



Contractor Safety Guidebook

**Louisiana State University Health Sciences Center
New Orleans, Louisiana**

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LSUHSC Health Sciences Center
Contractor Safety Guidebook

I hereby acknowledge that I have received a copy of the LSUHSC Contractor Safety Guidebook.

Name: _____

Title: _____

Company: _____

Signed: _____

Date: _____

Return completed acknowledgement to the Construction Coordinator.

The Louisiana State University Health Sciences Center New Orleans (LSUHSC) is committed to providing for the protection of its personnel, students, visitors, facilities and surrounding environment through the implementation of a comprehensive safety program.

Contractors must provide safe workplaces and implement their own safety programs. This guidebook is intended to assist in coordinating LSUHSC facilities and contractor operations during construction and renovation projects.

Contractors are required to comply with all applicable Federal, State, and Local laws and also follow safe work practices for construction trades. Some of these regulations and safe work practices are outlined in this guidebook. Contractor management and supervision must thoroughly review their own work practices and workplace hazards and then provide employees all the necessary training and equipment for their safety.

Due to the wide variety of construction operations, it is not feasible to outline every conceivable applicable regulation and work practice in this guidebook. Contractors will follow all OSHA and any other applicable regulations when conducting work at LSUHSC.

EMERGENCY NUMBERS: call 911 or LSUHSC Police at (504) 568-8999.

TABLE OF CONTENTS

I.	SAFETY PROGRAM OBJECTIVES	5
II.	BASIC SAFETY RULES	5
III.	SPECIAL PROCEDURES AND WORK PERMITS	6
	1. Hazard Communication and Chemical Safety	6
	2. Hot Work, Fire Alarm Systems and Fire Protection	7
	3. Underground Utility Location	8
	4. Utility Service Interruptions	8
	5. Lockout/Tagout	8
	6. Confined Space Entry Program	9
	7. Cranes	10
	8. Accidents	10
	9. Emergency Procedures	10
	10. Asbestos Management	10
	11. Construction in Occupied Buildings	12
IV.	GENERAL SAFETY PROCEDURES	14
	1. General Inspections and Training	14
	2. Medical Services and First Aid	14
	3. Facilities, Equipment, Tools and Vehicles	15
	4. Education and Training	15
	5. Hand and Power Tools	15
	6. Personal Protective Equipment (PPE)	15
	7. Electrical	17
	8. Fall Protection	19
	9. Flammable and Combustible Liquids	19
	10. Welding, Cutting and Heating	20
	11. Housekeeping	21
	12. Storage	21
	13. Ladders	21
	14. Flaggers	22
	15. Motor Vehicles and Mechanized Equipment	22
	16. Mobile Scaffolds	23
	17. Pneumatic Power Tools	23
	18. Compressed Air	23
	19. Compressed Gas Cylinders	24
	20. Excavation and Trenches	24
	21. Vehicle-Mounted Elevated and Rotating Work Platforms	24
	22. Performing Work in Parking Garages and on Streets	25
	23. Accident Recordkeeping and Reporting Requirements	25

I. SAFETY PROGRAM OBJECTIVES

All contractors must have a safety and health program that complies with all government regulations and is designed to protect people, property, and the environment. This guidebook is a summary of safety information, requirements, and regulations that construction contractors shall follow when conducting work on any LSUHSC campus. It is intended to assist in providing a safe, healthy and comfortable environment for employees, patients, visitors and construction workers during renovation, demolition or new construction projects.

Major objectives of a contractor's safety and health program are to:

1. Protect employees, students, visitors, property, and the environment from potential hazards.
2. Provide a safe and healthful workplace free from recognized hazards.
3. Comply with all government safety, health, and environmental standards.
4. Cooperate with building occupants and others involved in the work area to maintain a safe, healthful and comfortable workplace.

II. BASIC SAFETY RULES

1. Vehicles must observe the posted speed limit.
2. Obey all posted warnings.
3. Smoking is prohibited on the LSUHSC campus.
4. Fighting or horseplay is prohibited on LSUHSC property.
5. Firearms are not allowed on LSUHSC property.
6. Contractors must remain in designated areas at all times and use approved travel routes into and out of the site.
7. Work areas must be maintained in an orderly manner that does not block exits or traffic through the work area. Debris shall be kept clear from work areas, passageways, and stairs, in and around buildings and other structures. Clean work areas daily of trash and dust.
8. Any operation which partially or fully blocks any walkway, sidewalk or street must be approved in advance by the Construction Coordinator.
9. Contractors will gain approval in advance from the Construction Coordinator for any operation that has the potential to cause a hazard to or create poor Indoor Air Quality (IAQ) for LSUHSC personnel. Approvals will only be granted for which an acceptable hazard/IAQ control plan has been developed.

III. SPECIAL PROCEDURES AND PERMITS

The following special procedures are specific to LSUHSC. Although some topics listed below are covered by regulations, they received special interest in research and academic areas. The work permits and policies referenced below are to assist in coordinating contractor work activities and LSUHSC activities affecting the same systems. Failure to request and obtain approval of these work permits in advance may result in a delay in work progress, possible contract deficiencies, and may place future contracts in jeopardy.

