not be sprayed into operating electrical switchboards and equipment.
- Safety cans used for dispensing flammable or combustible liquids at a point of use.
- All spills of flammable or combustible liquids cleaned up promptly.
- Storage tanks adequately vented to prevent the development of excessive vacuum or pressure as a result of filling, emptying, or atmosphere temperature changes.
- Storage tanks equipped with emergency venting that will relieve excessive internal pressure caused by fire exposure.
- Spare portable or butane tanks, which are used by industrial trucks stored in accord with regulations.

4.3.19 Fire Protection

- Have a fire prevention plan.
- Plan describes the type of fire protection equipment and/or systems.
- Established practices and procedures to control potential fire hazards and ignition sources.
- Employees aware of the fire hazards of the material and processes to which they are exposed.
- Local fire department well acquainted with your facilities, location and specific hazards.
- Fire alarm system is tested at least annually.
- Fire alarm system is certified as required.
- Interior standpipes and valves are inspected regularly.
- Outside private fire hydrants are flushed at least once a year and on a routine preventive maintenance schedule.
- Fire doors and shutters in good operating condition.
- Fire doors and shutters unobstructed and protected against obstructions, including their counterweights.
- Fire door and shutter fusible links in place.
- Automatic sprinkler system water control valves, air and water pressures checked weekly/periodically as required.
- Maintenance of automatic sprinkler system is assigned to responsible persons or to a sprinkler contractor.
- Sprinkler heads protected by metal guards, when exposed to physical damage.
- Proper clearance is maintained below sprinkler heads.
- Portable fire extinguishers provided in adequate number and type.
- Fire extinguishers mounted in readily accessible locations.
- Are fire extinguishers recharged regularly and noted on the inspection tag.
- Employees periodically instructed in the use of extinguishers and fire protection procedures.

4.3.20 Hazardous Chemical Exposures

- Employees trained in the safe handling practices of hazardous chemicals such as acids, caustics, and the like.
- Employees aware of the potential hazards involving various chemicals stored or used in the workplace--such as acids, bases, caustics, epoxies, and phenols.
- Employee exposure to chemicals is kept within acceptable levels.
- Eye wash fountains and safety showers provided in areas where corrosive chemicals are handled.
- All containers, such as vats and storage tanks labeled as to their contents--e.g. "CAUSTICS".

- All employees required to use personal protective clothing and equipment when handling chemicals (i.e. gloves, eye protection, and respirators).
- Flammable or toxic chemicals kept in closed containers when not in use.
- Chemical piping systems clearly marked as to their content.
- Where corrosive liquids are frequently handled in open containers or drawn from storage vessels or pipelines, adequate means is readily available for neutralizing or disposing of spills or overflows properly and safely.
- Standard operating procedures have been established and are they being followed when cleaning up chemical spills.
- Where needed for emergency use, respirators are stored in a convenient, clean and sanitary location.
- Respirators intended for emergency use adequate for the various uses for which they may be needed.
- Employees prohibited from eating in areas where hazardous chemicals are present.
- Is personal protective equipment provided, used and maintained whenever necessary.
- There are written standard operating procedures for the selection and use of respirators where needed.
- Respirator protection program requires employees to be instructed on the correct usage and limitations of the respirators.
- Respirators shall be regularly inspected and cleaned.
- Control procedures have been instituted for hazardous materials, where appropriate, such as respirators, ventilation systems, handling practices, and the like.
- Whenever possible, hazardous substances are handled in properly designed and exhausted booths or similar locations.
- Use general dilution or local exhaust ventilation systems to control dusts, vapors, gases, fumes, smoke, solvents or mists which may be generated in your workplace.
- Ventilation equipment shall be provided for removal of contaminants from such operations as production grinding, buffing, spray painting, and/or vapor decreasing, and is it operating properly.
- If internal combustion engines are used, carbon monoxide is kept within acceptable levels.
- Vacuum, rather than blowing or sweeping, dusts whenever possible for cleanup.
- Materials, which give off toxic, asphyxiant, suffocating or anesthetic fumes, are stored in remote or isolated locations when not in use.
- There shall be a list of hazardous substances used in your workplace.
- There is a written hazard communication program dealing with Safety Data Sheets (SDS) labeling, and employee training.
- The contractor's superintendent is responsible for SDSs, container labeling, and employee training.

- Each container for a hazardous substance (i.e. vats, bottles, storage tanks,) is labeled with product identity and a hazard warning (communication of the specific health hazards and physical hazards).
- There is a Safety Data Sheet readily available for each hazardous substance used.
- There is an employee training program for hazardous substances. This program include:
 - An explanation of what an SDS is and how to use and obtain one.
 - SDS contents for each hazardous substance or class of substances.
 - Explanation of "Right to Know".
 - Identification of where employees can see the employer's written hazard communication program and where hazardous substances are present in their work area.
 - The physical and health hazards of substances in the work area, how to detect their presence, and specific protective measures to be used.
 - Details of the hazard communication program, including how to use the labeling system and SDSs.
 - How employees will be informed of hazards of non-routine tasks, and hazards of unlabeled pipes.

