



SAFETY MANUAL

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I. INTRODUCTION

A. PREFACE

Safety and Environmental considerations are an important part of our daily lives. Not only for our individual protection, but for the protection of others and the environment. In order to maintain a high level of knowledge and awareness, each employee and faculty member is issued a copy of this manual.

This safety manual is the guiding document of the Law Center Safety Program. Each employee, student and faculty member is responsible for adhering to the rules included herein. Student workers are especially susceptible to accidents and environmental mistakes, and must be trained and guided by knowledgeable faculty and staff.

Questions about the content of the manual should be directed to your supervisor or Safety and Environmental representative.

B. Chancellors Safety Policy Statement

To: Law Center Staff, Faculty, and Students

The Paul Hebert Law Center is committed to providing an environment for its staff, students and guest that is free from recognized hazards, including environmental threats, that may harm them.

Due to this commitment, we have established this safety program to guide us in this effort.

I encourage each person to become familiar with the contents of our program and to help us be effective in protecting the safety, health, and environment of our campus community.

II. GENERAL POLICIES AND STANDARDS

A. EMERGENCY PROCEDURES

The following procedures are provided for quick reference for emergency situations. Further information can be obtained from LSU Police or OES. Emergency phone numbers should be on or near the phone at all times.

1. INJURIES

Accidental injury can occur at any time during the day or night, weekdays or weekends. As a result, we must be prepared for such an event at all times. The following procedure is to be used unless circumstances prevent one or more of the steps to be taken. The well being of the injured always takes precedence over procedure, and may require that additional measures be taken.

- a. Call 911 and prevent further injury by avoiding personal exposure to injury and keeping others out of the area
- b. Provide First Aid/CPR as necessary
- c. Assist emergency medical personnel
- d. Secure scene for accident investigation
- e. Prepare injury report and route to Risk Management and Safety

(Refer to LSU policy document PS 99 for detailed instructions on filling out injury reports.)

2. EMERGENCY PLAN FOR GAS LEAKS

Natural gas leaks are generally detected by the odor of the gas odorant. The odorant has an odor threshold of from one to three parts per billion, and provides an excellent means of detection. LSU odorizes the gas that is used in campus buildings served by the LSU gas lines. There are some fraternity and sorority houses that are on Entergy gas lines, so it is important to know who the gas supplier is for your facility. The following procedure should be used at any time a leak is suspected:

- a. Control ignition sources.
- b. Make sure that no one turns off or on an electrical appliance or light. Other sources of ignition should be moved out of the area if possible. Pilot lights should be turned off if possible
- c. Contact Facility Services for gas personnel to assist in locating the leak, and notify Safety
- d. Turn off gas if location of shutoff valve is known
- e. Evacuate area and keep people out if leak may be significant
- f. Evaluation and guidance is provided by Facility Services and Safety

Additional reportable hazards include but are not limited to gas facility failures such as:

- a. Under-pressure in the system.
- b. Over-pressure in the system.
- c. Fire or explosion near or directly involving a pipeline facility.
- d. Damage to a major segment(s) of the system.

Additional information on gas leaks can be obtained from Facility Services (Energy Services.)

3. FIRE PROTECTION/EVACUATION PLAN

Each building has an emergency evacuation plan that must be posted for employees and others to follow during evacuation of the building in case of emergency. This plan must be kept legible and up to date. New employees and others who are new to the building should be made aware of the emergency plans for the building as part of their orientation. Emergency signals and alarms as well as the proper response to an emergency must be explained to the persons involved. At any time the system is changed or the plan modified, the occupants must be made aware of the changes that may affect them.

Fire protection equipment and systems must not be modified or disabled such that the plan is no longer valid. Covering smoke detectors, disabling alarms, or discharging fire extinguishers without good reason is strictly prohibited. Fire extinguishers must not be obstructed or moved such that they are not readily available in an emergency. Inspections and maintenance is conducted by Facility Services, and they should be notified if an extinguisher is discharged or missing.

4. CHEMICAL/BIOLOGICAL EMERGENCY RESPONSE

Call Safety and Campus Police if person in charge cannot contain spill safely *Note: If the spill or release is an immediate danger to buildings and/or occupants, the Baton Rouge Hazmat Unit will be called at the time of the spill to assure prompt and adequate response. Refer to the appendix for the appropriate response level.*

- a. Warn others on floors that may be affected, and evacuate floors if necessary.
- b. Begin preparation for evacuation of building if explosion or poisonous vapor or fumes are possible
- c. Follow guidance of Safety and LSU Police
- d. Do not enter an area that may be dangerous

For chemical or biological spills or hazardous waste disposal problems, the Occupational and Environmental Safety Section has a Chemical/Biological Emergency Response Unit. This unit is available on an immediate basis during normal hours, but may be delayed after hours as a callout is required to mobilize the unit.

5. SECURITY THREATS

- a. Verbal Threats:

- i. Ask Questions: "when, where, what, why"
 - ii. If on the telephone, try to get someone to call LSU Police on another line while you keep the person on the line.
 - iii. Follow guidance of the LSU Police
- b. Suspicious Packages

NOTE: DO NOT MOVE OR TOUCH SUSPICIOUS PACKAGES

- i. Notify LSU Police Immediately
 - ii. Notify department head, fellow workers, supervisor
 - iii. Remain calm
- c. Threatening Individuals
- i. Do not become confrontational
 - ii. Observe the person closely and note clothing description, method of travel, any weapons displayed or implied
 - iii. Note whether verbal threats - physical threats are made
 - iv. Notify LSU police immediately
 - v. Notify department head, fellow workers, supervisor
 - vi. Remain calm

6. STORMS

LSU has an emergency plan for major storms that must be adhered to. The following general instructions should be followed. General instructions include:

- a. Monitor local radio/TV broadcasts
- b. Adhere to travel warnings
- c. Be aware of the threat to your residence and work area and the route in between
- d. Know evacuation routes
- e. Be prepared to evacuate
- f. Follow advice presented in University announcements
- g. Remain calm

B. OPERATIONAL SAFETY & LOSS PREVENTION PLAN

This serves as the master document addressing the sixteen point operational safety plan required by the ORM. Each component of the plan is addressed below and references the location of specific program components.

1. Management Safety Policy Statement

Policy Statement #19 is the University Safety Policy. The statement outlines the University commitment to safety, assigns responsibilities, and designates the Office of Occupational & Environmental Safety to develop, implement, and evaluate safety and environmental compliance programs. The Policy also establishes the University Safety Committee to provide the administration with recommendations that will enhance the safety programs. P.S. 19 is signed by the Chancellor and is available to all LSU employees via the Internet, as well as, the requirement that all departments have current copies of all Policy Statement on file.

