University of Texas at San Antonio
Environmental Health Safety and Risk Management

Construction

Safety

Plan

i Signature Page

This original version of this procedure manual has been reviewed for regulatory compliance and best management practices by the undersigned individuals and is hereby adopted for use and compliance by all employees at all University of Texas at San Antonio owned or operated facilities.

PRINTED NAME	SIGNATURE	TITLE	DATE
J. Brian Moroney	*Signature on file*	Director of EHS&RM	_____
Richard M. Garza	*Signature on file*	Safety Manager	_____
Keith Kewley	*Signature on file*	Asbestos Mgt. Coordinator	_____

ii. Emergency Procedures and Contacts

A. If an accident and/or injury occur on a construction project at UTSA and emergency medical services are needed to care for a victim, the UTSA Police Department MUST be notified immediately to coordinate getting EMS to the scene. Phone 458-4911

B. If an accident and/or injury should occur on a construction project at UTSA, the Office of Environmental Health Safety and Risk Management must be notified as quickly as possible.

C. To report a construction related accident and/or injury, OR if you have any questions or concerns regarding this Construction Safety Program for UTSA, please contact the following:

1. Director of Environmental Health Safety and Risk Management

   Brian Moroney
   Phone: 210-458-6225
   Cell: 210-887-9296
   Email: brian.moroney@utsa.edu

2. Safety Manager – Environmental Protection & Construction Safety

   Richard M. Garza
   Phone: 210-458-5808
   Cell: 210-452-7253
   E-mail: richard.garza@utsa.edu

3. Coordinator for Asbestos, IAQ, and Construction Safety

   V. Keith Kewley
   Phone: 210-458-4267
   Cell: 210-325-7870
   Email: keith.kewley@utsa.edu

4. Safety Specialist II (for Asbestos, IAQ, and Construction Safety)
   John Burns
   Phone: 210-458-6625
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5. EHSRM Front Desk

   Nancy Woodward
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iii. Table of Contents

I. OVERVIEW & PURPOSE

A. The University of Texas @ San Antonio is committed to providing a safe environment for all students, faculty and staff. The University is constantly growing and changing, with construction, renovation and maintenance projects occurring regularly throughout the three campuses. The rules and procedures incorporated within this Plan are designed and implemented for the prevention of injury, property damage, fire damage, and occupational illness. No function of our organization is so critical as to require or justify a compromise of safety.

B. The Construction Safety Plan is in place to ensure a safe environment at all times. It allows operations to be conducted in a manner that provides protection for all individuals, including University faculty, staff, students, visitors, and contractors.

C. All supervisory personnel, including UTSA employees and independent contractors, must accept their personal responsibility for the prevention of accidents and for conducting all operations under their direction in a safe and efficient manner.

D. The effectiveness of this safety program depends upon the active participation and cooperation of all employees performing work at UTSA.

II. SCOPE

A. This Construction Safety Plan applies to all UTSA owned, leased, or operated properties. All UTSA faculty, staff, and students are required to comply with all aspects of this Program.

B. Independent contractors performing work on a University construction, renovation or maintenance project is obligated to perform all work in a safe manner. Every contractor, regardless of whether the company is the primary vendor or performing as a subcontractor, is obligated to conform to the requirements of the Federal Occupational Safety and Health Act (OSHA) of 1970 and all additions and revisions thereto, as well as all other applicable Federal, State, and Local requirements and the UTSA Construction Safety Plan.

III. PERIODIC REVIEW

A. This Plan will be reviewed periodically, but not less than every 3 years, and may be modified / edited as necessary to ensure information included is accurate and the University maintains compliance with applicable regulations.

IV. RESPONSIBILITIES

A. Office of Environmental Health Safety And Risk Management (EHSRM)

1. Responsible for conducting training on construction and physical safety topics.

2. Responsible for advising University departments and personnel on construction and physical safety issues.

3. Responsible to inform independent contractors of the UTSA Construction & Physical Safety Program and explain the University's expectations in regards to safety.

4. Responsible for conducting inspections of work shops on campus (Facilities, Arts, etc), and tools (installed and hand) for appropriate safety guards and equipment.

5. Responsible for assisting departmental supervisors in conducting a job hazard analysis as appropriate. Refer to section VII of this plan.

6. Responsible for conducting random safety inspections on construction, renovation and maintenance projects and reporting safety deficiencies to appropriate personnel.

    a. Safety deficiencies for UTSA Facilities personnel will be reported to appropriate Director and supervisor.

    b. Safety deficiencies for independent contractor employees will be reported to the appropriate Director, overseeing supervisor, or construction project coordinator.

        1. ***The Director of EHSRM will have final decision regarding safety issues at UTSA, to include owned, leased, and operated properties***.

B. Facilities

1. Responsible for ensuring maintenance and construction personnel are properly trained for the duties and tasks each will be responsible to perform.

2. Responsible for adhering to safety procedures in this plan, and enforcing safety procedures with Facilities personnel.

3. Responsible to assist with enforcing safety procedures with independent contractors working on UTSA projects.

4. Responsible for notifying EHSRM when construction and renovation meetings are scheduled; including but not limited to:

    a. pre-bid and/or pre-proposal meeting

    b. pre-construction meetings

    c. routine construction project review and progress meetings

C. Faculty, Staff, and Students

1. Responsible to adhere to all warning signs for construction zones and not enter these zones unless accompanied by qualified Facilities of EHSRM personnel

2. Responsible for ensuring proper safety equipment, including personnel protective equipment, is available and used as required and / or needed.

D. Independent Contractors and Vendors

1. Responsible for ensuring proper safety equipment, including personnel protective equipment, is available and used by their personnel, as required and / or needed.

2. Responsible for ensuring that all employees performing work on UTSA project site are properly trained for all tasks and duties each will perform.

3. Responsible for compliance with all applicable EPA, OSHA, and other Federal, State, and local rules and regulations, regardless of whether such rule or regulation is mentioned or included in the UTSA Construction Safety Plan manual or checklist.

V. PROGRAM ENFORCEMENT

A. All construction, renovation and maintenance projects will randomly be inspected by EHSRM staff trained and knowledgeable in construction safety requirements. Safety deficiencies will be noted and forwarded to the appropriate persons, as outlined in this Plan.

B. The staff of EHSRM, Facilities, and the independent contractor(s) are expected to work in unison to provide for the safest means of delivery of the project while maintaining the safest possible working and educational environment.