1. Hazard Communication and Chemical Safety ([29 CFR 1910.1200](#)).

- a. To ensure that all contractor employees understand the hazards of the chemicals they are exposed to and how to properly protect themselves, each contractor must establish and maintain an effective hazard communication program. The program must comply with 29 CFR 1910.1200 and contain:
 - A written hazard communication program
 - An inventory of chemicals
 - MSDSs for all chemicals at the site
 - Labeling of all containers, and other warnings
 - Employee training
- b. Contractors must have Safety Data Sheets (SDSs) of all hazardous products being used at the job site. These SDSs must be readily available for review by the Construction Coordinator and the Environmental Health and Safety Department.
- c. Aerosol painting is not permitted inside any LSUHSC facility.
- d. Asbestos containing materials. Upon discovery of materials that may contain asbestos (Presumed Asbestos Containing Material, PACM) the contractor will stop work immediately as to not disturb the material and contact the Construction Coordinator to restrict access to the area. The Construction Coordinator will then contact the Environmental Health and Safety Department to commence testing if required.
- e. Lead awareness. Before operations on any paint that may contain lead, the contractor must contact the Construction Coordinator. The Construction Coordinator will then contact the Environmental Health and Safety Department for testing.
- f. Silica. Crystalline silica, also called free silica, is an odorless crystalline solid that is found as a dusty air contaminant in many industrial surface materials and processes. It is the cause of the lung disease silicosis. Silica dust consists of solid particles generated by work processes such as concrete saw cutting, grinding, mixing, drilling, and crushing. It may also present a hazard when disturbing materials such as ceramic tile, rock, CMU, roofing, or similar materials.

- i. When work includes concrete cutting, crushing, or other operations that mechanically abrade concrete and mortar, use of engineering and work practice controls and/or use of respiratory protection to prevent employee exposure to silica dust shall be implemented.
 - ii. The contractor shall establish a controlled work area whenever unprotected personnel may be exposed to airborne silica dust that can reasonably be expected to be in excess of applicable exposure limits.
- g. Fluorescent light bulbs and PCB-containing ballast disposal.
- i. Personnel removing fluorescent light bulbs are responsible for examining the bulb to determine if the bulb should be recycled due to mercury vapor and lead content and must remove bulbs in accordance with environmental regulations. Green end caps or green writing indicates the bulb is environmentally friendly and these bulbs can be disposed of with other construction wastes.
 - ii. Personnel removing fluorescent ballasts are responsible for examining the ballast to determine if it contains PCBs (Polychlorinated Biphenyls) and disposing of such ballasts in accordance with environmental regulations.
- h. Plumbing work.
- i. If liquid mercury is discovered in plumbing, stop work and notify the Construction Coordinator.
 - ii. If contractor personnel have a high risk of exposure to human blood and/or body fluids, they must be trained in bloodborne pathogen awareness and have documentation of Hepatitis B vaccinations.

2. Hot Work, Fire Alarm Systems, and Fire Protection ([29 CFR 1926 Subpart F](#)).

- a. Hot work involving the use of open flames, welding apparatus, and spark producing equipment can result in fires and explosions. Contractors must obtain written approval in accordance with LSUHSC [Hot Work Permit Policy](#) before commencing such work.
- b. Contractor shall submit a Hot Work Permit application at least three working days before performing hot work (temporary operation involving open flames or producing heat and or sparks, including but not limited to grinding, cutting, brazing, soldering, torch applied roofing and welding) or any work that will create or will have the potential to create dust.
- c. The Construction Coordinator will forward the Hot Work Permit to the Facility Services Electronics Shop, Environmental Health and Safety (EH&S), and University Police.
- d. The Electronics Shop will review the permit and grant work authorization. If necessary, the fire panel will be temporarily disabled while hot work is occurring. The contractor is responsible for maintaining a fire watch in the areas that the fire panel has been disabled.

- e. The fire watch shall be familiar with fire watch duties, as described in the Appendix G of [EHS 400.07 Fire Safety Policy](#), and shall be trained to operate the approved fire extinguisher
 - f. The Electronics Shop will post the Hot Work Permit on the fire panel prior to the start of any hot work, and will remove the permit once work is complete.
 - g. All contractor personnel must be familiar with Appendix A of [EHS 400.07 Fire Safety Policy](#), to ensure they know how to report a fire, and are aware of available egress routes and the building's area of refuge.
 - h. All work will be accomplished while ensuring the building meets all requirements of the NFPA Life Safety Code 101. Any work that temporarily alters or fully or partially blocks egress routes cannot commence without prior approval of the Construction Coordinator.
 - i. All combustible material shall be cleared from the hot work area. Fire resistant guards, curtains, or shields shall be used where appropriate.
 - j. Firefighting equipment must be conspicuously located, readily accessible at all items, must be periodically inspected, and must be maintained in operating condition.
 - k. Extinguishers will be provided by the contractor and placed at least every 75 feet.
 - l. In addition to meeting life safety requirements, the contractor shall assess all hot work activities for the potential to contribute to poor IAQ in occupied buildings. As determined necessary, the requirements of Section III.11, *Construction in Occupied Buildings*, shall be implemented. Precautions taken to control contributors to poor IAQ shall be identified in detail adequate to demonstrate effectiveness on the Hot Work Permit.
3. **Underground Utility Location.** Anyone proposing to excavate, dig, bore, tunnel, blast, or disturb the earth in any manner which may damage buried utilities is required to call LA One Call by dialing 811 48 hours prior to digging. This 48-hour notification requirement is mandated by the 1988 Louisiana Damage Prevention Law. In the event of a bona fide emergency, notification must be made directly to Facility Services, University Police and the Environmental Health and Safety Department.
4. **Utility Service Interruptions.** Before any work, involving the planned or possible interruption of utilities such as electric, water, gas, medical gas or steam services, and the contractor must submit the request for the outage to the Construction Coordinator seven days in advance. Utility outages may have to be scheduled before or after normal working hours (8:00 am to 4:30 pm) or on a weekend as to not impact LSUHSC operations.
5. **Lockout/Tagout** ([29 CFR 1926.417](#)) and ([29 CFR 1910.147](#))
- a. The Lockout/Tagout (LOTO) Standard (Control of Hazardous Energy) in 29 CFR 1926.417 and 29 CFR 1910.147 will be followed by all contractors. The OSHA lockout/tagout procedure requires:

- Use of locks and/or tags on isolating devices.
 - Special lockout/tagout procedures for jobs requiring multiple lockout/tagout devices.
 - Contractors must provide their own lockout/tagout equipment.
 - All contractor employees (authorized, affected, and other employees) must be trained by the contractor (or another acceptable training source) on lockout/tagout procedures.
 - Testing or positioning of machines or equipment will be performed only under special procedures per 29 CFR 1910.147 (f).
- b. All contractors will have a written general lockout/tagout program prior to performing such work. Contractors must read and understand the LSUHSC [Lockout Tagout Control Policy](#) which requires the contractor to present a LOTO plan to the Construction Coordinator, who will then submit the plan to EH&S for review. Prior to commencement of the work, the contractor shall make appropriate notification to the affected LSUHSC personnel via the Construction Coordinator. The contractor shall notify the Construction Coordinator upon completion of the LOTO operation. The Construction Coordinator will then notify all affected employees that the LOTO operation is complete.
- c. All contractor employees will be trained by the contractor (or another acceptable training source) concerning the lockout/tagout procedures prior to beginning work at the site. A record will be kept of all employees trained and verification (by exam or other written means) that they understand the training. The training will include the disciplinary actions which will be taken if lockout/tagout procedures are not followed.

6. Confined Space Entry Program ([29 CFR 1910.146](#)).

- a. Confined spaces present serious potential hazards to personnel, including oxygen deficiency, toxic materials, flammable materials, and hazardous energy. Each contractor must establish and maintain an effective confined space entry procedure that complies with OSHA standard 29 CFR 1910.146 when applicable. Contractors who will perform work in confined spaces must present their written confined space program to the Construction Coordinator before commencing with such work.
- b. Contractors will also comply with the LSUHSC [Confined Space Policy](#), which requires contractors performing work in areas with confined spaces to present their Non-Permit or Permit-Required Confined Space Plan to EH&S (via the Construction Coordinator) for review at least five working days prior to commencing work. Once the confined space work is complete, the Construction Coordinator will notify all affected personnel.
- c. Contractors must provide all equipment required for safe entry, including special rescue equipment and air monitoring.

7. Cranes ([29 CFR 1926 Subpart N](#)).

- a. Notify the Construction Coordinator seven calendar days prior to any crane operations. Provide a plan to cordon off the work area to eliminate hazards to those in proximity to the work area, to include a plan for traffic control if required.
- b. Perform inspections of crane and rigging components in accordance with OSHA and the manufacturer's requirements.
- c. Rated load capacities, recommended operating speeds, and special hazards warnings or instructions must be posted on cars and personnel.
- d. Never move suspended loads directly over personnel.

8. Accidents. In the event of an accident, the contractor shall take immediate action to prevent further injury to personnel and/or damage to any property. All accidents (including those that cause property damage only), injuries, and/or illness must be reported to the Construction Coordinator immediately upon stabilizing the accident site. In accordance with the LSUHSC [Incident and Accident Reporting and Investigation Policy](#), the contractor or Construction Coordinator shall also contact EH&S to conduct an accident investigation. If necessary, the contractor site supervisor shall take action or give support to University Police (UP) to secure the site, limit unnecessary access, and preserve evidence until the site is released for normal activity. The DA 3000 form will be used to document the accident.

9. Emergency Procedures. All employees must know, understand, and be able to follow all workplace emergency procedures pertaining to their assignment. Periodic tests, drills, audits, etc. must be conducted to verify employee understanding of these procedures.

- a. Thunderstorms can strike with little warning. Contractors will have procedures in place to ensure the job site is secured prior to inclement weather arriving.
- b. Contractors will ensure equipment and materials are properly secured so that they will not become projectiles in high winds.
- c. All contractor personnel must be familiar with [Fire Safety Policy](#) to ensure they know how to report a fire, and are aware of available egress routes and the building's area of refuge.
- d. In the event of a hurricane, the contractor will be notified when completion of securing the job site is required in accordance with LSUHSC Hurricane Preparedness Procedures.

10. Asbestos Management ([LAC 33.III.27 and 51](#)) and ([29 CFR 1926.1101](#))

- a. Any disturbance of Asbestos Containing Materials (ACM) at LSUHSC facilities must be performed by a state licensed asbestos abatement contractor. All applicable work will be completed in accordance with the requirements of LAC 33.III.27 and 51 and OSHA 1926.1101.