2. Assignment of Safety Responsibility

The assignment of safety responsibility is provided in the Law Center Safety Manual. Safety responsibility is assigned to Vice Chancellors, Directors, & Department Heads who will implement safety programs in their areas of responsibility. The policy address accountability as well. OES is assigned the role of provider and coordinator.

3. Inspection Program

The inspection programs operated by the Law Center include the following:

- Building Inspections
- Fire Watch Inspections
- Fire Extinguishers
- Fire Alarms Systems
- Building Sprinkler Systems

These inspections are carried out by various Law Center & University personnel responsible for implementing corrective action when needed. Inspection frequency ranges from quarterly to annually. Inspection records are kept by OES and the department responsible. LSUPD patrols the campus on a 24 hour basis.

4. Job Safety Analysis

Job Safety Analysis are performed for tasks/operations which shows a higher than normal accident rate. As with the Accident Investigation Program, those accident which cause serious injury/lost time or significant property damage shall be reviewed with a JSA.

5. Investigation Program

Accident investigations are the responsibility of the supervisor of the work unit involved. The "Occupational Accident or Illness Report"(attached) is used to document accidents. This report is distributed by Human Resources Management. Accidents involving serious injury (doctors care) or significant property damage are investigated by OES in cooperation with the department involved. Accident records and trends analysis are compiled by OES and reported on an annual basis.

6. Safety Meetings

LSU Law Center is classified as a Class B agency. Therefore, safety meeting are required on a quarterly basis. OES has adapted this component to fit the academic calender used by the university. Academic areas considered to be low risk are require to have safety meeting *every semester. (Fall, Spring, and Summer)* High risk areas (Facility Services) are required to have safety meeting on a *monthly basis*. This is mandated by the Law Center Safety Manual.

7. Safety Rules

The Law Center has several sets of written safety rules. The *Law Center Safety Manual* serves as the general resources for safety and environmental procedures and regulations. Policy Statement 18 serves as the Emergency Preparedness Plan for the LSU A & M Campus and is referenced as part of the Law Center Safety Program. Each of these written documents has been created to insure compliance with OSHA, DEQ, and State Fire Marshall rules and regulations.

8. Safety Training

Law Center employees have access to safety training provided by OES. Training programs include the following:

- Asbestos Awareness
- Hazard Communication
- Defensive Driving
- First Aid / CPR

Employees also receive specific training on proper work procedures including safety procedures from departmental supervisors. This training takes place upon initial employment, after job reclassification, and when new procedures or equipment is introduced.

9. Record Keeping

Document pertaining to safety related actions are kept by OES and the departments. Those records kept and analyzed by OES include the following:

- Accident Reports
- Inspection Reports
- Accident Investigation Reports
- JSAs
- Safety Training Documents
- Safety Meeting Records

These documents are evaluated, analyzed, and reported on a annual basis.

10. First Aid

The two primary sources of first aid for Law Center employees are the Student Health Center(SHC) and the LSU Police Department(LSUPD). The SHC is staffed by several full time nurses and doctors. Injured employees may be treated there when injured on the job. All LSU police officers are trained in first responder CPR and first aid techniques. LSUPD is staffed on campus 24 hours. Also, a BRCFD station is located just north of campus on Highland Road with trained paramedics on call. OES offers first aid and CPR training to Law Center employees. All training includes information on Blood borne Pathogens. First Aid kits are recommend in all

departments.

11. Housekeeping Program

The Law Center maintains a contract with a housekeeping contractor which insure clean and uncluttered areas. A property control group insure the proper handling of unused or discarded equipment. Also, a Building Coordinator is responsible for inspecting the building on a quarterly basis to eliminate safety and fire hazards from uncontrolled sources.

12. Hazard Control Program

The University maintains a hazard control program in several ways. Inspection programs, outlined earlier in this document, are used to recognize, evaluate, and correct hazards. Also, a hazard control log is kept by the HRM department and reviewed on a regular basis.

13. Boiler and Machinery Program

A maintenance contractor is responsible for the Boiler and Machinery Program. The inspection of these boilers is completed by the State Fire Marshall's Office and the insurance agency hold our policy.

14. Driver Safety Program

The Driver Safety Program consists of Defensive Driver Training, Record keeping, Accident Investigations/Reporting, and Vehicle Inspections. All Law Center employees who regularly drive campus vehicles or regularly drive for campus related business will be given the Defensive Driving Training Course. Driving records are checked by HRM and accident investigation are performed using the DA2041 Form. All state vehicles are inspected by trained state inspectors.

15. Water Vessel Operator Safety Program

The Law Center has no Water Vessels

16. Misc.

Other safety programs used by the university but not listed specifically in the sixteen point program include the following:

- Substance Abuse and Drug Testing Program (Safety and Security)

- Disability Programs (ADA Compliance in construction)
- Violence in the Workplace (LSUPD)

C. SAFETY AND ENVIRONMENTAL RESPONSIBILITIES

1. CHANCELLOR AND CHANCELLOR'S STAFF

As chief administrator, the chancellor is responsible for overall direction of the Law Center safety and environmental program. The chancellor is responsible for establishing policies, assuring that implementation of the policies are facilitated through appropriated resources, and that rules and procedures therein are adhered to by all Law Center personnel and students. The chancellor may delegate certain safety and environmental responsibilities to appropriate levels within the Law Center community.

2. DIRECTORS, AND DEPARTMENT HEADS

As key administrative elements in the organization of the campus community, deans, directors and department heads implement safety and environmental programs within their respective organizations and assure that implementation and enforcement is in place for all such programs. Other responsibilities include:

- a. Appoint a safety committee within their organization where appropriate with duties, functions, and responsibilities as detailed under "Safety Committees." A roster of Committee Officers is to be submitted to the Office of Occupational and Environmental Safety.
- b. Provide for the conduct of periodic self-inspections in their area of responsibility utilizing the appropriate inspection form as detailed under "Inspection Schedules and Reports."
- c. Provide for the immediate investigation of all accidents resulting in personal injury to personnel for whom they are responsible and submit a report of the findings, utilizing the "Employer's Report of Occupational Injury or Disease" form.
- d. Cooperate with the University Safety Committee when called upon to do so.