4.3.21 Noise

- Hearing protection is required if the continuous noise level exceeds 85 dBA or if the noise level peaks above 115 dBA.
- Noise levels are to be measured at regular intervals.
- Try isolating noisy machinery from the rest of your operation.
- Engineering controls been used to reduce excessive noise levels.
- Where engineering controls are determined not feasible, administrative controls (i.e. worker rotation) are being used to minimize individual employee exposure to noise.
- Work areas where noise levels make voice communication between employees difficult been identified and posted.
- Approved hearing protective equipment (noise attenuating devices) is available to every employee working in areas where continuous noise levels exceed 85 dBA.
- Employees are properly fitted and instructed in the use and care of ear protectors.
- Employees exposed to continuous noise above 85 dBA given periodic audiometric testing to ensure that you have an effective hearing protection system.
- Contractors may have to comply with local noise ordinances for the wellbeing of residents around the work area.

4.3.22 Emergency Action Plan

- Have an emergency action plan. "Call 911" should be part of the plan, but is not a plan unto itself.

- The emergency action plan complies with requirements of OSHA regulations.
- Emergency escape procedures and routes have been developed and communicated to all employees, contractors, and sub-contractors.
- The emergency action plan is reviewed and revised periodically.
- Employees now their responsibilities:
 - For reporting emergencies.
 - During an emergency.
 - For conducting rescue and medical duties.

4.3.23 Infection Control

- Contractors will provide a training and information program for employees exposed to or potentially exposed to blood and/or body fluids.
- Employees are aware of specific workplace practices to follow when appropriate (Hand washing, handling sharp instruments, handling of laundry, disposal of contaminated materials, reusable equipment.)
- Personal protective equipment is provided to employees, and in all appropriate locations
- Employers will offer, at no cost to the employee, Hepatitis B vaccinations to employees potentially exposed to blood borne pathogens.

4.3.24 Ergonomics

- The work can be performed without eyestrain or glare to the employees.
- Tasks will not require prolonged raising of the arms.
- The neck and shoulders will not have to be stooped to view the task.
- There are no pressure points on any parts of the body (wrists, forearms, back of thighs).
- The work can be done using the larger muscles of the body.
- The work can be done without twisting or overly bending the lower back.
- Sufficient rest breaks, in addition to the regular rest breaks, to relieve stress from repetitive-motion tasks.
- Tools, instruments and machinery shaped, positioned and handled so that tasks can be performed comfortably.
- All pieces of furniture adjusted, positioned and arranged to minimize strain on all parts of the body.

4.3.24.1 Back & Lifting Safety

Lifting things and moving them from one place to another is a very simple operation. However, if this operation is done incorrectly, it may cause many injuries. You can wrench your back or pull a muscle, or crush or pinch your hands or feet. Your general physical preparedness is your best defense against back injuries.

- Learn how to lift and prevent injuries.

- Use the right kind of personal protective gear.
- Hand protection and safety shoes are a must for most lifting jobs.
- Some jobs might call for hard hats and goggles.
- If it is too big or too heavy for you to handle alone, get help.
- Check the material for nails, splinters, rough stripping that might injure your hands.
- When lifting heavy objects, the large muscles of the leg instead of the smaller muscles of the back shall be used. Learn and practice the proper way to lift or carry material or any object.

Lifting Procedures:

1. Face the load.
2. Put one foot alongside the object, and one foot behind.
3. Bend at the knees. Let your legs do the work.
4. Keep back straight and the load as close as possible.
5. Get a good, firm grip with the palms of your hands while lifting by straightening your legs.
6. Avoid twisting as you turn with a load. Shift your feet instead.
7. Don't try to lift something above waist level in one motion. Set the load on a table or bench, then change your grip for lifting higher.
8. To put the object down, just follow the lifting procedure, but in reverse

4.3.25 Material Storage

Proper storage procedures are required for dry, raw materials, flammables and compressed gases storage to prevent fires, keep exits and aisles clear and avoid injuries and illnesses. General rules for material storage are as follows:

- Materials may not be stored any closer than 18 inches to sprinkler heads. A minimum of 3 feet side clearance will be maintained around doorways and emergency exits. Passageways and aisle will be properly marked and a minimum of six feet in width. Materials, fork lifts, pallet jacks, etc., may not be stored in aisles or passageways.
- Aisles and passageways will be kept clear of debris. All spills of materials will be immediately cleaned-up by the person responsible.
- All platforms and racks will have maximum load capacity displayed. The weight of stored material will not exceed the rated load capacity.
- All flammables will be stored in OSHA-approved flammable storage cabinets or stored outside (at least 50 feet from any structure)
- Fuels, solvents and other flammables (not stored in original shipping containers) will be stored in OSHA-approved self-closing containers with flame arresters. Flammables may not be stored in open containers (open parts baths, etc.).

- Flammable storage areas will be kept dry and well ventilated. No storage of combustible materials, open flames or exposed electrical components are permitted in the flammable storage area.
- Flammable or combustible materials may not be stored in electrical rooms. Electrical rooms must be kept clean and dry at all times.
- Inspect bottle for defects & proper marking/labels
- Ensure stamped date on bottle has not expired
- Inspect valve assembly and adapter thread area
- Ensure SDS is on file or with shipment
- Follow SDS requirements for storage
- Cylinder cap securely in place when not in use.
- Cylinders marked with contents and if empty/full.
- Cylinders stored up-right and secured to a stationary structure in a shaded and well ventilated area.
- Cylinders not stored within 50 feet of exposed electrical components or combustible materials.
- Cylinders are protected from accidental rupture.
- Chemically reactive gases not stored within 50 feet of each other.
- If a cart or cylinder trolley is used, the cylinders must be secured to the cart.
- Inspect valve adapter threads.
- Inspect all fasteners, hoses & regulators prior to hooking up to cylinder.
- Use only for approved purposes.
- Use in up-right position.
- Regulators must be of same rated pressure as cylinder
- Keep cylinder valve shut when not in use; don't depend on regulators