C. The Coordinator for Construction Safety and the Construction Project Coordinators will have the authority to instruct contractors to correct violations of safety regulations or unsafe conditions.

D. Should a dispute arise regarding a safety issue, the Director of EHSRM will have the final decision regarding safety issues at UTSA, to include owned, leased, and operated properties.

VI. ACCIDENT INVESTIGATION & REPORTING REQUIREMENTS

A. Copies of all accident reports must be filed with the EHS&RM within 24 hours (one [1] business day) of occurrence on any construction project.

B. For all fatalities, cases requiring hospitalization, or possible lost-time injuries, the Office of Environmental Health Safety and Risk Management *shall be notified immediately.*

C. Any accident or incident resulting in a lost-time injury, fatality, damage to property or equipment, a serious "near miss," or the recognition of a potential hazard to health and environment will be investigated by a team consisting of the Coordinator for Construction Safety, the University Risk & Life Safety Manager, and the Construction Project Coordinator assigned to the project; as well as others as may be assigned to this investigative team by either the Director of EHSRM, the Director for Engineering and Construction Services (w/ Facilities), and/or University administration.

D. For any incident that requires an investigative team, the investigative team shall submit a preliminary report for such incident within five (5) working days. This report shall be submitted to the Director of EHSRM and the Director for Engineering and Construction Services, who will then forward to the appropriate University administration personnel.

VII. JOB HAZARD ANALYSIS

A. Whenever a non-routine project or task is necessary, a job hazard analysis shall be performed to evaluate the potential risk of injury to personnel and bystanders. The analysis will assess each aspect of a task and address the items which could result in an injury to an individual. This involves an evaluation of the mechanics of the operation, identifying what can go wrong, and how to do it safely. EHSRM personnel will work with Facilities supervisors to provide a job hazard analysis to identify any medical surveillance or personal protective equipment that may be required.

VIII. ALCOHOL, DRUGS AND OTHER PROHIBITED ARTICLES

A. The University of Texas at San Antonio prohibits the use, possession, distribution, or sale on the project premises, facilities, or work places of any of the following:

1. alcoholic beverages
2. intoxicants
3. illegal drugs
4. drug paraphernalia

B. Employees must not report for duty or perform work while under the influence of any drug, alcoholic beverage, or intoxicant. Employees on the construction project premises may be subject to removal if found to have such prohibited articles or are under the influence of any of the above substances.

IX. HOUSEKEEPING OF THE CONSTRUCTION PROJECT SITE

A. “Housekeeping” refers to the cleanliness of the project site.

B. All employees (UTSA and/or contractors) shall keep trash, debris, remnant parts, and other items picked up on a regular – at least daily – basis.

C. Trash, debris, remnant parts, and other items shall not be allowed to stockpile.

D. Trash, debris, remnant parts, and other items shall not be allowed to remain in walk paths.

E. Tools and equipment shall be appropriately stored when not in use.

X. ASBESTOS

A. No asbestos material shall be used, installed, or carried onto University projects without prior written approval of the Office of Environmental Health Safety, and Risk Management.

B. The UTSA Asbestos Management Plan, in its entirety, shall apply to all construction, renovation and maintenance work performed on University property, whether owned, leased, and operated.

C. All asbestos-related activities must comply with the *Texas Asbestos Health Protection Rules*.

XI. WATER INTRUSION AND MOLD REMEDIATION

A. The UTSA Water Intrusion and Mold Remediation Plan, in its entirety, shall apply to all construction, renovation and maintenance work performed on University property, whether owned, leased, and operated.

B. All mold remediation activities must comply with the *Texas Mold Assessment and Remediation Rules*.

C. Any employee (UTSA and/or contractor) who observes water intruding into a building, or who discovers water damaged building materials caused by uncontrolled water within the building, shall notify EHSRM immediately.

XII. COMBUSTION ENGINES / INDOORS

A. Internal combustion engines must not be operated inside of buildings without prior approval, in writing, by the Environmental Health Safety, and Risk Management Office.

XIII. COMPRESSED AIR

A. Compressed air shall not be used to clean dust from an individual's clothes or body; the air could enter the body at openings or breaks in the skin, resulting in a serious injury.

B. When air pressure is used to clean chips and dirt from material, ensure that eye protection is worn and that the air stream is directed away from employees and other persons.

C. The maximum pressure that may be used for this purpose is 30 psi.

XIV. COMPRESSED GAS CYLINDERS

A. Valve protection caps shall be in place and secured when transporting, moving, and storing compressed gas cylinders.

B. Cylinder valves shall be closed when work is finished, when cylinders are empty, or being moved.

C. Compressed gas cylinders shall be secured, either roped or chained, in an upright position at all times, except when being hoisted or carried.

D. Oxygen and gas regulators shall be in proper working condition while in use. Hoses shall be periodically inspected and replaced if abrasions or cuts are discovered.

E. Compressed gas cylinders of acetylene, propane, etc. not intended for immediate or continuing use shall not be stored in buildings. Oxygen cylinders in storage shall be separated from fuel-gas cylinders or combustible materials (especially oil or grease), a minimum distance of twenty (20) feet or by a noncombustible barrier at least five (5) feet high having a fire-resistance rating of at least one-half (1/2) hour.

F. If a leak develops in a cylinder, it shall be removed immediately to a safe location.

G. Cylinders shall be permanently marked or stenciled to identify the type of gas in the cylinder.

H. Use of highly flammable, explosive, or toxic gases (hydrogen, chlorine, formaldehyde, etc.) must be approved, in advance and in writing, by the Environmental Health Safety, and Risk Management Office.

XV. Cranes

A. This section of this Construction & Physical Safety Program shall be reviewed and discussed by the contractor's project superintendent and the equipment operator(s) prior to the delivery, set-up, or use of any cranes, to ensure safe operation by competent, authorized personnel.

B. Rated load capacities, operating instructions and special hazard warnings shall be conspicuously posted on all equipment and shall be visible to the operator while at the control station.

C. An illustration of hand signals to crane operators shall be posted at the job site.

D. Inspections of Cranes

1. Annual and Set-up

    a. Cranes shall be inspected annually and periodically in accordance with the manufacturer's recommendations and as required by OSHA regulations. Annual inspections must be performed by an approved independent inspection service. Each of these inspections shall be documented. Upon request, Contractor shall provide a copy of the most recent annual inspection conducted on the equipment used, or to be used, at UTSA.

    b. Upon completion of set-up on-site, all cranes shall be thoroughly inspected for proper assembly and proper function of all parts prior to making any lifts.