- b. All contractors performing asbestos related work shall have a general written asbestos safety program and project specific work plan prior to performing such work. The project specific work plan shall be written and executed in accordance with the project design specifications developed by the accredited project designer and requirements of the LSUHSC written asbestos management program. Contractors must read and understand the LSUHSC [Asbestos Management Program](#) which requires the contractor to present a project specific written work plan to the Construction Coordinator, who will then submit the plan to the Environmental Health and Safety department for review and subsequent approval by the project designer. The minimum required elements of the written work plan are as follows:
- On multi-employer work sites, the following provisions shall be included:
 - Ensure that the project coordinator has informed other employers' managers or safety representatives on the job site about the nature of the asbestos work prior to the commencement of work, in accordance with the work plan.
 - Discuss with the other employers' managers or safety representatives the existence of and requirements pertaining to regulated areas, and the measures taken to ensure that employees are not exposed to asbestos prior to starting the job.
 - Take steps on a daily basis to ascertain the integrity of the enclosure and/or the effectiveness of the control method relied on to assure that asbestos fibers do not migrate to adjacent areas.
 - All OSHA Class I, II, and III asbestos activities shall be conducted within a demarcated, regulated area supervised by a competent person and accessible only by authorized personnel.
 - Engineering controls and work practices to include HEPA vacuum cleaners, wet methods, and prompt clean up and disposal shall be implemented for all asbestos activities. Local exhaust ventilation equipped with HEPA filtration, enclosure/isolation, ventilation of the regulated area to move airborne contaminants toward a HEPA filtered collection device, and other approved methods shall be implemented to inhibit the spread of released fibers.
 - Employees are required to decontaminate prior to leaving the work area when conducting Class I, II, III, and IV work activities. The work plan shall comply with the decontamination procedures and hygiene practices of the project design specifications.
 - HEPA filtered vacuums shall be used where vacuuming methods are required. Asbestos waste, scrap, debris, bags, containers, equipment, and contaminated clothing shall be collected and disposed of by trained asbestos workers in sealed, labeled, impermeable bags or other similar containers. Dust and debris in an area containing

visibly deteriorated ACM/PACM shall be promptly cleaned up and disposed of by trained asbestos workers using proper procedures.

- The contractor's competent person shall be made to conduct frequent and regular inspections of job sites, materials, and equipment to facilitate ensuring the effective containment of the work area and potential spread of released fibers.
- Copies of LDEQ asbestos contractor/supervisor and worker accreditations for all employees with the potential to perform the subject asbestos related work duties will be made available upon request.

11. Construction in Occupied Buildings (Sheet Metal and Air Conditioning Contractors National Association, IAQ Guidelines for Buildings Under Construction and OSHA 1926). Poor Indoor Air Quality (IAQ) can be a disruption to the normal operations of a facility and, impact the health, comfort, well-being, and productivity of the building occupants.

- a. Contractors conducting construction/renovation activities shall ensure that the IAQ experienced by LSUHSC faculty, staff, students and visitors is not adversely affected by the work being performed.
- b. Potential negative contributors (contaminants) to IAQ include hazardous and non-hazardous particulates (dust and fibers), volatile organic compounds (VOCs), combustion products, biological materials, other miscellaneous contaminants (e.g., ozone, welding fumes, and cleaning compounds), and the potential odors associated with any of the contributors.
- c. In addition to standard airborne contaminants, physical agents such as noise, vibration and UV light radiation are potentially negative contributors to IAQ.
- d. Source activities for these contributors can include, but are not limited to, general demolition, sanding, grinding, cutting, drilling, installation and/or use of building materials (drywall, plaster, concrete, masonry, flooring, ductwork, roofing, caulks, sealants, coatings, adhesives, paints, varnishes, stains, wall coverings, fabric materials and furnishings), and welding.
- e. In most construction/renovation projects, contaminants are most commonly spread from the immediate work area to the adjacent occupied areas in one or more of the following manners:
 - Circulation through the HVAC system
 - Movement into areas under negative pressure
 - Tracking of contaminants by workers

- f. An assessment of each construction/renovation activity shall be performed by the contractor to identify the potential impacts to IAQ. When the potential exists, controls must be developed and implemented prior to the start of work.
- g. Since the hazards associated with construction and renovation often change as a project progresses, the contractor must conduct periodic hazard assessments during the performance of construction/renovation activities to anticipate and identify these changes and, as necessary, accordingly modify the control plan.
- h. Many methods are available to maintain IAQ during construction/renovation activities. The pros, cons, and limitations of each should be considered when developing a control plan to ensure the most effective and efficient approach for a particular job. In general, the choices include:
- Containing the work area.
 - Isolate construction work areas from occupied areas
 - Maintain an adequate unoccupied buffer zone around the work areas
 - Negatively pressurize construction work areas and/or positively pressurize occupied areas to prevent migration of air contaminants
 - Relocate pollutant sources
 - Modifying HVAC operation
 - Reducing contaminant generation.
 - Product substitution
 - Modify work practices
 - Modify equipment operation
 - Cover exposed emission releasing surfaces
 - Local Exhaust Ventilation
 - Maintaining Housekeeping.
 - Dust suppression
 - Adequate cleaning frequency
 - Efficient dust collection – wet vs. dry methods
 - Prompt clean-up of spills
 - Rescheduling work hours
- i. Control methods shall meet applicable regulatory requirements when hazardous/regulated materials are involved.
- j. Occupant complaints related to IAQ concerns during construction may interrupt the project schedule. Complaints will be assessed by the Construction Coordinator and EH&S. Project work that is stopped due to a significant IAQ impact can't continue until an adequate resolution has been reached.

IV. GENERAL SAFETY PROCEDURES

According to the OSHA General Duty Clause, covered under Section 5(a)(1) of the OSHA Act of 1970, each employer must furnish to all employees employment a place of employment free from recognized hazards that cause or are likely to cause death or serious physical harm to his employees. Furthermore, each employer must comply with occupational safety and health standards and all rules, regulations, and orders issued pursuant to this Act, which are applicable to his own actions and conduct.