4.4 Construction near Railroad Operations

The contractor shall take all necessary steps to prevent the following hazards:

- a. Mounds or piles of earth, construction materials, temporary structures, overnight storage of equipment, or other objects within seven feet of any operational railroad track or crossings.
- b. Pavement drop-offs in excess of three inches, either permanent or temporary.
- c. Barricades not properly highlighted for easy visibility.
- d. Night work lighting directed in such a manner that it interferes with production.
- e. Open holes that are not guarded.
- f. All employees shall have roadway worker protection (RWP) training when working on or near any UTA rail system or any other active railroad entity.

4.4.1 Clearances

Standard clearances may not give enough protection where tracks pass doorways or corners of temporary buildings causing workers to walk directly into the path of moving railroad equipment. These locations must be safeguarded with fixed railings or other means of pedestrian control to detour employees from the hazard.

4.4.2 Speed Limits

Speed limits shall not exceed 15 mph; 10 mph in locations where workers are intermingled with motorized equipment. Speed limits will be established and enforced for all traffic, in accordance with UTA, UP, and UDOT motor vehicle authority.

4.4.3 Track Access Permit

A permit is required any time the tracks are occupied or there is the potential for fouling the tracks by machine, equipment, material, or worker. If a crew is found to be without a permit, the violators shall be removed from the track work site until a permit is obtained.

4.4.4 On-Track Safety

The contractor is responsible for compliance with the Federal Railroad Administration's Roadway Worker Protection (RWP) regulation (49 CFR 214, Subpart C) and UTA's on-track safety rules. Under 49 CFR 214, Subpart C, contractors are responsible for the training of their employees on these regulations. UTA provides RWP training upon request.

In addition, all contractor employees must participate in a job briefing that will specify the type of on-track safety requirements for the type of work being performed. Special note must be made of:

- Limits of track authority
- Track fouling limits (10' from center of UTA tracks)
- Adjacent track safety
- Clear zones
- Personal protective equipment (PPE)
- Work zone around machines
- Minimum distances between machines

4.4.4.1 Other Railroad Activity in Work Area

UTA provides RWP training for UTA track only. Contact the owning railroad for their policy and training. The UTA RWP Program provides further guidance for shared track operations.

4.5 Traffic Control

4.5.1 Flagging, Barricades, Signs, and Signals

Traffic controls are the responsibility of the contractor overseeing the completion of the contract. Public roads crossing the work site, and roadways on the work site used by equipment and motorized vehicles, will be the responsibility of the contractor.

Every effort will be made to prevent disruption of traffic flow by the motorized public and pedestrian traffic. Accident and injury prevention will be a top priority.

Flag persons shall be trained and qualified.

Contractors are required to adhere to the standards for work zone traffic control as printed in part VI of the MUTCD Book (latest edition). All standards of the manual on uniform traffic control devices will be required to be placed in effect during the contract. Traffic control ordinances of the local jurisdiction shall be complied with, where applicable.

4.5.2 Maintenance of Traffic Control Employee

The contractor must name an employee and an alternate, who will be on twenty-four hour call, with the authority to maintain construction barricades and signal flashers.

4.6 Substance Abuse Policy

The contractor's substance abuse policy shall be in accordance with Chapter 38 of the Utah code, 49 CFR 655, and the DOL Drug Free Workplace Act of 1988. Testing procedures will follow 49 CFR 40.

Any possession, use, or distribution of a controlled substance, or alcohol on site is strictly forbidden. Pending company policy, termination may result for violation of this policy.

4.6.1 Drug Testing and Cost

Before allowing a "safety sensitive" employee (as defined by current US DOT regulations) to perform a safety sensitive function for the first time, the contractor must ensure that the employee passes a pre-employment drug test.

When a covered employee has not performed a safety sensitive function for ninety consecutive calendar days, and the employee has not been in the contractor's random testing selection pool during that time, the contractor shall ensure that the employee passes a pre-employment drug test before returning to safety sensitive duties.

The cost of all drug testing will be borne by the contractor / employer.

Tests may be performed on a periodic basis. All employees on site will be subject to random drug / alcohol testing.

Testing for cause (reasonable suspicion) will be initiated in accordance with the guidelines within chapter 38 of the Utah Code and 49 CFR part 655.

4.6.2 Post Accident Testing

A test for drug and alcohol use is required after an accident. The cost of these tests will be borne by the employer.

4.6.3 Legally Prescribed Drugs

Prescription medication may be permitted on site, provided the drugs are contained in the original prescription container and are prescribed by an authorized medical doctor for the current use of the person named on the container.

It is the responsibility of each employee/ consultant who is taking prescribed medication to inform his physician of his job duties and to inform his supervisor of any such medication, which would restrict the employee in performing work duties in a safe and efficient manner.

4.7 Work Preparation

Before commencing work, the project engineer/manager and the contractor shall meet with the representative of the project resident engineer and the Construction Safety Administrator to discuss and review the Contractors Safety Program in relation to the UTA CSSP.