2. Daily

a. Daily inspections shall be performed by a competent person checking for the following items:

1) All control mechanisms for maladjustment interfering with proper operation.

2) All control mechanisms for excessive wear of components and contamination by lubricants or other foreign matter.

3) All safety devices for malfunction.

4) Deterioration or leakage in air or hydraulic system.

5) Crane hooks with deformation or cracks; sling and choker for broken strands, fraying or kinking.

6) Electrical apparatus for malfunctioning, signs of excessive wear, dirt and moisture accumulation.

E. Recordkeeping for use of Cranes

1. All records pertaining to crane inspections shall be kept with the crane or in the contractor's site field office. If during any safety inspection the operator or supervisor cannot produce the required crane inspection sheets, the crane shall be shut down as soon as possible and inspected immediately.

F. Selection and Erection of Cranes

1. The operator is responsible for selecting a crane of sufficient capacity and with the appropriate design features to be suitable for the intended lift(s). The operator shall comply with the manufacturer's specifications and limitations applicable to the operation of any and all cranes and derricks.

2. Where manufacturer's specifications are not available, the limitations assigned to the equipment shall be based on the determination by a qualified engineer competent in this field. Such determinations shall be documented and recorded and retained at the job site.

3. Once the appropriate crane has been selected, the operator is responsible for obtaining the appropriate permits to transport the equipment to the job site. The delivery of the crane shall be scheduled by the operator, the Project Superintendent, and any local agencies having jurisdiction over routes of transportation and any utilities that may need to be cleared.

4. At the job site, the operator will be responsible for the following:

a. Proper placement of the crane in relation to the load to be handled and the landing area so as to obtain the best-rated lift capacity.

b. Leveling of the crane to within one (1) degree of level and rechecking the level a minimum of three (3) times during the 8-hour work shift.

c. The proper placement and use of outriggers for all lifts except where the manufacturer permits otherwise for assembly of boom only.

d. The determination of stable or unstable ground or footing. Should any additional equipment such as floats, cribbing, timbers, or other structural members be needed, they shall be of proper design and sufficient to uniformly distribute the load.

e. The installation and maintenance of crane swing radius protection.

G. Load Ratings for Cranes

1. The operator will be responsible for making the following determinations:

   a. The weight of all auxiliary handling devices such as hooks, hoist blocks, headache balls, rigging, and any items added to the load end of the rigging shall be considered as part of the total load.

   b. If the manufacturer's specifications require that the weight of the load cable also be considered part of the total load weight, then the operator shall do so.

   c. The operator shall use the weight included on the Bill of Lading when determining total load weight.

H. Ground Stability for use of Cranes

1. Total imposed load, supporting surface area, bearing pressure, and soil stability shall all be considered when determining ground stability.

2. The Operator shall be responsible to ensure that all appropriate considerations have been taken for the safe operation of the crane, derrick, or other load bearing equipment.

I. Crane Operator Qualifications

1. Cranes shall only be operated by the following personnel:

   a. Designated operators licensed by an approved agency and/or union.

   b. employees in training, but only under the direct supervision of the designated operator (see XIII, I,1,a)

   c. Inspectors certified to operate a crane.

   d. Test and maintenance personnel authorized to operate a crane. No load shall be lifted by test or maintenance personnel unless meeting other operator criteria listed.

   e. No persons, other than the operator, shall be in or on the crane during operations. Only exception is supervisors whose duties require their presence, i.e. licensed operator supervising an operator in training.

J. Crane Operating Procedures

1. The operator shall be familiar with the crane, its care, the operator's manual, and the load charts.

2. Upon request, the operator shall demonstrate his/her ability to determine total load weight and its relationship to the crane and charts.

3. At no time shall a crane be loaded beyond its rated capacity.

4. Loads shall be attached to the crane hook by means of slings, shackles, or other approved devices. Hooks used for lifts greater than two (2) vertical feet shall have safety latches or safety wires to prevent slings from coming off hook

5. The operator shall have final responsibility and control over the crane operations. Whenever there is any doubt as to safety, the operator shall have the authority to refuse to handle a load until corrections for safety are completed.

6. The operator shall not, at any time while in control of the crane, do any the following:

    a. Engage in any practice that may divert his or her attention from crane operations.

    b. Operate the crane if physically or mentally unfit, or if taking prescription drugs that may impair judgment.

    c. Respond to any unclear signals or signals given by persons other than designated signalman; with the exception of a stop signal (a stop signal may be given by any person in work area).

    d. Permit trainees to make initial lifts on newly set-up cranes.

    e. Suddenly accelerate or decelerate a moving load.

    f. Swing loads over personnel

    g. Permit side-loading of boom. (Cranes shall not be used to drag a load sideways.)

XVI. CUTTING & WELDING

A. Hot Work Permit Program

1. A Hot Work Permit must be acquired from the Office of Environmental Health Safety and Risk Management prior to performing any cutting, welding, or other related hot work at any of the UTSA campuses and/or satellite locations. This applies to all hot work, whether performed by UTSA personnel and/or independent contractors. (Exception: routine laboratory work involving use of Bunsen burners and/or other approved means of heat are regulated via the Laboratory Safety Program and therefore exempt from this program.)

2. Hot Work is defined as follows:

    a. the use of any gas, electric arc, or flammable liquid, or any combination thereof, in the performance of welding or cutting

b. Any work utilizing a torch or other flame producing device, i.e. for heating and removing paint and floor tiles, heating and soldering pipes, etc.

c. use of a tool or equipment that may produce sparks; i.e. a grinder used to cut, de-burr, or polish metal

3. All hot work shall be performed in accordance with applicable OSHA requirements, NFPA 51BStandards, Uniform Fire Code, and other requirements established by the University of Texas System (UTS).

4. Fire extinguisher(s) shall be on-site at all times during the performance of hot work, and shall be kept well maintained and fully charged.

5. The Hot Work permit is a multi-copy form. (Copy of Hot Work Permit)

   a. The personnel conducting the hot work will be given the "back" copy, which must be kept at the location of the hot work. When all hot work is complete, this copy must be signed by the individual responsible for the work and returned to the Construction Safety Coordinator.

   b. The Construction Safety Coordinator will retain the other copies of this form.