3. PROFESSORS AND OTHER SUPERVISORS

As the key figures in the safety and environmental program, the immediate faculty/Principal Investigators/Supervisors shall carry out instructions from their superiors and assure that safety and

environmental procedures are followed in everyday operations on campus. The following responsibilities are also required:

- a. Have a working knowledge of all safety principles and safety rules applicable to their area of responsibility.
- b. Conduct periodic self-inspections of their area of responsibility and submit appropriate inspection reports as required.
- c. Conduct or have conducted safety meetings on a regular basis. The frequency of the meetings shall be scheduled to fit the needs of their respective area of responsibility.
- d. Investigate all accidents or incidents that could have resulted in injury and/or property damage to determine cause and prevent recurrence.
- e. Promote good housekeeping and proper safety performance.
- f. Insure that students/employees are schooled in the proper use and maintenance of supplied safety equipment, including personal protective equipment, and supplied with same.
- g. Insure that the proper tools and equipment are selected for the job and are used correctly.
- h. Develop efficient material handling procedures to facilitate safe lifting, carrying, and storage of same.

4. EMPLOYEES, STUDENTS AND VISITORS

- a. Obey safety and environmental rules and regulations.
- b. Report to appropriate authorities unsafe conditions and procedures.
- c. Refrain from actions which could cause injury or damage to property due to their lack of training, their condition, or the condition of the equipment.
- d. Look out for their coworkers and others to warn/stop actions on their part which could cause injury or property damage.

D. OFFICE OF OCCUPATIONAL AND ENVIRONMENTAL SAFETY

1. SCOPE

The Office of Occupational and Environmental Safety (OES) reports to the Executive Director, Public Safety and Risk Management, who reports to the Associate Vice Chancellor, Business Affairs.(LSU A & M)

OES supports the Law Center safety and environmental program through consultation with, and assistance to, all levels within the campus organization; preparation and presentation of safety and environmental training; development of safety and environmental rules, procedures and processes; and incident investigations with recommendations to enhance safety and environmental procedures. OES is also charged with hazardous materials collections and disposal.

The Office of Occupational and Environmental Safety is *not* charged with any responsibilities relating to

law enforcement, radiation, parking, traffic, and transportation.

2. DUTIES:

- a. The Director, Occupational and Environmental Safety duties include, but are not limited to, the following:
 - i. Directs the implementation of the University Occupational and Environmental Safety Program including: fire safety, inspections, accident investigations, Hazardous Waste Program, occupational and environmental safety rules and procedures.
 - ii. Develops and/or makes recommendations for safety/environmental policies as needed.
 - iii. Serves as Chairman of the Law Center Safety Committee.
 - iv. Serves as the coordinator for federal, state, and local agencies regarding occupational and environmental safety matters.
 - v. Serves as the coordinator for insurance carriers regarding occupational and environmental safety matters.
 - vi. Directs OES staff, evaluates performance, and prescribes professional development activities
- b. The Assistant Director, Occupational and Environmental Safety duties include but are not restricted to the following:
 - i. Oversees environmental testing and monitoring programs for environmentally hazardous areas and processes and acts as the university contact point for environmental regulators.
 - ii. Directs the Hazardous Waste Collection and Disposal Program
 - iii. Makes safety/environmental inspections when deemed necessary by virtue of accident frequency and/or obvious hazards.
 - iv. Coordinates Fire Marshal interface for the campus
 - v. Monitors environmental regulations and makes required adjustments in campus compliance activities.
 - vi. Supervises accident statistics and analysis program.
 - vii. Assists the Director in the administration of the safety and environmental program and acts in the absence of the Director as necessary.
- c. The Safety and Environmental Training Officer duties include but are not restricted to the following:
 - i. Coordinates the campus safety and environmental training program
 - ii. Administers programs related to sign age, labels and training materials
 - iii. Participates as a member of the Emergency Response Unit (non-medical).
 - iv. Develops accident data in keeping with OSHA and National Safety Council criteria, and monitors trends in accidents.

- v. Researches federal and state standards and regulations relating to safety and environmental areas.
- d. The Safety and Health Officer acts as the industrial hygienist for the campus and performs the following duties:
 - i. Conducts indoor air quality surveys and evaluations as requested.
 - ii. Advises and consults with campus administration, faculty and employees on industrial hygiene matters.
 - iii. Acts as expert in working with outside agencies and court proceedings related to campus industrial hygiene programs and problems.
 - iv. Participates as a member of the Emergency Response Unit (non-medical).
 - v. Monitors federal and state standards and regulations relating to industrial hygiene.
 - vi. Oversees the accumulation and cataloging of Material Safety Data Sheets (MSDS) as an assist to the Hazard Communication Program.
- e. The Emergency Response / Hazardous Material Coordinator
 - i. Provides direct administration of the hazardous waste storage facility, including vehicles and equipment.
 - ii. Collects for disposal and transports hazardous wastes from the LSU system.
 - iii. Provides emergency response to hazardous material incidents on campus.
 - iv. Assists with incident investigations involving injuries.
 - v. Performs environmental monitoring operations.
- f. The Office Coordinator II duties include but are not restricted to the following:
 - i. Coordinates and directs the maintenance of the office systems and records.
 - ii. Processes documents in accordance with procedural requirements.
 - iii. Prepares regular and special statistical reports.
 - iv. Prepares and checks requisitions, special payrolls, expense accounts, and vouchers.
 - v. Prepares and maintains budget records
- f. The Student Workers perform routine non-hazardous safety duties as assigned. Student workers work under the direction of the Safety Officers and the Office Coordinator
- 3. SERVICES AVAILABLE THROUGH OFFICE OF OCCUPATIONAL AND ENVIRONMENTAL SAFETY:
 - a. *Consultation and Studies*--OES personnel will consult with any recognized entity or person officially part of the University community regarding occupational and environmental safety on campus. The consultation can be initiated by calling or writing the Office of Occupational and

Environmental Safety.