Demolition work shall be conducted in accordance with 29 CFR 1926, Subpart T. Prior to initiating demolition activities, the following survey and plan shall be accomplished:

- a. An engineering survey, by a competent person, of the structures to determine the layout, condition of framing, floors, walls, foundation, and underpinnings. The potential for building damage or collapse and existence of other potential or real demolition hazards shall be part of the survey.
- b. A demolition plan, by a competent person, based on the engineering survey shall be developed which shall include a detailed plan authorizing the procedures for safe demolition and removal of all building materials. Protocol for removal of any hazardous materials from the site shall be included in this plan, based on the hazardous materials survey outlined below.
- c. A hazardous materials survey, by a competent person, shall be conducted. The purpose is to determine if any hazardous materials, chemicals, gases, explosives, flammable liquids, biological, ionizing, or other suspect substances require additional action during demolition. This would include any pipes, tanks, or other equipment containing hazardous materials requiring additional controls.

4.8 Motor Vehicle Operations

4.8.1 Driver's License

Each contractor, subcontractor, or sub-subcontractor or vendor-supplier employee driving a motor vehicle on a UTA job site shall have a valid driver's license and each such motor vehicle shall have a current inspection sticker; if required by the state of registration.

4.8.2 Parking

Employee parking shall be as designated by the Project Resident Engineer. All Contractor, Subcontractor or Sub-Subcontractor vehicles shall enter and exit the site only through authorized control points designated by the Resident Engineer or UTA.

4.8.3 Condition

All construction equipment windshields and side windows shall be cleaned and unbroken. Safety equipment such as head, tail, brake, and clearance lights, etc. shall be kept clean. Back up alarms shall be in working order on all vehicles with limited or restricted driver vision to the rear.

4.8.4 Guarding

Heavy equipment with rotating superstructure such as back hoes and power shovels shall be guarded in such a manner that rotation of the superstructure shall not present danger to pedestrians or infringe into any traffic lane.

4.8.5 Access

The resident engineer may designate access to the job site. The contractor shall have control of the work site during construction and may restrict access to provide safety to the job site, employees, and the public, and in the event of a negative impact on schedule.

4.8.6 Transporting

All passengers shall be transported to and from the site while sitting /riding in seating arranged and designed for passenger travel. All passengers shall wear passive restraints that will require mechanical fastening of seat belts.

4.8.7 Vehicles

- Observe all traffic rules and regulations when driving.
- Do not operate a piece of equipment unless you have been instructed in its use.
- Jobsite speed limit is 10 MPH.

4.8.8 Transporting Employees & Materials

- Employees who operate vehicles on public thoroughfares have valid operator's licenses.
- When seven or more employees are regularly transported in a van, bus or truck, the operator's license is appropriate for the class of vehicle being driven.
- Each van, bus or truck used regularly to transport employees, is equipped with an adequate number of seats.
- Vehicles used to transport employees, equipped with lamps, brakes, horns, mirrors, windshields and turn signals in good repair.
- Transport vehicles provided with handrails, steps, stirrups or similar devices, so placed and arranged that employees can safely mount or dismount.
- A full charged fire extinguisher, in good condition, with at least 4 B/C rating maintained is in each employee transport vehicle.
- When cutting tools with sharp edges are carried in passenger compartments of employee transport vehicles, they are placed in closed boxes or containers which are secured in place.
- Employees prohibited from riding on top of any load, which can shift, topple, or otherwise become unstable.

4.8.9 Company Vehicles

Contractors are expected to abide their corporate policy for company vehicles and their appropriate use. Utah law prohibits the manipulation of cell phones or any other electronic device while driving any vehicle.

4.8.10 Tire Inflation

- Where tires are mounted and/or inflated on drop center wheels a safe practice procedure is posted and enforced.
- Where tires are mounted and/or inflated on wheels with split rims and/or retainer rings a safe practice procedure is posted and enforced. A tire restraining device such as a cage, rack or

other effective means is used while inflating tires mounted on split rims, or rims using retainer rings.

- Each tire inflation hose has a clip-on chuck with at least 24 inches of hose between the chuck and an in-line hand valve and gauge.
- The tire inflation control valve is automatically shut off the airflow when the valve is released.
- Employees strictly forbidden from taking a position directly over or in front of a tire while it's being inflated.

4.8.11 Fueling

- It is prohibited to fuel an internal combustion engine with a flammable liquid while the engine is running.
- Fueling operations done in such a manner that likelihood of spillage will be minimal.
- When spillage occurs during fueling operations, the spilled fuel is cleaned up completely, evaporated, or other measures taken to control vapors before restarting the engine.
- Fuel tank caps replaced and secured before starting the engine.
- In fueling operations there is always metal contact between the container and fuel tank.
- Fueling hoses of a type designed to handle the specific type of fuel.
- It is prohibited to handle or transfer gasoline in open containers.
- Open lights, open flames, or sparking or arcing equipment prohibited near fueling or transfer of fuel operations.
- Smoking prohibited in the vicinity of fueling operations.
- Fueling operations prohibited in building or other enclosed areas that are not specifically ventilated for this purpose.
- Where fueling or transfer of fuel is done through a gravity flow system, the nozzles are of the self-closing type.

4.9 Reporting Accidents, Incidents, and Injuries

All accidents that occur from operations or work performed for the project or other construction contracts on the job site must be verified, investigated, reported, and analyzed as prescribed by this manual.