Contractors will conduct frequent job site inspections to ensure safety, and will consider disciplinary action for unsafe acts. LSUHSC may remove personnel not in compliance with safety standards and may halt all work if a safe work site is not maintained.

1. **General Inspections and Training** ([29 CFR 1926.20](#)) and ([29 CFR 1926.21](#)).
 - a. Contractors must initiate and maintain an inspection program to provide for frequent and regular self-inspections to identify existing or potential hazards of the job site, materials, and equipment by competent persons designated by the contractor. The contractor shall document the completion of inspections on a periodic and frequent basis, as determined adequate by the construction site-supervisor. The person designated to perform these inspections shall be capable of identifying existing and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous or dangerous and have authorization to take prompt corrective measures to eliminate them.
 - b. Contractors must instruct each employee in the recognition and avoidance of unsafe conditions and in the regulations applicable to his or her work environment and to control or eliminate any hazards or other exposure to illnesses or injury.
 - c. The use of any machinery, tool, material, or equipment not in compliance with OSHA standards is prohibited.
2. **Medical Services and First Aid** ([29 CFR 1926.50](#)).
 - a. The contractor shall make provisions for prompt medical attention in case of employee injury prior to starting work.
 - b. All emergency contact telephone numbers shall be posted at the job site in an area accessible and conspicuous to all personnel.
 - c. Ensure employees are aware of their responsibility to report any injury to their supervisor immediately.
 - d. Be aware of and follow the requirements for Incident/Accident Reporting and Investigation Policy (see Section IV.22, *Recordkeeping and Reporting Requirements*).
 - e. A person trained to render first aid is to be available at the worksite if a medical facility is not reasonably accessible per 29 CFR 1926.50. The contractor's first aid program shall be designed to reflect the known and anticipated risks of the specific work environment.

- a. General.
 - i. The contractor shall ensure that any PPE required (including employee-owned PPE) is provided, used, and maintained in a compliant condition.
 - ii. Personal Protective Equipment shall be stored in a manner to prevent PPE from damage, dust, sunlight, chemical contamination, or extreme temperatures.
 - iii. The contractor shall document that all employees have received and understood the PPE training provided.
- b. Eye and Face Protection ([29 CFR 1926.102](#)).
 - i. Eye and face protection must be provided when machines or operations present potential eye or face injury. This protective equipment must meet the requirement of ANSI Z87.1-1991, "Practice for Occupational and Education Eye and Face Protection."
 - ii. Employees whose vision requires the use of corrective lenses in spectacles, when required to wear eye protection, shall be protected by goggles or spectacles in accordance with [29 CFR 1926.102 \(a\) \(3\)](#).
 - iii. Employees involved in welding operations must be furnished with filter lenses or plates of at least the proper shade number.
 - iv. Employees exposed to laser beams must be provided with suitable laser safety goggles that will protect for the specific wavelength of the laser and be optical density adequate for the laser involved.
- c. Head Protection ([29 CFR 1926.100](#)) . Head protective equipment (hard hats/helmets) must be worn in areas where there is a possible danger of head injuries from impact, flying or falling objects, or electrical shock and burns. Hard hats/helmets must meet the performance requirements of ANSI Z89.1, "Standard for Industrial Protective Helmets."
- d. Foot Protection ([29 CFR 1910.136](#)) . The contractor shall ensure that each effected employee uses protective footwear when working in areas where there is a danger of foot injuries due to falling or rolling objects, or objects piercing the sole, and where such employee's feet are exposed to electrical hazards.
- e. Hearing Protection ([29 CFR 1926.101](#)).
 - i. Feasible engineering or administrative controls must be used to protect employees against sound levels/duration in excess of those shown in [29 CFR 1926.52](#) , Permissible Noise Exposures, or hearing protective devices must be provided and used.
 - ii. In all cases where the sound levels exceed the values shown in safety and health regulations, a hearing conservation program must be administered.

- iii. All employees operating equipment with sound levels exceeding levels exceeding 85 decibels (acoustic) (dBA) shall use hearing protection. Hearing protectors shall attenuate the employee's noise exposure to a level below the noise exposure limit of 85 dBA 8-hr time weighted average (TWA).
 - iv. A combination of both earmuffs and plugs shall be used where noise levels equal or exceed 100 dBA 8-hr TWA and any exposure equal to or greater than 105 dBA.
 - v. The contractor shall affix appropriate warning signs on the perimeter and control area entry point for workers and surrounding area employees who may pass near the worksite when noise levels reach the action level greater than 82 dBA .
 - vi. Earmuffs and/or earplugs shall be provided in accordance with 29 CFR 1910.95. Such equipment shall be issued for the exclusive use of each employee and shall not be traded or shared.
 - vii. Plain cotton ear plugs are not acceptable for hearing protection.
- f. Respiratory Protection ([29 CFR 1910.134](#)).
- i. Exposure to toxic gases, vapors, fumes, dusts, and mists at a concentration above the permissible exposure limit specified in the MSDS shall be avoided. When engineering or administrative controls are not effective in controlling toxic substances below threshold concentrations, appropriate respiratory protective devices will be provided and must be used.
 - ii. Employees required to use respiratory protective devices must be thoroughly trained in their use.
 - iii. Where respirator use is required, contractors will have a written respirator protection program that includes respirator training, fit-testing and medical qualification documentation.