- b. *Emergency Response*-- OES maintains a non-medical Emergency Response Unit (ERU). The unit will respond to chemical spills, fires, gas leaks, or potential emergencies. Details on how to activate the ERU are covered in another section of the manual.
- c. *Safety Training*--OES personnel will present or assist in the presentation of various safety training including: asbestos abatement procedures, fire protection and the use of fire extinguishers, flammable liquid fire demonstrations, hazard communication, use of personal protective equipment and self-contained breathing apparatus(SCBA). In addition, OES personnel can tailor a training program for special subjects provided they are given appropriate lead time. Assistance is available for development of safety meeting topics using the OES library or other resources. The list of video tapes and other training aids and materials can be obtained from the OES Office. LSU is also a member of the local safety council and, as such, has access to the council's film library. OES will attempt to secure films for requesting departments upon request.
- d. *Special Investigations/Inspections* -- OES will make special accident investigations or inspections on its own or upon request. Normally, formal accident investigations are made when serious accidents are involved or the potential for serious consequences is present. Laboratory certifications/inspections are available upon request and as required by University procedures/policies.
- e. *Environmental and Industrial Hygiene Monitoring* -- OES will, upon request or when deemed necessary, perform industrial hygiene testing and perform indoor air quality surveys. Where considerable expense and resources are necessary for these evaluations, departments may be requested to support the activity with partial or complete funding.
- f. *Hazardous Waste Program.* -- OES collects, transports, stores, and coordinates the proper disposal of hazardous wastes generated by University activities. For information on radioactive materials consult with Radiation Safety.

E. LAW CENTER SAFETY COMMITTEE

1. RESPONSIBILITIES

The Law Center Safety Committee is an advisory committee reporting to the Law Center Chancellor. The Committee works in such a manner as to enlist cooperation of members of the Law Center community in the safety and environmental program at every level of management within the Law Center. The Director, Occupational and Environmental Safety serves as Chairman of the Committee.

2. DUTIES OF THE LAW CENTER SAFETY COMMITTEE

The Law Center Safety Committee shall assist the Director of OES in reviewing safety problems, developing means and methods for resolving the problems and in developing the necessary procedures for placing the acceptable means into effect. Specifically, the Safety Committee shall:

- a. Assist in developing safety education/training programs designed to create and maintain an interest in job safety.

- b. Assist the Director, Occupational and Environmental Safety in coordinating the efforts of the safety committees organized within the various colleges, schools, and major activities of the University.
- c. Review reports of serious accidents or fires.
- d. Provide suggestions and recommendations to correct hazardous conditions and/or unsafe work practices.
- e. Recommend those changes to existing practices or new practices to maximize protection for campus safety and environment.
- f. Recommend physical or structural alterations required to eliminate or control hazards.

F. STANDARDS

The LSU Law Center has incorporated Occupational Safety and Health Act (OSHA) standards in the Law Center Safety and Environmental Policy .

OSHA standards incorporate by reference other standards adopted by standards-producing organizations. It is, therefore, necessary for LSU to enforce those standards applicable to its operations. Some standards producing organizations that are of considerable importance to us include:

1. American Chemical Society (ACS)
2. American Conference of Governmental Industrial Hygienists (ACGIH)
3. American National Standards Institute (ANSI)
4. American Society of Agriculture Engineers (ASAE)
5. American Society of Mechanical Engineers (ASME)
6. American Society of Safety Engineers(ASSE)
7. American Welding Society (AWS)
8. Compressed Gas Association (CGA)
9. Environmental Protection Agency (EPA)
10. National Fire Protection Association (NFPA)
11. National Institute for Occupational Safety and Health (NIOSH)
12. Southern Building Code (SBC)
13. Center for Disease Control (CDC)/ National Institutes of Health (NIH)

LSU Law Center is required to comply with regulations promulgated and enforced by such agencies as the Office of the State Fire Marshal and the Department of Environmental Quality (DEQ), and is subject

to enforcement actions by these agencies.

G. LOUISIANA BUILDING CODE FOR STATE OWNED BUILDINGS

Any new construction, alteration, addition, or renovation plans for state buildings shall be endorsed by and follow rules and regulations promulgated by Facility Planning and Control.

Additionally, the plans shall be reviewed by the Office of the State Fire Marshal to assure compliance with the National Fire Protection Association Life Safety Code 101 among other codes, local or otherwise.

Logically, such plans shall be reviewed by the Office of Occupational and Environmental Safety prior to submission to the Office of the State Fire Marshal.

In order to evaluate the state of an existing building, the building coordinator shall inspect, or have inspected, the building on a quarterly basis using inspection report forms available at the OES office. A copy of the inspection report shall be filed with OES.

Areas of considerable concern include exits and means of egress, panic hardware, locking or obstructing exits and passageways, exit signs and exit ways, fire alarms, fire extinguishers, emergency lighting, sprinkler systems, house-keeping and evacuation diagrams.

1. EXIT AND MEANS OF EGRESS

Exits shall be so located and exit access shall be so arranged that exits are readily accessible at all times. Where exits are not immediately accessible from an open floor area, safe and continuous passageway, aisles or corridors shall be maintained leading directly to every exit and shall be so arranged as to provide convenient access for each occupant to at least two exits by separate ways of travel.

In no case shall access to an exit be through kitchens, store-rooms, restrooms, closets, bedrooms, or similar spaces or other rooms subject to locking (above does not apply specifically to dwellings or some apartments--contact Office of Occupational and Environmental Safety for clarification).

Ways of exit access and the doors to the exits to which they lead shall be clearly recognizable. Hangings or draperies shall not be placed over exit doors or otherwise located so as to conceal or obscure any exit. Mirrors shall not be placed on exit doors. Mirrors shall not be placed so as to confuse the direction of exit.

2. PANIC HARDWARE FOR REQUIRED EXITS

Panic hardware is required in some instances by code, and consists of a door latching assembly device which releases the latch upon the application of a force in the direction of exit travel. Only approved panic hardware shall be used.

Required panic hardware shall not be equipped with any locking or dogging device, set screw, or other arrangement which can be used to prevent the release of the latch when pressure is applied to release bar (for special locking arrangement, contact Office of Occupational and Environmental Safety).

3. LOCKING OR OBSTRUCTING EXITS AND PASSAGEWAYS

A door shall be so arranged as to be readily opened by the occupant to provide egress at all times when the building is occupied. A latch or other fastening device on a door shall be provided with a knob, handle, panic bar, or other simple type of releasing device; the method of operation shall be obvious even in darkness.

The minimum width of any corridor shall normally be 44 inches in the clear. (Passageways, doors, and exits shall be free from obstructions.) **IT IS STRICTLY PROHIBITED TO CHAIN AN EXIT DOOR CLOSED IF A BUILDING IS OCCUPIED.**

4. EXIT SIGNS

Every required sign designating an exit or way of exit access shall be so located and of such size, distinctive color, and design as to be readily visible and shall provide contrast with decorations, furnishings, or equipment which impair visibility of an exit sign. There shall not be any brightly illuminated sign, display, or objects in or near the line of vision to the required exit sign of such a character as to detract attention from the exit sign.