6. Procedure for issuance of a Hot Work Permit:

   a. For UTSA performed work, the Facilities personnel assigned to perform the work, or his supervisor, shall contact the Construction Safety Coordinator (or his/her designee) and provide details for the hot work; i.e. location, scheduling, and type of work.

   b. For work being performed by a contractor, the Facilities Project Coordinator shall contact the Construction Safety Coordinator (or his/her designee) and provide details for the hot work; i.e. location, scheduling, and type of work.

   c. The Construction Safety Coordinator (or his/her designee) will inspect the work area following the checklist included on the permit form. Additional safety requirements will be added if warranted, based on the site-specific conditions.

   d. UTSA personnel and contractors are responsible for requesting hot work permits in advance so as to provide EHSRM sufficient time to schedule the inspection of the site and issue the permit.

   e. Should unforeseen hot work become necessary and the Construction Safety Coordinator (or his designee) is not available, the Facilities Project Coordinator or maintenance shop supervisor may conduct the inspection and issue the permit, after acquiring permission from the Construction Safety Coordinator or his supervisor.

7. Permit Validity

   a. Hot Work permits will specify the location for which it is issued and may not be moved to another location without approval from EHSRM.

   b. Projects involving more than one level of an occupied building may require multiple permits, i.e. one for each level. This will be determined during the inspection of the site.

c. Permits for most maintenance work will be issued for the one or two days that the work will entail.

d. Long-term construction and maintenance projects

1) For new and/or unoccupied buildings, permits may be issued for the duration of the project; however, all long-duration permits become invalid once UTSA personnel move into and occupy any portion of the building. A new permit must then be requested and issued.

2) For existing occupied buildings, including tie-ins associated with a new building, permits may be issued for a maximum duration of 30 days. If the work is not complete, a new permit must then be requested and issued.

8. Compliance with all requirements established in this document shall be the responsibility of all personnel (UTSA and contractors) performing hot work at any UTSA facility.

XVII. ELECTRICAL SAFETY

A. General Requirements

1. All electrical wiring and equipment shall be a type listed by Underwriters Laboratories (UL®), Factory Mutual Engineering Corporation (FM), or other recognized test or listing agent for the specific product and/or application.

2. All installations shall comply with the National Electrical Safety Code (NESC) or the National Electrical Code (NEC).

3. The UTSA Facilities, Electrical Supervisor shall be responsible to ensure all work performed by UTSA electricians comply with the applicable codes.

4. When work is performed by an independent contractor, it is that contractors responsibility to ensure that all work performed by the contractors electricians complies with the applicable codes.

5. The UTSA Facilities, Electrical Supervisor shall be responsible to inspect electrical work performed by contractors, and to report any issues not in compliance with the applicable codes to the designated Construction Project Coordinator and EHSRM.

6. All work must be performed by personnel familiar with code requirements and qualified for the class of work being performed.

7. All equipment and circuits involved in the scope of work should be de-energized prior to the start of any work, whenever possible.

8. When it is necessary to work on energized lines and equipment, workers must use rubber gloves and other protective equipment and/or use hotline tools meeting the provisions of the American National Standards Institute (ANSI), and at least two (2) persons must be assigned to work on energized lines.

9. Transformer banks and high voltage equipment shall be protected from unauthorized access, with warning signs posted at entrances.

10. Wiring shall be installed so as to avoid sharp corners and edges, projections, and/or pinching.

11. Extension cords may be used only for temporary, short-term purposes. Extension cords shall be heavy duty with three-prong grounding type plug and receptacle. Extension cords must be protected from damage, including foot traffic. Extension cords must not be permitted to create a tripping hazard.

12. Electrical panel covers shall be installed and in place at all times prior to and upon completion of work.

13. All circuits shall be marked for voltage and area of service.

B. Temporary Wiring

1. All temporary wiring shall be effectively grounded in accordance with the National Electric Code, Articles 305 and 310.

2. All switches shall be enclosed and grounded.

3. Panel Boards shall be closable and lockable.

4. All 120 volt, 15 and 20 amp receptacle outlets shall use Ground Fault Circuit Interrupters (GFCI).

5. All circuits shall be marked for voltage and area of service.

C. Overhead Lines

1. Any overhead wire shall be considered energized until the official designated representative confirms that it is not energized *and* the line has been visibly grounded.

2. The UTSA Facilities, Electrical Supervisor shall be responsible for coordinating work near overhead lines, when the work is to be performed by UTSA electricians. be responsible for coordinating work near overhead lines. This coordination must include the designated UTSA Facilities - Construction Project Coordinator and EHSRM

3. When work is performed by an independent contractor, the contractors project superintendent shall

XVIII. Electrical Power Tools & Equipment

A. Each tool, cord, plug, attached cap, and receptacle ends, and any equipment connected by cord and/or plug, shall be visually inspected for external defects each day prior to use. Tools and equipment with defects shall not be used.

B. Non-current carrying metal parts of portable and/or plug-connected tools and equipment shall be either grounded OR double insulated.

C. Non-current carrying metal parts of fixed electrical tools and equipment, including motors, generators, frames and tracks must be grounded.

D. Electrical tools and equipment shall not be used in hazardous locations without prior written approval from EHSRM.

E. Electrical cords on power tools shall not be used to hoist or lower the tool.

F. Effective grounding of the path from circuits, equipment, structures, and conduits to ground must be:

1. Permanent and continuous.

2. Have ample carrying capacity to conduct safely the maximum potential current load.

G. When driven rod electrodes are used for grounding, the resistance to ground should not exceed 25 ohms. When the resistance is not as low as 25 ohms, then two or more electrodes connected in parallel shall be used.

H. Extension cords may be used only for temporary, short-term purposes. Extension cords shall be heavy duty with three-prong grounding type plug and receptacle. Extension cords must be protected from damage, including foot traffic. Extension cords must not be permitted to create a tripping hazard.

I. Temporary Wiring

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5. All circuits shall be marked for voltage and area of service.

XIX. LIGHTING AND ILLUMINATION

A. All corridors, offices, aisles, ramps, runways, stairs, shops, and storage areas where work is in progress (normal daily work and/or construction work) shall be lighted with natural and/or artificial illumination that meets or exceeds the minimum illumination requirements governed by applicable law.

B. When temporary lighting is used, the lighting fixtures must be equipped with guards to prevent accidental contact with the bulb.

C. When temporary lighting is used, the lighting fixtures shall not be suspended by their electrical power cords unless the cords and lights are designed for this means of suspension.

XX. SMALL TOOLS

A. All hand tools, power tools, and equipment shall be maintained in a safe condition.

B. The supervisor for each Facilities maintenance shop shall be responsible for inspecting the small tools used by that shop and a routine basis.