7. Electrical ([29 CFR 1926.400](#)) and ([29 CFR 1910.331, 332, 333](#)).

- a. It is very important that each contractor establish and maintain an effective safety-related work practices program. References for such a program include OSHA standards 29 CFR 1910.331 to 1910.333, Electrical Safety-Related Work Practices, and CFR 1926 Subpart K, Electrical.
- b. Training must be documented for all employees who face a risk of electric shock from working on, near, or with electrical circuits which are not reduced to a safe level by the electrical installation requirements of 29 CFR 1910.303 through 308.
- c. Only qualified persons are permitted to work on or near energized conductors or parts and then only under special procedures that ensure proper employee protection.

- d. Take precautions when working near overhead power lines. When an unqualified person is working in an elevated position near overhead lines, the location shall be such that the person and the longest conductive object he or she may contact can't come closer to any unguarded, energized overhead line than the following distances:
 - For voltages to ground 50kV or below – 10 ft.
 - For voltages to ground over 50 kV- 10 ft plus 4 inches for every 10kV over 50 kV.
- e. Equipment must not be operated closer than 10 feet to overhead energized power lines unless specific procedures are followed by qualified persons using appropriate protection equipment.
- f. Extension cords used with portable electric tools must be the 3-wire type, and must be protected from damage. Splices must have soldered wire connections with insulation equal to the original. Worn or frayed cords must not be used.
- g. Bulbs on temporary lights must be equipped with guards or deeply recessed in the reflector. Temporary lights must not be suspended by their electric cords unless designed for suspension.
- h. Receptacles for attachments plugs must be of the approved concealed contact type. Where different voltages, frequencies, or types of current are supplied, receptacles must be of such designs that attachment plugs are not interchangeable.
- i. Each disconnecting means of motors and appliances and each service feeder or branch circuit at the point where it originates must be legibly marked to indicate its purpose, unless located and arranged so the purpose is evident.
- j. Cable passing through work areas must be covered or elevated to protect it from damage which would create a hazard to employees.
- k. Boxes for disconnecting means must be securely and rigidly fastened to the surface upon which they are mounted and fitted with covers.
- l. All extension cords and cord and plug connected equipment must be protected by an assigned equipment grounding conductor program.
- m. No employer must permit an employee to work in proximity to any part of an electric power circuit that he may contact, unless the employee is protected against electric shock by de-energizing the circuit and grounding it or by guarding it by effective insulation or other means.
- n. In work areas where the exact location of underground electric power lines is unknown, workers using jackhammers, bars, or other hand tools which may contact an energized line must be provided with insulated protective gloves.

8. Fall Protection ([29 CFR 1926.500](#)).

- a. Fall protection must be provided to protect personnel from accidental falls associated with elevated work platforms. Contractors will develop a plan for all work 6 feet or more above the adjacent level using a passive (e.g., guardrails, nets, covers) and/or active (i.e., personal fall arrest system) and be in compliance with 29 CFR 1926 Subpart M, Fall Protection.
- b. The top edges of guardrails shall be 39 to 45 inches above the working level. When conditions warrant, the height of the top edge may exceed 45 inches if requirements of 29 CFR 1926 Subpart M are met. There must be a midrail located between the top rail and the working surface. Guardrail systems shall be capable of withstanding, without failure, a force of at least 200 pounds applied within 2 inches of the top edge, in any outward or downward direction, at any point along the top edge.
- c. Personal Fall Arrest Systems shall comply with the provisions set forth in [29 CFR 1926.502\(d\)](#):
 - Anchorages used for the attachment of fall arrest equipment shall be independent of any anchorage being used to support or suspend platforms and capable of supporting at least 5,000 pounds per employee attached.
 - Harnesses must be used as part of a Personal Fall Arrest System - - effective January 1, 1998, body belts are not acceptable per OSHA.
 - Lifelines should be protected against being cut or abraded.
 - Personal Fall Arrest Systems shall be inspected prior to each use for wear, damage, and other deterioration; and defective components shall be removed from service.

9. Flammable and Combustible Liquids ([29 CFR 1926 Subpart F](#)).

- a. Flammable and combustible liquids must only be stored in approved containers and in appropriate quantities for the job site use. No more than 25 gallons of flammable or combustible liquids shall be stored in a room outside of an approved storage cabinet.
- b. Stored containers shall be sealed or covered. Leaking containers will be removed from the storage area.
- c. Wiping rags, drop cloths, paint brushes, and rollers shall be stored in covered metal containers at the end of each working day.
- d. Conspicuous and legible signs prohibiting smoking must be posted in service and refueling areas.

- e. Flammable liquids must be dispensed through grounded and bonded containers.

10. Welding, Cutting and Heating (29 CFR 1926.350).

- a. Only employees properly trained and certified to operate welding and torch equipment shall operate such equipment.
- b. Proper precautions (isolating welding and cutting, removing fire hazards from the vicinity, providing a fire watch, etc.) for fire prevention must be taken where welding or other “hot work” is being done. No welding, cutting or heating will be done where the application of flammable paints or the presence of any other flammable compounds, or heavy dust concentration creates a fire hazard.
- c. Prior to any torch cutting/welding on any painted surface, the coating shall be removed a minimum of 4 inches in each direction from the cut/weld point or shall comply with the personal protective equipment requirements of OSHA standard 29 CFR 1926.62.
- d. Arc welding and cutting operations must be shielded by noncombustible or flameproof shields to protect persons from direct arc rays. Visual barrier screen are required for arc-welding operations.
- e. When electrode holders are to be left unattended, electrodes must be removed and the holder must be placed or protected so that it cannot make electrical contact with employees or conducting objects.
- f. All arc welding and cutting cables must be completely insulated and be capable of handling the maximum current requirements for the job. There must be no repairs or splices within 10 feet of the electrode holder except where splices are insulated equal to the insulation of the cable. Defective cables must be repaired or replaced.
- g. Fuel gas and oxygen hoses must be easily distinguishable and must not be interchangeable. Hoses must be inspected at the beginning of each shift and must be repaired or replaced if defective.
- h. General mechanical or local exhaust ventilation or air line respirators must be provided, as required, when welding, cutting, or heating:
 - Zinc, lead, cadmium, mercury, or beryllium-bearing materials in enclosed spaces.
 - Stainless steel with inert-gas equipment.
 - In confined spaces.
 - Where an unusual condition can cause an unsafe accumulation of contaminants.
- i. Proper eye protective equipment must be provided when appropriate.