All contractors, subcontractors, and sub-subcontractors shall instruct their employees and other personnel to follow these procedures if someone is injured; there is property damage or a near miss:

- a. Seek medical assistance for anyone who is injured. The injured employee's supervisor will see that first aid is administered on site if possible.
- b. Except for rescue and emergency procedures, secure the area tightly and quickly. The accident scene shall not be disturbed until the investigating authority officials release it.
- c. Immediately report all accidents or conditions resulting in a fatality, the hospitalization of any employee or property damage estimated in excess of \$1,000 to the contractor's

- superintendent or other person in charge at the job site, and notify the UTA Construction Safety Administrator.
- d. The contractor's safety supervisor, or other designated person, must notify all other parties and report the event as outlined in this manual.
 - e. The local UOSH office (telephone 801 530-6901/fax 801 530-7606) must be notified within twelve hours of an occurrence involving a fatality, disabling, or serious injury to a worker. The UTA Construction Safety Administrator shall be notified within twenty-four hours.
 - f. If advanced medical assistance is necessary, contractors are instructed to send employees injured on site to medical clinics or hospitals as per the contractor's policy.
 - g. First aid cases need not to be submitted as a first report of injury. However, such incidents will be categorized as "non-reporting" and "first aid only" unless the injured employee continues to undergo medical treatment. Employees are responsible for reporting all injuries or occupational illnesses immediately to their employer or immediate supervisor. No supervisor shall decline or refuse to accept a report of injury from a subordinate.
 - h. Except in cases of emergencies, the foreman or immediate supervisor must provide the injured employee with written authorization to seek medical treatment.
 - i. Questions from the news media and others shall be referred to UTA Public Affairs Office.
 - j. In the event an employee of a contractor, subcontractor, or sub-subcontractor is exposed to toxic materials or harmful physical agents, the contractor shall notify the UTA Construction Safety Administrator of the incident and the corrective action taken to eliminate further exposures.
 - k. Only authorized personnel, such as representatives of the UTA Construction Safety Administrator, the insurers, or governmental agencies administering OSHA or UOSH shall be given information pertaining to the accident.
 - l. All accidents and hazardous incidents including near misses shall be reported. These records are to be maintained and made available to UTA Construction Safety Administrator, upon request, and shall include:
 - An in-depth investigation to identify all causes and to recommend hazard control measures;
 - The exact location of each incident shall be noted on the reporting form. The grid location of the project site where the accident occurred shall be used whenever possible.

4.10 Accident Investigation

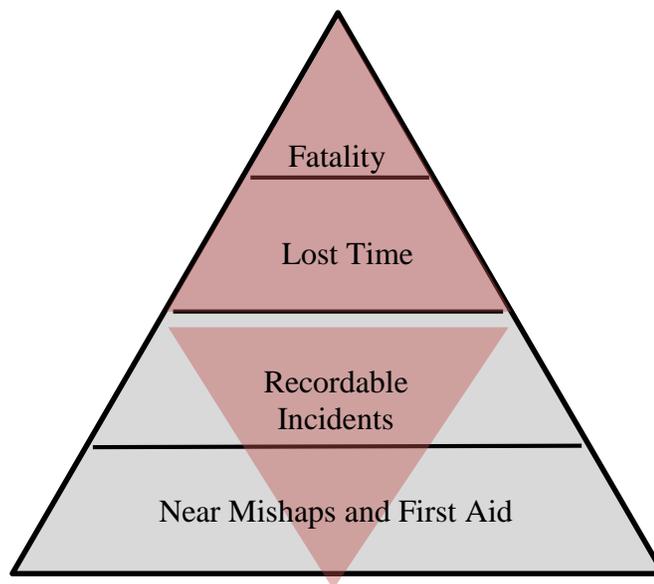
Contractors are expected to conduct their own accident investigations in accordance with their corporate policy. The purpose of these investigations is not to assign blame, but to determine what root cause/contributing factors can be remedied to prevent a repeat of the accident. Contractors are expected to invite UTA Safety Department personnel to the investigation to observe and comment.

4.10.1 Determining What Accidents to Investigate

UTA has adopted the "Red Diamond" model to determine what construction incidents/accidents deserve investigation. This model recognizes that there is a limit to the time and funding available to investigate the smallest accidents. Additionally, it takes into account the most commonly accepted accident model proposed by Herbert W. Heinrich in 1931. Incidents to be investigated are those within the "Red Diamond".

All fatalities and lost-time incidents deserve a full root-cause investigation. Some portion of recordable incidents, first aids, and near mishaps also fall within the red diamond. To determine if a specific accident falls within the parameters, ask the following questions;

- If one factor was different, would this have been a lost time or fatality?
- If it was replayed 100 times, would it result in a fatality?
- “If it hadn’t been for luck, I’d be dead.”



If the answer to any of these questions is yes, then the incident deserves a closer look. For example:

During a facility construction, the masons use scaffolding. The scaffolding has been set up for weeks, but the masons have been on and off the job due to weather and scheduling issues. An electrician is on his knees, finalizing a connection in a nearby outlet when a brick suddenly lands 3’ from him. The brick had obviously fallen from the scaffolding above.

No matter which of the three litmus questions are used, the answer is a resounding yes. As a result, this incident deserves a higher level of scrutiny.

UTA will not prescribe a root cause model or investigation method. This is to be determined by contractor’s policy and investigator’s preference.