Every exit sign shall be suitably illuminated by a reliable light source. Externally and internally, illuminated signs shall be visible in the normal and emergency lighting mode.

A sign reading "**EXIT**" or similar designation with an arrow indicating the direction of the nearest approved exit shall be placed in every location where the direction of travel to reach the nearest exit is not immediately apparent.

5. EMERGENCY LIGHTING

Illumination of means of egress shall be continuous during the time that the conditions of occupancy require that the means of egress be available for use. Artificial lighting shall be employed at such places and for such periods of time required to maintain the illumination. For the purposes of this requirement, exit access shall include only designated stairs, aisles, corridors, ramps, escalators, and passageways leading to an exit.

6. FIRE ALARMS

- a. Activation of the protective system shall occur by any or all of the following means but not limited thereto:
 - i. Manual fire alarm initiation
 - ii. Automatic heat detection
 - iii. Automatic smoke detection
 - iv. Extinguishing system operations
- b. Each manual fire alarm station on a system shall be accessible, unobstructed, visible, and of the same general type.
- c. The general evacuation alarm shall operate throughout the entire building.
- d. Audible alarm indicating devices shall be of such character and so distributed as to be effectively heard above the ambient noise level obtained under normal conditions of occupancy.
- e. The fire alarm and heat/smoke detection system shall be tested periodically and the results of the

test recorded.

7. PORTABLE FIRE EXTINGUISHERS

- a. Portable fire extinguishers shall be chosen for the class of fire expected. Class of fire refers to the nature of the fuel involved as follows:

Class A--Fires involving ordinary combustible materials such as wood, cloth, rubber, and many plastics.

Class B--Fires involving flammable or combustible liquids, flammable gases, and similar materials.

Class C--Fires involving electrical energy.

Class D--Fires involving certain combustible metals such as magnesium, titanium, sodium, potassium, etc.

NOTE: The fire class shall be designated on the extinguisher itself.

- b. Extinguishers mounted in cabinets, wall recesses, or brackets shall be placed in such a manner that the operating instructions shall face outward. Extinguishers shall not be obstructed or obscured from view, and cabinets housing extinguishers shall not be locked.
- c. Extinguishers shall be periodically checked and/or maintained, tagged, and dated.
- d. In general fire extinguishers must be mounted such that travel distance to an extinguisher does not exceed 75 feet.

8. STORAGE OF FLAMMABLES IN STATE BUILDINGS

Storage of flammable materials shall be made in fireproof containers. State buildings and public places of assembly shall be regularly policed to clean up and place in fireproof containers all flammable materials. All places of storage shall be arranged and maintained in such a manner that exit from said places and access to said places for the purpose of fire fighting is not in any way impeded.

NOTE: Gasoline, paint, or other flammable liquids shall *not* be stored under stairwells or in halls, aisles, corridors, or passageways.

9. EVACUATION DIAGRAMS

Evacuation diagrams shall be placed on each floor on bulletin boards or areas where persons gather. Diagrams shall indicate where those individuals are and the safest and most direct route out of the building.

Periodic inspection of large assembly areas and unusual structures such as stadium press box, air supported structures, or tents shall be performed by the Office of Occupational and Environmental Safety.

NOTE: Test dates and inspection reports of emergency lights, alarm systems, and sprinkler systems can be obtained from Facility Services.

III. ADMINISTRATIVE ELEMENTS

A. HAZARD CONTROL

Identified hazards shall be corrected or made safe in the most expedient method available at the time. Reporting of hazards by all members of the Law Center community, including visitors shall be encouraged. Where a hazard has been identified, a means of tracking the corrective action to completion shall be employed.

Hazards reported to the administration shall result in an active response to check out the reported hazard, and to follow up with corrective action within the means of the recipient of the report. Where the recipient cannot correct the hazard, the information shall be forwarded to LSU Facility Services or to the Occupational and Environmental Safety (OES) office where action shall be initiated, and tracking employed to assure the condition is corrected.

Where temporary measures must be taken to guard against the hazardous condition, the person receiving the report should assure that these measures are taken, or request Facility Services or OES to follow up on the report to get these protective measures in place. LSU Police should be notified in the event immediate assistance is required to control access to hazardous locations by others.

Pocket pads for reporting hazards are available from the OES office.

B. SAFETY MEETINGS

Safety meetings on a regular basis can be effective accident prevention tools. Meetings are appropriate prior to and after the start of a new process/procedure--particularly if such process/procedure deals with hazardous materials and/or equipment. This is particularly important with regard to engineering and/or scientific endeavors.

Safety meetings should be on topics that are safety related, and have effect on the group involved. They should provide for input from attendees with notes taken on suggestions. Ideally, meetings for tradespeople should be held on a monthly basis with a presentation on a particular subject followed by adequate discussion. It is generally accepted that short, to-the-point meetings are best; it does not preclude that meetings directed toward a complex process/procedure cannot be considerably longer.

Safety meetings for faculty and academic units should be held on a quarterly or semester frequency. Minutes of all safety meetings shall be recorded and provided to the Director, or Department Head as requested and kept on hand for a minimum of one year. Minutes should include the attendance roster, the name of the person conducting the meeting, the date, subject of the meeting and any suggestions arising from employees/attendees.

OES will present safety meetings on request, or provide assistance to the person in charge of the meeting.

C. PRE-FIRE PLAN

Pre-fire plans are developed for buildings on campus to assist fire and emergency personnel in response activities.

D. ACCIDENT REPORTS

1. OCCUPATIONAL ACCIDENT OR ILLNESS REPORT is to be used as the basic form for reporting the accidents of employees. This report is mandatory; it is required by the State and serves as the link between the Law Center and Risk Management. The Occupational Accident or Illness Report shall be sent to HRM with a copy to the Office of Occupational and Environmental Safety. The Department Head shall also keep a file copy.

2. AUTOMOBILE ACCIDENT OR LOSS NOTICE is to be used when a Law Center-owned vehicle is involved. A copy of the report must be sent to the Director of Public Safety. The Office of the Public Safety will forward a copy of the report to the Office of Occupational and Environmental Safety.

3. LIABILITY ACCIDENT NOTICE shall be filled out in the event any visitor is injured on the Campus or in a University building. A copy of the report must be sent to the Executive Director, Public Safety and Risk Management. The Office of Public Safety will forward a copy of the report to the Office of Occupational and Environmental Safety.