C. The Project Superintendent for an independent contractor shall be responsible for ensuring all small tools used on the project site are maintained in a safe condition.

D. The use of unsafe hand tools, power tools, and equipment at UTSA is prohibited.

E. Wrenches, including pipe, socket, and adjustable, shall not be used if jaws are sprung and allow slippage.

F. Impact tools, such as chisels and wedges, shall be kept free of "mushroomed" heads and blades.

G. On tools with wooden handles, the handles shall be kept free of splinters and splits, and kept tight on the tool.

H. Pneumatic powered and/or hydraulic powered tools shall be secured to the hose by a positive means, such as safety clips or retainers, to prevent the tool from becoming accidentally disconnected or expelled

1. Pneumatic powered and/or hydraulic powered tools such as nailers, staplers, or similar equipment provided with automatic feed, which operate at more than 100 psi pressure at the tool. shall have a safety device on the muzzle to prevent accidental discharge of a fastener. This safety device shall require the muzzle to be in contact with the work surface before engaging the trigger to eject a fastener.

2. All hoses, pipes, valves, filters, and fittings used with pneumatic powered and/or hydraulic powered tools must meet or exceed the manufacturer's safe operating pressures.

I. All hoses exceeding ½-inch diameter shall have a safety device at the source of supply that will reduce pressure in the event of hose failure.

J. Equipment that operates at 1,000 psi or greater must be equipped with a safety device that will prevent the pulling or engaging of the trigger without first releasing the safety mechanism.

K. Fuel powered tools and equipment shall be shut off while being serviced, refueled, or maintained.

L. Fuel powered tools and equipment shall not be used within enclosed areas or spaces unless sufficient ventilation is provided to disperse concentrations of toxic gases.

M. Appropriate personnel protective equipment (PPE) shall be utilized at all times when operating tools and equipment.

XXI. ELEVATED WORK

A. General Requirements

1. A ramp, ladder or stairs shall be provided to access any working platform elevated 19 inches or more.

2. Appropriate ladder and stairway fall protection systems shall be installed and functional prior to personnel beginning work activities on the platforms serviced.

3. A double-cleated ladder, or two or more ladders, shall be provided when ladders are the only means of access or exit from a working platform with 25 or more workers,

4. The point of access and exit (ramps, ladders, or stairways) shall be kept clear to permit free passage of personnel.

5. Personnel working from ladders shall comply with all applicable Fall Protection requirements.

B. Ladders

1. All portable ladders shall conform to the latest edition of the applicable safety codes: ANSI A14.1 Wood ladders; ANSI A14.2 metal ladders; ANSI A14.3 fixed ladders; ANSI A14.4 job-made ladders; ANSI A14.5 reinforced plastic ladders.

2. All portable ladders shall be of sufficient length to enable the user to reach their work without climbing on top or next to top step.

3. All portable ladders shall be placed in a location that enables the user to reach their work without reaching, stretching, or otherwise assuming a hazardous position.

4. Portable ladders shall be equipped with non-skid safety feet.

5. Portable ladders shall be inspected prior to each use; ladders with broken or damaged parts shall not be used.

6. Portable metal ladders shall not be used in locations where they may become energized.

7. When job-made ladders are to be used, they shall be constructed in compliance with OSHA regulations.

8. All portable ladders in use shall be tied, blocked, or otherwise secured to prevent accidental displacement.

C. Scaffolding

1. Scaffolding shall be designed, built, and inspected by competent personnel trained for this task.

2. Scaffolding shall comply with all applicable OSHA regulations, including being equipped with guardrails, mid-rails, toe boards, and access ladders. *(Basic requirements below, but not all-inclusive)*

a. Top edge of the top rail shall be 42 inches (+/- 3 inches) above working/walking surface.

b. Mid-rail shall be halfway between top rail and working/walking platform.

c. Guardrails shall be secured to withstand a 200-pound horizontal force.

d. Toe board shall be minimum 4 inches in height.

1) Personnel working from moving, swinging, or hanging scaffold shall use safety harnesses, lanyards, and lifelines secured to the building or other substantial anchor above the level of work.

D. Bricklayer's Scaffold (Masonry Scaffold)

1. All equipment and materials used in masonry and concrete work shall meet the latest edition of ANSI-A10.9

2. Personnel working more than 6 feet above any adjacent working surface shall utilize appropriate fall protection equipment.

3. Personnel shall not work above protruding reinforcing steel unless such steel is protected to eliminate impalement hazards.

E. Floor and Wall Openings

1. Where there is a potential for personnel to fall from or through an opening in the floor, wall, roof or perimeter edges, such openings shall be protected with guardrails and warning signs.

2. If an opening in the floor will be covered, such covering must be capable of supporting the maximum intended floor load, installed so as to prevent accidental displacement, and clearly marked as a covering.

F. Ramps

1. Ramps shall not exceed a 10:1 length-to-height ratio.

2. Ramps shall be designed and constructed to support the maximum potential weight load.

3. Ramps shall be a minimum of 42 inches in width and have curbs installed on the edges to prevent a loaded cart from falling over the edge.

G. Temporary Stairs

1. During construction, stairs shall be provided on all structures that are two or more floors, or more than 20 feet in height.

2. Stairs shall be installed as quickly as possible following placement of upper floor.

3. Stairs, including all integral part thereof, shall be free of hazardous projections.

4. If permanent steel stairs having hollow pans are to be used prior to placement of concrete, the pans shall be filled with wood boards or other solid material.

5. Stairs shall be kept clear of all debris and other loose materials that may create a trip-hazard.

6. Temporary stairs shall have a landing at least 30 inches wide for every 12 feet of vertical rise.

7. Step height and width shall be uniform throughout any flight of stairs.

XXII. FALL PROTECTION

A. Safety Harness and Lifelines

1. When work is performed by UTSA Facilities, the Supervisor for each maintenance shop shall be responsible for issuing and requiring the use of safety harnesses, lanyards, and lifelines whenever an employee is exposed to a potential fall of 6 feet or greater.

2. When work is performed by an independent contractor, the Supervisor for the contractor shall be responsible for issuing and requiring the use of safety harnesses, lanyards, and lifelines whenever an employee is exposed to a potential fall of 6 feet or greater.