4.11 Contractor's Procedures for Emergency Reporting and Response

The contractor's emergency procedures shall be continually reviewed and adjusted by the contractor to provide maximum effectiveness. All such procedures are to be included in the contractor's safety program and coordinated with the project resident engineer.

4.11.1 Supplies

First aid kits shall meet the requirements outlined in 29 CFR 1926.50.

4.11.2 First Aid Training

At least one person shall be available at the job site to render first aid that has valid certificates in first aid training from the American Red Cross, or an equivalent training program that can be verified. Said persons shall affix suitable emblems to the rear of their hard hats for identification.

4.11.3 Planning

Actions to be taken during emergencies should be discussed regularly with the contractor's supervisory personnel and at "tool box" safety meetings.

4.11.4 Emergency Care

If advanced medical assistance is necessary, contractors are to send employees injured on site to the medical clinics or hospitals according to the contractor's policy.

4.11.5 Emergency Numbers

A telephone or the contractor at the job site shall provide other means of two-way communication before construction begins. The telephone numbers of the UTA public spokesperson, UTA Construction Safety Administrator, and resident engineer shall be posted by the contractor at all project site locations.

4.12 Protection of the Public and Property

"Public" shall be construed as including all persons not employed by the contractor, subcontractor, or any tier sub-subcontractor.

4.12.1 Precautions

In addition to the safety requirements identified within the specific contract documents, the following precautions are required:

- a. The contractor shall take all necessary action to prevent injury to the public or property damage.
- b. Work shall not be performed in any area occupied or in use by the public unless specifically permitted by the contract or in writing from the project resident engineer.
- c. When it is necessary to maintain public use of work areas involving sidewalks, entrances to buildings, lobbies, corridors, aisles, stairways, and vehicular roadways, the contractor shall protect the public with appropriate guardrails, barricades, temporary fences, overhead protection, temporary partitions, shields, and adequate visibility. Such protection shall guard against harmful particles, flying materials, falling or moving materials and equipment, hot or poisonous materials, flammable and explosive atmospheres, flammable or toxic liquids and gases, open flames, energized electric circuits, or other harmful exposures.

- d. Sidewalks, entrances to buildings, lobbies, corridors, aisles, doors, or exits that remain in use by the public shall be kept clear by the contractor of obstructions to permit safe access and egress of the public at all times.
- e. The contractor shall conspicuously post signs and instructional safety signs where necessary. In addition, the contractor shall utilize a signalman to control the moving of motorized equipment in areas where the public might be endangered
- f. Sidewalk sheds, canopies, catch platforms, and appropriate fences shall be provided by the contractor when it is necessary to maintain public pedestrian traffic adjacent to the erection, demolition, or structural alteration of outside walls on any structure.
- g. A temporary fence shall be provided by the contractor around the perimeter of aboveground operations adjacent to public areas except where a sidewalk shed or fence is provided by the contract or as required by subparagraph C above.
- h. Perimeter fences shall be at least six feet high. They may be constructed of wood or metal frame and sheathing, heavy wire mesh, or a combination of both as provided in contract documents. When the fence is adjacent to a sidewalk near a street intersection, at least the upper section of the fence shall be open wire mesh from a point not over four feet above the sidewalk and extending at least twenty-five feet in both directions from the corner of the fence to provide drivers and pedestrians visibility at the intersection.
- i. Hazards to which the public may be exposed shall be barricaded, signed, and illuminated between dusk and sunrise and the servicing contractor shall maintain such protection.
- j. Guardrails shall be made of rigid materials capable of withstanding a force of at least two hundred pounds applied in any direction at any point in their structure. Their height shall be approximately forty-two inches. Top rails and posts may be two inches by four inches dressed wood or equal material. Vertical posts shall not be over eight feet apart.
- k. Barricades meeting UTA requirements shall be provided by the contractor where sidewalk sheds, fences, or guardrails as referenced above are not required between work areas and pedestrian walkways, roadways, or occupied buildings. Barricades shall be secured against accidental displacement and shall be maintained in place except where temporary removal is necessary to perform the work. When a barricade is temporarily removed, a watchman shall be placed at all openings.

4.13 Noncompliance

If the UTA Construction Safety Administrator notes any noncompliance with this manual, or the contractor's safety program, or is advised of such noncompliance by others or by a governmental agency with the authority to enforce safety regulations, the UTA Construction Safety Administrator shall perform the following:

- a. Notify the contractor of the noncompliance and of the corrective action required. This notice, when delivered to the contractor or the contractor's representative at the job site shall be deemed sufficient notice of the noncompliance. Immediate corrective action is required of the contractor.
- b. Exercise the right to issue a suspend-work order stopping all or part of the work if the contractor fails or refuses to take corrective action within the time specified in the notice. At resident engineer's option, the order will remain in effect until satisfactory corrective action has been taken.

- c. Deny any claim or request from the contractor for equitable adjustment for additional time or money on any suspend-work order issued under these circumstances.
- d. Require the removal from the job site of any employee, subcontractor, sub-subcontractor, or piece of equipment that is deemed to be unsafe.

4.14 Notice of Noncompliance with Safety and Health Regulations

All serious injuries and accidents, including a potential for a fatality or serious injury, shall be reported immediately to the UTA Construction Safety Administrator or the resident engineer.