4. LSU POLICE REPORTS are made for incidents such as fire, explosions, chemical spills, and other similar incidents where they are involved. Copies of these reports are forwarded to the Office of Occupational and Environmental Safety. They provide notification and information that can be used in accident investigations.

5. VERBAL REPORTS are provided to various safety and environmental groups, such as the LSU Police, Radiation Safety, and OES as required in Emergency Procedures.

E. ACCIDENT INVESTIGATIONS

Accidents must be investigated to an appropriate degree. As a result we have two levels of investigations, a formal and an informal investigation.

1. FORMAL INVESTIGATIONS

a. Formal investigations are conducted for serious accidents. Both Safety and the Department involved are participants in the investigation. The following incidents are the ones normally investigated in a formal investigation:

- i. Lost time accidents (Lost time is missing the next tour of duty/work day.)

- ii. Serious accidents or near misses without lost time such as explosions, fires, chemical spills, and electrical accidents
- b. Once an accident is reported, a decision on the need to conduct a formal investigation is immediately made by Department Director and OES. If either determines that a formal investigation is necessary, it will be held. The following steps should be taken:
 - i. Scene is secured
 - ii. Preliminary scene visit is made and information and evidence is gathered
 - iii. List of people to be interviewed is developed and interviews are conducted
 - iv. Accident Investigation Report and Action Plan is developed by Department and OES and routed to Department Heads for approval and guidance on implementation. (See investigations below)

2. INFORMAL INVESTIGATIONS BY SUPERVISORS

- a. Since the supervisor is the person charged with preventing accidents in his/her work group, that person should be actively involved in determining the causes and acting to correct the causes of accidents. As such the supervisor is the proper person to investigate the following types of accidents:
 - i. Accidents which cause visit to the doctor with no lost time
 - ii. Near misses that disrupt productivity but do not have potential for serious injury
- b. The supervisor's first duty is to assist the injured with obtaining medical attention. Supervisors are required to accompany the person to the physician if possible to explain to the physician the employee's job duties to allow proper determination as to the return to work restrictions. After this, the supervisor carries out the following steps:
 - i. The supervisor conducts an accident investigation as soon after the accident as practicable. Participation by Occupational and Environmental Safety is not required, but an OES representative is available to assist and participate if requested.
 - ii. The supervisor must complete an Action Plan and submit it to his/her supervisor, with a copy to the OES section. Even though the investigation is informal, the action plan must include "who, what, where and when" as these terms relate to the planned action.

3. THE INVESTIGATION PROCEDURE

Conducting the accident or incident investigation should follow an agenda which serves to assure that all causes are uncovered. Generally, the inquiry should follow the plan outlined below:

- a. Obtain background information on the job, the circumstances, work assignment, etc
- b. Establish events and job steps leading up to the accident (Job Safety Analysis to be performed as recommended by OES)
- c. Determine root causes of the accident

- d. Develop an Action Plan for prevention of recurrence:
 - i. What action is to be taken (include what, how, where)
 - ii. Who is responsible to do this on each element
 - iii. When will each step be completed
 - iv. Arrangements to follow up and assure the action is taken (quality control)

4. APPROVAL PROCESS AND ROUTING

- a. The action plan should be reviewed by the department director or dean for approval.
- b. If disciplinary action is appropriate, human resources should be consulted for guidance.
- c. The accident investigation should be routed to the OES office. A copy should be filed in the department of origin.

5. COMPLETING ITEMS IN THE ACTION PLAN

- a. Departments are to complete action items and report completion to OES on informal investigations.
- b. On formal investigations, OES will track the action plan to completion with the cooperation of the department involved

F. JOB SAFETY ANALYSIS

Job safety analysis (JSA) is a process where each step in a job or process is determined, hazards identified in each step, and corrective or protective measures determined to counter the hazards. Jobs or processes to have JSAs performed are identified by OES. The JSA may be performed by the department supervisor or by OES with the assistance of the supervisor. OES is always available for consultation and will provide a standard form on which to record the information. After the JSA is completed, the information gathered will be shared with affected employees and safety rules and procedures revised to accommodate the new plan as necessary. JSAs may be posted in the work area, included in procedure manuals, and / or posted on the Internet web page.

Identification of jobs and processes that will be evaluated with a JSA will be done by OES considering the severity of the activity, the trends discovered in accident/injury analysis, and upon new equipment/procedures being introduced in the workplace.

G. SAFETY AND HEALTH INSPECTIONS AND REPORTS

Note: Inspection report forms are provided for various inspection activities. These reports are contained in the Appendix and are available from OES.

1. SAFETY AND HEALTH INSPECTIONS

- a. Building inspections by the Building Coordinator must be conducted quarterly as a minimum.
- b. Inspections performed by OES personnel include inspections of high risk buildings/facilities, updates for the air flow velocity of fume hoods/ductwork, emergency showers and eyewash stations, and floor slip tests along with other inspections as necessary or as requested by university personnel.

Frequency of these inspections depends on policy/procedures.

- c. Inspections made by Facility Services personnel include fire extinguishers, fire alarms, sprinkler systems, smoke/heat detection systems, emergency lights, sentronic door closing systems, and fume hoods. These inspection frequencies vary, depending on regulatory requirements and university policy.
- d. Inspections by outside agencies such as DEQ, ORM, or the Office of the State Fire Marshal are conducted at their discretion, or upon request from individuals inside and outside of the university.

NOTE: Inspectors who, in the normal course of inspection, find empty extinguishers, leaking sprinkler heads/valves, broken smoke/heat detectors, etc., shall report same to Facility Services as soon as possible for repair or replacement.

IV. SAFETY

A. ELECTRICAL SAFETY

1. ELECTRIC CODES AND SAFETY STANDARDS

The Occupational Safety and Health Administration (OSHA) standards form the basis of our electrical safety rules. These standards apply to general industry and construction. OSHA draws its standards from the National Electric Code (NEC), National Electric Safety Code (NESC) and from consensus bodies such as ASTM and ANSI. All employees should be familiar with these requirements as they apply to their areas of work.

2. MEDICAL SERVICES AND FIRST AID

The Student Health Center and the Baton Rouge EMS unit provides emergency medical services and first aid on campus. To enhance our services for electrical workers who may be exposed to electric shock accidents, all electricians shall be trained in CPR and first aid treatment of severe shock and burn injuries.