3. Safety belts are prohibited for use as fall protection.

4. All safety harnesses, lanyards, and lifelines shall meet or exceed OSHA standards.

5. Lanyards shall be a minimum of ½ inch nylon or equivalent, with a nominal breaking strength of 5,400 pounds.

6. Maximum length to arrest a fall shall be no greater than six (6) feet.

7. Lifelines shall have a nominal breaking strength of 5,400 pounds and shall be secured above the point of operation to the building structure or an anchorage point capable of supporting a minimum dead weight of 5,400 pounds.

B. Safety Nets

1. Safety nets may be used only when ladders, scaffolds, platforms, and other means of safe access are impractical.

2. Safety nets may be used only upon written approval from UTSA EHSRM.

3. Safety nets shall be provided by the contractor intending to use them, and must be installed in place and tested prior to any elevated work beginning.

4. Safety nets shall extend a minimum of 8 feet beyond the edge of the work surface where personnel are exposed to the fall, and shall be installed as close under the work surface as possible, but never more than twenty-five (25) feet below the exposed work surface.

5. Safety nets shall be hung with sufficient clearance to prevent personnel from contacting the surface or structures below. Clearance height shall be tested by impact load testing prior to any elevated work beginning.

6. Safety nets shall have a mesh size not exceeding six inches by six inches (6" x 6").

7. Nets shall meet or exceed minimum impact resistance of 17,500 foot pounds, and must be certified and labeled by the manufacturer.

8. Edge ropes shall have a minimum breaking strength of 5,000 pounds.

C. Temporary Hoists and Elevators

1. Temporary personnel elevators and material hoists shall be constructed, installed, and maintained in compliance with the manufacturer's instructions and all applicable regulations.

2. Personnel shall not be allowed to ride on material hoists.

3. No elevators or hoists shall be used for the movement of materials or personnel until inspected and certified by a competent individual trained and qualified for this type of equipment.

XXIII. EXCAVATIONS AND TRENCHING (Large)

A. Any channel, gutter, or ditch greater than four (4) feet in depth but eight (8) feet or less in width is identified as a trench.

B. Any channel, gutter, or ditch greater than four (4) feet in depth and also greater than eight (8) feet in width is identified as an excavation.

C. A trenching plan and/or excavation plan, approved by a professional engineer experienced in regional soil/ground types, must be submitted by the contractor and approved by both UTSA Facilities and UTSA EHSRM prior to beginning any related work. The contractor must comply with all requirements outlined by OSHA 29 CFR 1926.650-.652 and Appendices A – F.

D. Routes for all trenches and/or excavations must be reviewed by UTSA Facilities for potential interference from existing underground utilities.

E. Trenches five (5) feet in depth and greater shall have shoring and/or sloping walls to protect personnel from cave-in. Requirements for shoring and/or sloping of walls shall be approved by a professional engineer experienced in regional soil/ground types.

F. All materials removed from a trench or excavation shall be placed at least one (1) foot from the edge of the dig.

G. Ladders or other means of egress shall be provided in each trench / excavation, spaced with not more than twenty-five (25) feet of lateral travel to reach an egress point.

H. Any project site with an open trench or excavation must be secured with a rigid barricade, such as metal fencing, to prevent unauthorized personnel from entering the work site. Any waiver of this rule must be approved by EHSRM.

I. *Blasting is strictly prohibited on any and all projects at UTSA.*

XXIV. EXCAVATIONS AND TRENCHING (Small)

A. A ditch, or other dirt-work, that is less than four feet in depth and less than eight feet in width may be identified as a small-scale trenching or excavation. Examples: small trenches for electrical cable, plumbing piping, irrigation piping, etc.

B. All small-scale trenching and/or excavation projects must be secured with a visible barricade, such as plastic fencing or barrier tape, to prevent unauthorized personnel from walking through work site.

C. Routes for all small-scale trenches and/or excavations must be reviewed by UTSA Facilities for potential interference from existing underground utilities.

D. Blasting is strictly prohibited on any and all projects at UTSA.

XXV. BATTERY CHARGING

A. Vehicle Batteries

1. Batteries shall only be charged in locations designated specifically for this purpose.

2. Ventilation must be provided to ensure diffusion of the gases from the battery to prevent the accumulation of an explosive mixture.

3. Vent caps shall be kept in place to avoid electrolyte spray.

4. Eye wash and emergency shower equipment must be nearby and functional for use should an exposure occur.

B. General Use Batteries

5. Only batteries specifically designed and labeled as rechargeable shall be recharged.

6. NO ATTEMPT SHOULD BE MADE TO RECHARGE ANY BATTERY NOT SPECIFICALLY LABELED AS RECHARGEABLE. This could cause the battery to explode.

7. Only chargers designed for the type and size battery to be charged shall be used.

XXVI. HAZARD COMMUNICATION AND MATERIAL SAFETY DATA SHEETS

E. Material Safety Data Sheets (MSDS) shall be provided to EHSRM for all products used at any UTSA facility.

F. The UTSA Hazard Communications Program will apply, in its entirety, on all construction and maintenance projects performed at any UTSA facility.

XXVIII. FIRE PREVENTION AND CONTROL

a. All fires, regardless of how minor or if burned out prior to discovery, shall be reported to the RHSRM.

b. All personnel (UTSA and/or contractor) shall take all precautions necessary to prevent fires caused by their operations.

c. Flammable liquids shall not be stock piled on a construction or maintenance site.

d. Flammable liquids shall be stored in approved containers, and the containers stored in a flammables cabinet.

e. No smoking or use of other open flames within 50 feet of where flammable liquids or gases are used, stored, or transferred.

f. Combustible trash and debris shall not be allowed to accumulate.

g. If cutting, welding, grinding, or other work utilizing an open flame is necessary, the requirements of the Hot Work Program shall apply.

h. If water supply to any fire suppression system must be temporarily turned off for construction, then EHSRM personnel must be notified to implement the Fire Suppression System Impairment process.

i. Any fire watch required due to a construction project causing a water / chemical agent shut off, or alarm cut off, of more than 4 hours duration will be the responsibility of the contractor to provide personnel or reimburse UTSA for use of their personnel.