- a. When violations of the job site safety requirement are observed, the UTA Construction Safety Administrator will inform the contractor orally and when determined as necessary. The UTA Construction Safety Administrator shall issue a notice of noncompliance to the contractor.
- b. The failure of contractor's safety supervisor to secure and maintain safety performance shall subject such personnel to removal from the job site. Personnel who are denied job site access for noncompliance with safety requirements, at the UTA Construction Safety Administrator's request, will not be granted job site access to the UTA site for other services of work.

4.15 Non-Performance

The contractor's safety supervisor or other authorized personnel shall be replaced by the contractor at the direction of the project resident engineer for nonperformance of his or her safety/security duties at no additional cost to the project.

4.16 Failure to Correct Unsafe Conditions

If the contractor fails to correct the conditions described in the noncompliance notice within the time specified, a second noncompliance notice shall be issued.

Should the contractor fail to correct the safety violation which creates a hazard for persons or property, the resident engineer can perform, or cause to be performed, the necessary work and back charge the contractor or take any other action provided in the contract.

Failure to reach agreement, or failure to correct the violation, shall be documented, and the matter referred to the resident engineer for resolution with the contractor's senior management.

If an "imminent" danger or loss of property condition exists, the resident engineer shall have authority to shut down contractor's work until correction of said condition is made.

Contractor superintendents, who fail to control the actions of their employees regarding safety, are subject to suspension from the job site.

5.0 Security Requirements

5.1 Security on the Job Site

Contractors shall be responsible for the security of their own property and equipment in their care, custody, and control while working on a UTA job site. Site security shall be coordinated with UTA to ensure any concerns are addressed prior to the start of any construction. UTA does not assume any responsibility for any stolen or damaged equipment, property, or building material. Ultimately, the contractor is responsible for providing security commensurate with local risks. UTA's Manager of Security as well as UTA's Chief of Police should be consulted with during the project planning and design phases to ensure all security needs are addressed before any equipment or material arrives on a job site. The contractor will be required to maintain secure work sites, material storage sites, and office facilities. Provision of security requirements will be for the protection of both the UTA property and the property of the contractor from theft, vandalism, pilfering, or other destructive activities, as well as for protection of personnel. Although some Business Units employee Facility Security Guards, these guards are tasked with providing security for operational maintenance and operations facilities supporting UTA revenue service and will not be tasked to secure any construction activity, equipment, or material.

The following UTA policies may provide more information to resolve unique situations:

- Corporate Policy 6.1.15: Contractor Badging and Background Checks: Details who is eligible for a contractor badge and the mechanisms to issue this type of badge
- Corporate Policy 4.3.6: Visitor Access: Provides guidance to employees and managers on the requirement of visitor access into UTA business units and facilities
- Corporate Policy 4.1.4: Security Initiatives: Provides additional requirements to employees on visitor access control procedures as well as the correct method of displaying employee, contractor, and visitor badges.

The minimum requirements for the contractor's security program will identified in the contract documents. The approved contractor's security program may include both active and passive security measures such as the following:

5.1.1 Contract Security Services

Contract Security is recommended in vulnerable areas where the threat of vandalism, theft, and pilferage is high. There are several contract security companies in the Salt Lake Valley who offer low cost facility security during times of increased risk (non-operations hours such as weekends and at night). One security guard is recommended for small and medium construction jobs. Larger jobs with more equipment and material may require more than one guard.

5.1.2 Cameras

Cameras serve as both a deterrent as well as an investigative tool following a security incident. Due to several legal factors, "dummy" cameras are not authorized on UTA property or construction sites. If used, cameras should be recorded through a local DVR or by other means. If used, cameras should be placed around perimeters as well as around equipment storage sites where the risk of theft is high. If existing UTA cameras are installed on the construction site, footage may be retrieved for the purposes of an investigation. Requests for the footage must go through the proper procedures. The UTA Transit Police are the best point of contact.

5.1.3 Provisions for entry control

Proper entry control is designed to ensure no unauthorized personnel are allowed to enter a construction site. This can be achieved through administrative procedures such as visitor logs or through infrastructure such as proper fencing, gates, and choke points. Other access control methods include standardized safety vests with company logo, a badging system, or a process for reporting unknown workers on a construction site to the job superintendent.

5.1.4 Fencing

Adequate site fencing is strongly recommended when feasible. It will not be realistic in all circumstances to erect temporary security fencing. Where it is feasible, fencing serves to deter theft, trespassing, and pilferage. When used, it is recommended that fencing be 8 foot, chain link, and semi-permanently fixed to the ground.

5.1.5 Site Lighting

Studies suggest that proper perimeter and area lighting will deter criminal activity. If used, it is recommended that perimeter lighting be a minimum of 3 Foot Candles and area lighting a minimum of 2 Foot Candles. Check local municipalities to ensure these light levels do not violate and codes or statutes.

6.0 Hazard Analysis

6.1 Preliminary Hazard Analysis

Each construction project that requires input from a professional service (architect or engineer) undergoes a design review process. Part of this process is the development of Preliminary Hazard Analysis or PHA. A Safety and Security Working Group (SSWG) reviews the PHA and determines if the risk is acceptable or should be mitigated.

Once the project has been turned over to UTA for pre-revenue operations, the operators and operational safety administrator take over the hazard assessment. This is referred to as the Operational Hazard Assessment or OHA. Further description of the PHA, OHA, TVA, and SSWG are in the UTA TASP.