3. USE OF ELECTRICALLY POWERED EQUIPMENT AND TOOLS

- a. All electrically powered equipment or hand tools, except double insulated hand tools, shall be grounded.
- b. Portable hand tools and electrically powered equipment shall be used with a ground fault circuit interrupter (GFCI) or an assured equipment grounding program (AEGP) (see "Ground Fault Circuit Protection" this section) shall be in effect.
- c. Electrical equipment shall be disconnected or the current otherwise interrupted while it is being adjusted or repaired.
- d. Permanent wiring shall be put in conduits.
- e. All breakers, motors, and appliance disconnects shall be labeled.
- f. Framing of electrical motors shall grounded.
- g. Outlets, switching, junction boxes, etc., shall be covered.
- h. Exposed noncurrent-carrying metal parts of fixed equipment that may become energized under abnormal conditions shall be grounded when in wet or damp locations; if electrical contact with metal, if operated in excess of 150 volts to ground, or in a hazardous location.

NOTE: Consider all exposed wires "hot" until verified otherwise.

4. GROUND FAULT CIRCUIT PROTECTION

- a. When using extension cords, portable electrically powered hand tools, appliances, or other electrically powered equipment outdoors or in an area under construction, they shall be of the 3-wire type (except double insulated tools) and shall be connected to a GFCI or an Assured Equipment Grounding Program (AEGP) shall be in effect.
- b. The AEGP requires regular inspections of all tools, cords, and electric devices. Appropriate documentation shall be maintained. Components of an AEGP are:

- i. A written description of the program including specific procedures.
- ii. Qualified employees appointed to run the program. More than one person shall be appointed.
- iii. All equipment, cords, etc., to be used shall be inspected for external defects each day. All defective equipment shall be tagged out until repairs are made. All defects, repairs, inspections, etc., shall be documented.

5. EXTENSION CORDS

GUIDELINES FOR EXTENSION CORD USE

Many questions have arisen regarding the restrictions on extension cords on campus. The following guidelines should be used by students and staff to assure that the extension cords in use do not violate good safety practices or fire codes. The National Electric Code (NEC) is the primary document that provides guidance in the use of extension cords. These guidelines are based on the NEC.

1. IN DORMITORIES AND OFFICE SETTINGS:

- a. Extension cords which have the UL label are approved, so long as the size and use is appropriate.
- b. Two and three conductor extension cords must have a minimum conductor size of 16 AWG copper.
- c. Extension cords are normally rated in amps, and must be used within the ampere rating. (Compare the amp rating of the appliance with the rating of the cord)
- d. Three pronged (three conductor) extension cords must be used when connecting electrical items that have three pronged plugins.
- e. Extension cords must not be run under rugs, mattresses, through doorways or windows, and must be protected from damage at all times.
- f. Three prong adaptors are not to be used with two conductor extension cords on the female end of the cord. Adaptors used on the wall outlet must be installed with a metal screw installed in the outlet. (Contact Facility Services for these installations)
- g. Splicing and "home repairs" of extension cords are not permitted unless performed by Facility Services. Insulation, strength and conductor size must not be compromised.
- h. Cords used in wet and/or outdoor locations should be protected by ground fault circuit interrupters.

1. ON MAINTENANCE AND CONSTRUCTION SITES:

- a. Extension cords with an equipment grounding conductor must be used at all times.
- b. Extension cords must be protected from damage, and not run through doorways or windows where the doors or windows may close, causing damage to the cord.
- c. Extension cords must be plugged into a circuit protected by a ground fault circuit interrupter on wet or outdoor construction and maintenance sites, or have the ground circuit checked for continuity in an assured grounding conductor program.
- d. Extension cords should be a minimum of 16 AWG and be rated for the equipment in use. The following is a guide that might be helpful in selecting the cord:

Extension Cord Ampere Rating		
Wire Size (Copper)	Single Phase Two and Three Conductor Cords	Three Phase Cords
16AWG	13 amps	10 amps
14AWG	18 amps	15 amps
12AWG	25 amps	20 amps
10AWG	30 amps	25 amps
8AWG	40 amps	35 amps
6AWG	55 amps	45 amps
4AWG	70 amps	60 amps
2AWG	95 amps	80 amps

- e. Splicing extension cords must be done in such a way that the insulation and conductivity of the wires are not compromised.
- f. Extension cords should not be run through water or allowed to have connections that may be exposed to puddling water.
 - a. Cords shall not be hung over nails, bolts, or sharp edges.
 - b. Cords shall not be laid in aisles unless protected from damage; they shall be so placed so as to not create a tripping hazard.
 - c. Cords shall not be used as a substitute for fixed wiring.
 - d. Cords shall not be run through holes in walls, ceiling, floors, doors, windows, or hung from light fixtures or attached to building surfaces.

6. HAZARDOUS LOCATIONS

- a. Standard electrical apparatus cannot be used in locations where flammable gases, vapors, dusts, and other easily ignitable materials are present.
- b. Before electrical equipment and its associated wiring is selected for a hazardous location, the exact nature of the flammable materials present should be determined.
- c. The National Electric Code, NFPA-70, Articles 500-503, shall be consulted before any use or installation of electrical equipment and associated wiring is selected.

B. STAIRS & LADDERS

1. GENERAL REQUIREMENTS

- a. A stairway or ladder must be provided at all worker points of access where there is a break in elevation of 19 inches (48 cm) or more and no ramp, runway, embankment, or personnel hoist is provided.
- b. When there is only one point of access between levels, it must be kept clear to permit free passage by workers. If free passage becomes restricted, a second point of access must be provided and used.
- c. Where there are more than two points of access between levels, at least one point of access must be kept clear.
- d. All stairway and ladder fall protection systems required by these rules must be installed and all duties required by the stairway and ladder rules must be performed before employees begin work that requires them to use stairways or ladders and their respective fall protection systems.