Appendix A

Construction & Physical Safety

Inspection Checklist

Office of Environmental Health Safety & Risk Management

Construction & Physical Safety Inspection Checklist

Date: _____ Project Name or WO#: _____

UTSA Project Coordinator or Supervisor: _____

Name of Primary Contractor (if applicable): _____

A. General Safety	B. Environmental Issues	C. Scaffolding / Elevated Work
• All contractor employees have completed project orientation • Appropriate training; i.e. Haz-Com, scaffold, fall protection, Lock-out Tag-out, PPE, trench safety, etc. • Housekeeping of jobsite Slip, trip, and fall hazards minimized • Proper PPE (hardhat, eyewear, etc) • Construction signs posted	• Asbestos risks reviewed • Hazardous Materials properly stored • SWPPP in place • Dust Control in use • Noise Control in use • Ventilation adjusted (if needed) • Adequate lighting in all areas	• Properly constructed • Straight and square • Appropriate base-width OR secured to building • Fully planked work decks • Guardrails and toeboards • Access ladder • IS ADDITIONAL FALL PROTECTION REQUIRED?
D. Barricades	**E. Fall Protection**	**F. Excavations & Trenches**
• Perimeter of jobsite • Excavations • Drop Zones • Equipment Operating Zones, including crane swing radius • Exposed electrical or other hazards	• Guardrails & toeboards where possible • Floor & wall penetrations covered • Roof edges/leading edges protected • Harness/lifelines being properly used, including appropriate secure point • Proper ladders for task • Proper use of ladder and/or scaffold	• Excavation/trench demarcated, including barricades and signs • Existing underground utilities / infrastructure checked / marked • Proper shoring in use • Ladders provided (>6' deep)
G. Fire Safety	**H. Electrical**	**I. Cutting, Welding (Hot Work)**
• Egress clear and marked • Smoke/Heat detectors, sprinklers, and pull stations unobstructed • Designated Fire Watch in use if alarm and suppression system compromised • Hot Work Permit issued and displayed	• Lockout/Tagout procedures being followed • Extension cords used for temporary services only, and not overloaded • GFCI being used	• Hot Work Permit issued and displayed • Fire Extinguishers present and charged • Fire Blankets used, as needed • Gas cylinders secured

Comments: (use back of form if necessary)

_____
_____
_____
_____
_____
_____

_____ _____ _____

Signature UTSA Safety Representative Printed

Revised 10-20-2007

Appendix B

Asbestos

Project Review

Checklist

Asbestos Project Review Checklist

Work Order Number: _____ Date Created:_____

Project Name or Location:_____

Project Coordinator or Supervisor:_____

DURING DESIGN OR PRIOR TO START OF PROJECT

Is this building "ASBESTOS FREE"? YES NO
(See list of asbestos-free buildings on page 2)
(If YES, then no further questions are required to be answered)
Signatures of Project Coordinator, Asbestos Coordinator, and Work Control Supervisor required

If NO, then the Scope of Work[1] must be reviewed by the Asbestos Coordinator (or designated representative) and the following questions must be answered. .

Will any known (or suspect) asbestos-containing materials be disturbed[2]? YES NO

Have "Asbestos Notes" been added to the Work Order? YES NO

Will an Asbestos Consultant[3] be required? YES NO

Consultant hired:_____

Will an Asbestos Abatement Contractor[3] be required? YES NO

Contractor hired:_____

UPON COMPLETION OF ASBESTOS WORK

Has Project Coordinator been informed that asbestos work is complete? YES NO

Has Work Control been notified that asbestos work is complete? YES NO

Have Project Documents been received from Asbestos Consultant? YES NO

Have Project Documents been received from Abatement Contractor? YES NO

Signature of Asbestos Coordinator:_____Date:_____

Signature of Project Coordinator:_____ Date_____

Signature of Work Control Supervisor:_____ Date:_____

ASBESTOS FREE BUILDINGS AT UTSA

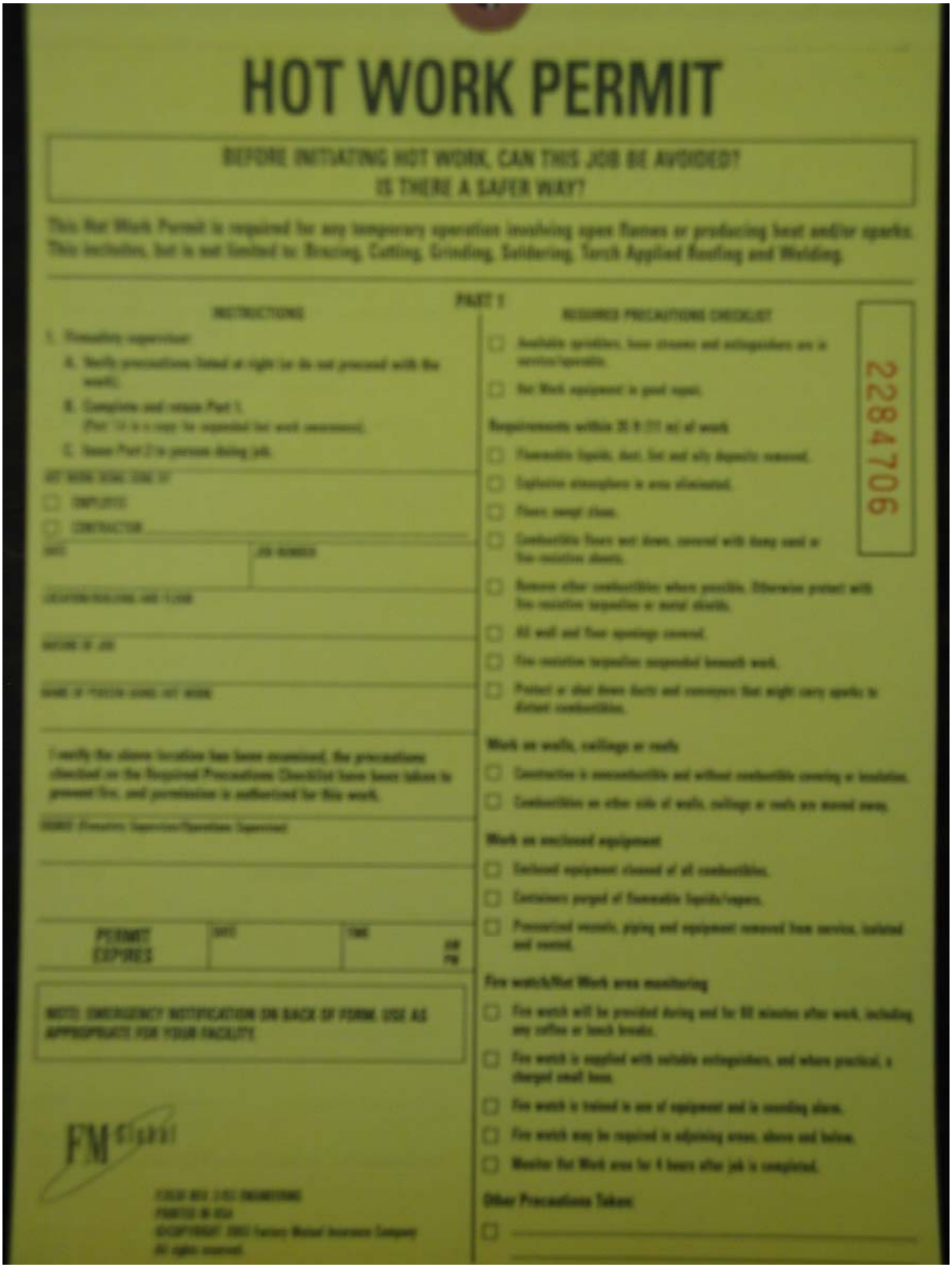
- Business Building
- University Center Expansion (Phase II)
- Bioscience Building
- Engineering Building
- Bioscience & Engineering Technology Building
- Child Development Center
- Recreation and Wellness Center (Phase I)