11. Housekeeping (29 CFR 1926.25 and 1926.100).

- a. Good housekeeping practices shall be observed at all times.
- b. Form and scrap lumber protruding with nails and all other debris must be kept clear from all work areas.
- c. Combustible scrap and debris must be removed at regular intervals.
- d. The contractor must assess his work areas to ensure that no overhead hazards exist that endanger the safety of contractor employees, LSUHSC employees, students and visitors and the general public. Where identified action shall be taken to eliminate overhead hazards. Where the hazard cannot be eliminated, the contractor shall work with the Construction Coordinator to implement appropriate controls.
- e. Employees working in areas where there is a possible danger of head injury from impact or from falling or flying objects shall be protected by protective helmets. Helmets for the protection of employees against impact and penetration of falling and flying objects shall meet the specifications contained in American National Standards Institute, Z89.1-1969, *Safety Requirements for Industrial Head Protection*.
- f. Containers must be provided for collection and separation of all refuse. Only approved, marked containers shall be used for disposal of wastes in accordance with applicable regulations. Covers must be provided on containers used for flammable or harmful substances.
- g. Wastes must be disposed of daily.
- h. Lay down areas must be orderly and free from tripping hazards.

12. Storage (29 CFR 1926.250).

- a. All materials stored in tiers must be secured to prevent sliding, falling, or collapse.
- b. Aisles and passageways must be kept clear and in good repair.
- c. Storage of materials must not obstruct exits or hallways, block access to fire extinguishers, or interfere with the operation of the building's fire suppression systems.
- d. Materials must be stored properly in accordance with their fire characteristics.

13. Ladders (29 CFR 1926.1053) and (29 CFR 1910 Subpart D).

- a. A stairway or ladder will be provided for all personal points of access where there is a break in elevation of 19 inches or more, and no ramp, runway, sloped embankment or personal hoist is provided.

- b. The use of ladders with broken or missing rungs or steps, broken or split side rails, or with other faulty or defective construction is prohibited. Ladders will be routinely inspected, and when defects are discovered they must immediately be withdrawn from service.
- c. Portable ladders must be placed on a substantial base, have clear access at top and bottom, extend a minimum of 36 inches above the landing, or where not practical, be provided with grab rails and be secured against movement while in use.
- d. Portable metal ladders must not be used for electrical work or where they may contact electrical conductors.
- e. Ladders placed in any location where they can be displaced by workplace activities or traffic, such as in passageways, doors, or driveways shall be secured to prevent accidental displacement, or a barricade shall be used to keep the activities or traffic away from the ladder.
- f. Each employee shall use at least one hand to grasp the ladder when progressing up/down the ladder. An employee shall not carry any object or load that could cause the employee to lose balance and fall.

14. Flaggers (29 CFR 1926 Subpart G).

- a. When signs, signals and barricades do not provide necessary protection on or adjacent to a highway or street, flaggers or other appropriate traffic controls must be provided.
- b. Signaling by flaggers and the use of flaggers, including warning garments worn by flaggers shall conform to part VI of the Manual on Uniform Traffic Control Devices.

15. Motor Vehicles and Mechanized Equipment (29 CFR 1926 Subpart O).

- a. Observe posted speed limits, give pedestrians the right of way, and yield to emergency vehicles.
- b. All vehicles in use must be checked at the beginning of each shift to assure that all parts, equipment and accessories that affect safe operation are in proper operating condition and free from defects. All defects will be corrected before the vehicle is placed in service.
- c. No person must use any motor vehicle, earth moving or compacting equipment having an obstructed view to the rear unless the vehicle has a reverse signal alarm distinguishable from the surrounding noise level or the vehicle is backed up only when an observer signals that it is safe to do so.
- d. Heavy machinery, equipment, or parts thereof which are suspended or held aloft must be substantially blocked to prevent falling or shifting before employees are permitted to work under or between them.

16. Mobile Scaffolds (29 CFR 1926.452(w)).

- a. A climbing ladder or stairway shall be provided for proper access and egress, and shall be located that its use will not have a tendency to tip the scaffold.
- b. Scaffolds will be capable of supporting at least four times the design workload.
- c. The maximum work level height shall not exceed four times the minimum or least base dimensions of the scaffold.
- d. All work levels ten feet or higher above the ground or floor shall have a guardrail 2 by 4 inch nominal or the equivalent installed no less than 36 inches or more than 42 inches high, with a mid-rail, when required, of 1 by 4 inch nominal lumber or equivalent. Furthermore, the platform will have a standard (4 inch nominal) toeboard.
- e. There must be a screen with maximum ½-inch openings between the toe board and the guardrail, where the persons are required to work or pass under the scaffold.
- f. The minimum platform width for any work level shall not be less than 20 inches.
- g. All scaffold casters shall be provided with a positive wheel/or swivel lock to prevent movement.
- h. All scaffold planking shall be 2 inch (nominal) scaffold grade minimum 1,500f (stress grade) construction grade lumber or equivalent.
- i. Employees are not permitted to ride on mobile scaffolds unless conditions permit per 29 CFR 1926.452 (w) (6).