Contractors should have an awareness of the PHA-OHA process. Throughout the project, the SSWG may tour the site without notice as long as the individuals are properly attired and briefed. Additionally, the SSWG can make recommendations via the PHA to the UTA Project Manager that may result in a change order or directive.

6.2 Job Safety Briefings

Prior to starting a new or unfamiliar task, the contractor is responsible for performing a Job Safety Briefing with employees. This briefing should familiarize everybody with the task, tools, techniques, procedures, and risks or hazards. The Superintendent or Foreman usually leads these briefings and may include these briefings in the Toolbox/tailgate talks.

Appendix A: Applicable Governmental Agency and Industry Safety Standards

The contractor shall comply with the safety requirements and provisions of the following agencies, codes, laws, and regulations:

- Federal Railroad Administration (FRA) Safety Rules and Regulations as applicable
- 29 CFR 1910 and 29 CFR 1926 Occupational Safety and Health Act
- 49 CFR 214 Roadway Worker Protection Act
- MUTCD - Manual on Uniform Traffic Control Devices
- NEC - National Electrical Code
- NFPA - National Fire Protection Association
- NIOSH - National Institute of Occupational Safety and Health
- ANSI - American National Standards Institute
- UBC - Uniform Building Code
- IBC – International Building Code, when applicable
- EPA - US. Environmental Protection Agency (EPA)
- UOSH - UTAH OSHA R574
- 49 CFR 655
- 49 CFR 40
- Chapter 38 of the Utah Code

Appendix B: Monthly Safety Report/Contract Document

Contractor's Name: _____ Contract No. _____

Period Covered (Month and Year): _____

Name of Contractor's Safety Manager: _____

Item	Contract Total This Month	Contract Cumulative Total for Year
No. Hours Worked (Construction & Office)		
No. Lost Workday Cases (Entire Shift Lost)		
No. Restricted Workdays (Partial Shift Lost or reassigned to "light" duty)		
No. Cases Requiring Medical Attention		
No. Cases Recordable		
No. Fatalities		
No. On-Site Safety Meetings		
No. On-Site Equipment Accidents		
No. Vehicle Accidents, including off-site accidents by Contractor vehicles working on Contract		
No. New Workers on Site During Period		
No. Workers Safety Orientation		
No. Supervisor/Foreman Safety Sessions		
No. Site Safety Inspections		

1. Describe circumstances surrounding each lost workday and each fatality case.

2. Describe actions taken and/or planned to prevent reoccurrence.

Signed for the Contractor:

(Signature)

(Signature)

(Printed or typed name) Safety Manager

(Printed or typed name) Project Manager

(Date)

(Date)

Appendix C: PPE Visual Guide

 Mandatory PPE unless otherwise noted below is Hardhat, Safety Glasses, Safety Vest & Steel/Composite Toe Work Boots (Rail crews are also required to wear metatarsal foot protection at all times)									
Drills									
PEL=Permissible Exposure Limit									
	 (If above PEL)	 (if flying debris)		 (If above PEL)	 CAUTION DO NOT WEAR JEWELRY, LOOSE CLOTHING OR LONG HAIR <small>(When operating this equipment)</small>				
	 (If above PEL)	 (if flying debris)		 (If above PEL)	 CAUTION DO NOT WEAR JEWELRY, LOOSE CLOTHING OR LONG HAIR <small>(When operating this equipment)</small>				
				 CAUTION DO NOT WEAR JEWELRY, LOOSE CLOTHING OR LONG HAIR <small>(When operating this equipment)</small>					
Saws									
	Concrete							 (If above PEL)	 CAUTION DO NOT WEAR JEWELRY, LOOSE CLOTHING OR LONG HAIR <small>(When operating this equipment)</small>
	Metal								 CAUTION DO NOT WEAR JEWELRY, LOOSE CLOTHING OR LONG HAIR <small>(When operating this equipment)</small>
			 (If above PEL)	 CAUTION DO NOT WEAR JEWELRY, LOOSE CLOTHING OR LONG HAIR <small>(When operating this equipment)</small>					
						 CAUTION DO NOT WEAR JEWELRY, LOOSE CLOTHING OR LONG HAIR <small>(When operating this equipment)</small>			
						 (If above PEL)	 CAUTION DO NOT WEAR JEWELRY, LOOSE CLOTHING OR LONG HAIR <small>(When operating this equipment)</small>		
						 CAUTION DO NOT WEAR JEWELRY, LOOSE CLOTHING OR LONG HAIR <small>(When operating this equipment)</small>			
					 CAUTION DO NOT WEAR JEWELRY, LOOSE CLOTHING OR LONG HAIR <small>(When operating this equipment)</small>				
Pneumatic (jack hammers, chipping guns, rivet busters, impact wrenches, scalars, tie tampers, nail guns)									
					 (if visible dust)		 (If above PEL)	 CAUTION DO NOT WEAR JEWELRY, LOOSE CLOTHING OR LONG HAIR <small>(When operating this equipment)</small>	
				 Anti-vibration	 (if visible dust)		 (If above PEL)	 CAUTION DO NOT WEAR JEWELRY, LOOSE CLOTHING OR LONG HAIR <small>(When operating this equipment)</small>	
									
									

Grinder										
Percussion	(hammers, hammer drills, rotary hammers)									
								If above PEL)		
Router										
Welding Machine									(if above PEL)	
Cutting Torch									(if above PEL)	
Compactors										
										
Vacuum Truck										
Concrete Vibrator										
Pressure Washer										