- Business Services Annex
- Support Services Buildings A, B, C & D
- Main Building
- Facilities Annex
- Frio Building
- Buena Vista Building
- Durango Building
- Monterey Building

1 If the Scope of Work is modified or revised in any way after being reviewed by the Asbestos Coordinator, the modified / revised Scope of Work must be re-submitted to the Asbestos Coordinator for review again.
2 The term ‘disturbed’ refers to being cut, drilled, broken, moved, demolished, or removed from the current existing location and/or condition.
3 As defined by the *Texas Asbestos Health Protection Rules*.

Appendix C

Copy of Hot Work Permit Form



HOT WORK PERMIT

BEFORE INITIATING HOT WORK, CAN THIS JOB BE AVOIDED?
IS THERE A SAFER WAY?

This Hot Work Permit is required for any temporary operation involving open flames or producing heat and/or sparks. This includes, but is not limited to: Brazing, Cutting, Grinding, Soldering, Torch Applied Roofing and Welding.

PART 1

INSTRUCTIONS

1. Foreman/supervisor:
   A. Verify precautions listed at right (or do not proceed with the work).
   B. Complete and retain Part 1.
      (Part 1A is a copy for expanded hot work assessment).
   C. Issue Part 2 to person doing job.

☐ EMPLOYEE
☐ CONTRACTOR

DATE | JOB NUMBER

LOCATION/BUILDING AND FLOOR

NATURE OF JOB

NAME OF PERSON DOING HOT WORK

I verify the above location has been examined, the precautions checked on the Required Precautions Checklist have been taken to prevent fire, and permission is authorized for this work.

SIGNED (Foreman/Supervisor/Operations Supervisor)

PERMIT EXPIRES | DATE | TIME AM PM

NOTE: EMERGENCY NOTIFICATION ON BACK OF FORM. USE AS APPROPRIATE FOR YOUR FACILITY.

FM Global

FACILITY ID #

REQUIRED PRECAUTIONS CHECKLIST

2284706

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

Requirements within 35 ft (11 m) of work:

☐ Flammable liquids, dust, lint and oily deposits removed.
☐ Explosive atmosphere in area eliminated.
☐ Floors swept clean.
☐ Combustible floors wet down, covered with damp sand or fire resistive sheets.
☐ Remove other combustibles where possible. Otherwise protect with fire resistive tarpaulins or metal shields.
☐ All wall and floor openings covered.
☐ Fire resistive tarpaulins suspended beneath work.
☐ Protect or shut down ducts and conveyors that might carry sparks to distant combustibles.

Work on walls, ceilings or roofs:

☐ Construction is noncombustible and without combustible covering or insulation.
☐ Combustibles on other side of walls, ceilings or roofs are moved away.

Work on enclosed equipment:

☐ Enclosed equipment cleaned of all combustibles.
☐ Containers purged of flammable liquids/vapors.
☐ Pressurized vessels, piping and equipment removed from service, isolated and vented.

Fire watch/Hot Work area monitoring:

☐ Fire watch will be provided during and for 60 minutes after work, including any coffee or lunch breaks.
☐ Fire watch is supplied with suitable extinguishers, and where practical, a charged small hose.
☐ Fire watch is trained in use of equipment and in sounding alarm.
☐ Fire watch may be required in adjoining areas, above and below.
☐ Monitor Hot Work area for 4 hours after job is completed.

Other Precautions Taken:

☐ _____

Appendix D

LOCK-OUT / TAG-OUT PROGRAM

G. OSHA requirements (Code of Federal Regulation (CFR) 29 CFR 1910.147 and 29 CFR 1910 – Subpart S) require that a Lock Out/Tag Out Program be implemented as a means of

protecting employees from the unexpected start up or energy release of machinery or equipment while it is being repaired or serviced.

H. Lock-Out/Tag-Out procedures apply to all of the following systems:

1. Steam Boilers
2. Air Handlers
3. Vehicles
4. Hydraulics
5. Pneumatics
6. Electrical
7. Plumbing
8. Pumps
9. Motorized Equipment

I. Lock-Out/Tag-Out procedures apply whenever any of the following activities is performed on machinery and equipment:

1. Lubrication
2. Cleaning
3. Adjustment
4. Re-tooling
5. Unjamming
6. Repairing
7. Inspecting
8. Servicing

J. Only approved lock-out/tag-out devices shall be used to secure the machinery, equipment, or system. Approved devices shall completely disable the system from operation, and include signage stating who and when the device was installed.

K. Procedures for implementing Lock-Out/Tag-Out

1. Shutting down and locking-out

    a. Notify all personnel that may be affected by this lock-out, including but not limited to co-workers and contractors.

b. Locate all energy sources and/or points of activation for the system or equipment to be locked-out.

c. Install lock-out/tag-out device, which includes locking all points of activation and securely installing a tag on all locks stating who and when the lock was installed. If more than one person id involved in this lock-out, each person should install their own lock-out device and tag.

d. Release any stored energy; i.e. electrical switches, steam valves, hydraulic valves, pneumatic valves, circuit breakers, springs and weights, etc.

e. Ensure the system or equipment is completely deactivated by operating switches and/or valves.

2. Restoring power and returning to service

a. Ensure that all tools and parts have been removed

b. Replace all safety guards

c. Remove all lock-out devices

1) A lock-out device should be removed only by the person who installed it or his supervisor.

d. Reactivate the energy source

e. Check the system or equipment for proper operation.

Appendix D

Confined Space Entry Program