17. Pneumatic Power Tools (29 CFR 1926.302(b)).

- a. Pneumatic power tools must be secured to the hose or whip in a positive manner to prevent accidental disconnection.
- b. Safety clips or retainers must be securely installed and maintained on pneumatic impact tools to prevent attachments from being accidentally expelled.
- c. The manufacturer's safe operating pressure for all fittings must not be exceeded.
- d. All hoses exceeding ½-inch inside diameter must have a safety device at the source of supply or branch line to reduce pressure in case of hose failure.

18. Compressed Air (29 CFR 1910.242). Compressed air used for cleaning purposes must not exceed 30 psi and then only with effective chip guarding and personal protective equipment.

19. Compressed Gas Cylinders (29 CFR 1910 Subpart O).

- a. Valve protection caps must be in place when compressed gas cylinders are transported, moved, or stored.
- b. Cylinder valves must be closed when work is finished and when cylinders are empty or moved.
- c. Compressed gas cylinders must be secured in an upright position at all times, except if necessary for short periods of time when cylinders are actually being hoisted or carried.
- d. Cylinders must be kept at safe distances or shielded from welding or cutting operations. Cylinders must be placed where they cannot become part of an electrical circuit.
- e. Oxygen and fuel gas regulators must be in proper working order while in use.
- f. Applicable technical portions of American National Standards Institute, Z49.1, Safety in Welding and Cutting, must be followed.

20. Excavations and Trenches (29 CFR 1926 Subpart P).

- a. A daily inspection of excavations, the adjacent areas, and protective systems will be performed by a competent person.
- b. Protective systems in excavations will be in accordance with 29 CFR Part 1926.652. Trenches more than five feet deep require shoring or sloping. Excavations less than five feet deep are allowed if examination by a competent person provides no indication of potential cave in.
- c. Substantial barricades to prevent persons from falling into an open trench must be maintained around the perimeter of the trench. This is especially important at the end of the workday for trenches that must remain open overnight. Construction tape or other passive devices are not adequate.
- d. A stairway, ladder, ramp or other safe means of egress shall be located in trench excavations that are four feet or more in depth so as to require no more than 25 feet of lateral travel for personnel.

21. Vehicle-Mounted Elevated & Rotating Work Platforms (e.g., JLGs) (29 CFR 1910.67).

- a. A harness shall be worn and lanyard attached to the boom or basket.
- b. Only trained persons will operate an aerial lift.

- c. Personnel shall always stand firmly on the floor of the basket, and shall not sit or climb on the edge of the basket or use planks, ladders, or other devices for a work position.
- d. Lift controls shall be tested each day prior to use to determine that such controls are in safe working condition.
- e. Boom and basket load limits specified by the manufacturer shall not be exceeded.
- f. An aerial lift truck may not be moved when the boom is elevated in a working position with men in the basket, except for equipment which is specifically designed for this type of operation in accordance with the provisions of 29 CFR 1910.67 (b).
- g. Before moving an aerial lift for travel, the boom(s) shall be inspected to see that it is properly cradled and outriggers are in stowed position, except as provided in 29 CFR 1910.67 (c) (2).

22. Performing Work in Parking Garages and on Streets. OSHA interpretation letter #20080829-8611 of Aug 5, 2009 states that “Road construction traffic poses an obvious and well-recognized hazard to highway/road construction work zone employees. OSHA standards require such employees to wear high visibility garments in two specific circumstances: when they work as flaggers and when they are exposed to public vehicular traffic in the vicinity of excavations. However, other construction workers in highway/road construction work zones are also exposed to the danger of being struck by the vehicles working near them. For such workers, section 5 (a) (1) of the OSH Act, 29 U. S. C. Section 654 (a) (1), also known as the General Duty Clause, requires similar protection.” Accordingly, personnel working in the parking garages (to include construction, maintenance/repair, and inspections (e.g., inspection of fire extinguishers, testing of fire alarm systems)), on or adjacent to streets, or otherwise exposed to vehicular traffic shall wear, as a minimum, high visibility safety vests.

23. Recordkeeping and Reporting Requirements [\(29 CFR Part 1904\)](#). Contractors will report all injuries and illnesses (including those that result in days away from work, restricted work, transfer to another job, medical treatment, loss of consciousness, or a significant injury or illness diagnosed by a physician or healthcare professional) immediately to the Construction Coordinator, who will notify the Environmental Health and Safety Department. If the accident results in the death of an employee or in the hospitalization of three or more employees, the contractor is required to verbally report the accident within eight hours to the nearest OSHA office or the national OSHA hotline at (800) 321-OSHA (6742). LSUHSC is required to report such accidents to the State of Louisiana Office of Risk Management at 225-342-8529.

- a. Injury and Illness Records. Contractors must keep injury and illness records for each establishment. An establishment is a single physical location where business is conducted or where services or industrial operations are performed.

- b. OSHA Recordkeeping Forms. Recordkeeping forms must be maintained for five years at the establishment and must be available for inspection by representatives of OSHA, HHS, BLS or the designated state agency.