2. STAIRWAYS

- a. The following general requirements apply to all stairways used during the process of construction, as indicated:
 - i. Stairways that will not be a permanent part of the structure on which construction work is performed must have landings at least 30 inches deep and 22 inches wide (76 x 56 cm) at every 12 feet (3.7 m) or less of vertical rise.
 - ii. Stairways must be installed at least 30 degrees--and no more than 50 degrees--from the horizontal.
 - iii. Variations in riser height or stair tread depth must not exceed 1/4 inch in any stairway system, including any foundation structure used as one or more treads of the stairs.
 - iv. Where doors or gates open directly onto a stairway, a platform must be provided that extends at least 20 inches (51 cm) beyond the swing of the door.
 - v. Metal pan landings and metal pan treads must be secured in place before filling.
 - vi. All stairway parts must be free of dangerous projections such as protruding nails.
 - vii. Slippery conditions on stairways must be corrected.
 - viii. Workers may not use spiral stairways that will not be a permanent part of the structure.
- b. The following requirements apply to stairs in temporary service during construction:
 - i. Except during construction of the actual stairway, stairways with metal pan landings and treads must not be used where the treads and/or landings have not been filled in with concrete or other materials, unless the pans of the stairs and/or landings are temporarily filled in with wood or other materials. All treads and landings must be replaced when worn below the top edge of the pan.
 - ii. Except during construction of the actual stairway, skeleton metal frame structures and steps

must not be used (where treads and/or landings will be installed later) unless the stairs are fitted with secured temporary treads and landings.

- iii. Temporary treads must be made of wood or other solid material and installed the full width and depth of the stair.

3. STAIRRAILS AND HANDRAILS

The following general requirements apply to all stairrails and handrails:

- a. Stairways having four or more risers, or rising more than 30 inches (76 cm) in height--whichever is less--must have at least one handrail. A stairrail also must be installed along each unprotected side or edge. When the top edge of a stairrail system also serves as a handrail, the height of the top edge must be no more than 37 inches (94 cm) nor less than 36 inches (91.5 cm) from the upper surface of the stairrail to the surface of the tread.
- b. Winding or spiral stairways must have a handrail to prevent using areas where the tread width is less than 6 inches (15 cm).
- c. Stairrails installed after March 15, 1991, must be not less than 36 inches (91.5 cm) in height.
- d. Midrails, screens, mesh, intermediate vertical members, or equivalent intermediate structural members must be provided between the top rail and stairway steps to the stairrail system.
- e. Midrails, when used, must be located midway between the top of the stairrail system and the stairway steps.
- f. Screens or mesh, when used, must extend from the top rail to the stairway step and along the opening between top rail supports.
- g. Intermediate vertical members, such as balusters, when used, must not be more than 19 inches (48 cm) apart.
- h. Other intermediate structural members, when used, must be installed so that there are no openings of more than 19 inches (48 cm) wide.
- i. Handrails and the top rails of the stairrail systems must be able to withstand, without failure, at least 200 pounds (890 n) of weight applied within 2 inches (5 cm) of the top edge in any downward or outward direction, at any point along the top edge.
- j. The height of handrails must not be more than 37 inches (94 cm) nor less than 30 inches (76 cm) from the upper surface of the handrail to the surface of the tread.
- k. Stairrail systems and handrails must be surfaced to prevent injuries such as punctures or lacerations and to keep clothing from snagging.
- l. Handrails must provide an adequate handhold for employees to grasp to prevent falls.
- m. The ends of stairrail systems and handrails must be built to prevent dangerous projections, such as rails protruding beyond the end posts of the system.
- n. Temporary handrails must have a minimum clearance of 3 inches (8 cm) between the handrail and walls, stairrail systems, and other objects.
- o. Unprotected sides and edges of stairway landings must be provided with standard 42-inch (1.1 m) guardrail systems.

4. LADDERS

The following general requirements apply to all ladders, including job-made ladders:

- a. A double-cleated ladder or two or more ladders must be provided when ladders are the only way to enter or exit a work area having 25 or more employees, **or** when a ladder serves simultaneous two-way traffic.
- b. Ladder rungs, cleats, and steps must be parallel, level, and uniformly spaced when the ladder is in position for use.
- c. Rungs, cleats, and steps of portable and fixed ladders (except as provided below) must not be spaced less than 10 inches (25 cm) apart, nor more than 14 inches (36 cm) apart, along the ladder's side rails.
- d. Rungs, cleats, and steps of step stools must not be less than 8 inches (20 cm) apart, nor more than 12 inches (31 cm) apart, between center lines of the rungs, cleats, and steps.
- e. Rungs, cleats, and steps at the base section of extension trestle ladders must not be less than 8 inches (20 cm) nor more than 18 inches (46 cm) apart, between center lines of the rungs, cleats, and steps. The rung spacing on the extension section must not be less than 6 inches (15 cm) nor more than 12 inches (31 cm).
- f. Ladders must not be tied or fastened together to create longer sections unless they are specifically designed for such use.
- g. A metal spreader or locking device must be provided on each stepladder to hold the front and back sections in an open position when the ladder is being used.
- h. Two or more separate ladders used to reach an elevated work area must be offset with a platform or landing between the ladders, except when portable ladders are used to gain access to fixed ladders.
- i. Ladder components must be surfaced to prevent injury from punctures or lacerations, and prevent snagging of clothing.
- j. Wood ladders must not be coated with any opaque covering, except for identification or warning labels which may be placed only on one face of a side rail.

5. PORTABLE LADDERS

- a. Non-self-supporting and self-supporting portable ladders must support at least four times the maximum intended load; extra heavy-duty type 1A metal or plastic ladders must sustain 3.3 times the maximum intended load. The ability of a self-supporting ladder to sustain loads must be determined by applying the load to the ladder in a downward vertical direction. The ability of a non-self-supporting ladder to sustain loads must be determined by applying the load in a downward vertical direction when the ladder is placed at a horizontal angle of 75.5 degrees.
- b. The minimum clear distance between side rails for all portable ladders must be 11.5 inches (29 cm).
- c. The rungs and steps of portable metal ladders must be corrugated, knurled, dimpled, coated with skid-resistant material, or treated to minimize slipping.

C. MATERIAL HANDLING

The following are general safety rules and requirements regarding material handling and material handling equipment regularly used on campus.

1. LIFTING BY HAND

Lifting and carrying can be done without injury by using the following criteria:

a. Personal Protection

NOTE: Minor office material lifting is exempt from Personal Protection section of "Lifting By Hand."

- i. Hand protection shall be used when lifting; however, gloves or loose clothing shall not be worn around rotating and reciprocating equipment.
 - 1) Leather gloves and aprons shall be worn when handling rough or sharp objects.
 - 2) Chemical gloves, splash suits, and eye protection shall be worn when handling chemicals of any nature (corrosives, flammables, etc.).
- ii. Eye protection are recommended to be worn at all times.
- iii. Steel-toed shoes and/or shin guards are recommended to be worn at all times.

b. Body Condition

How much should you lift? Lifting capacity depends on body condition; that is, flexibility and strength, and physical make-up. To help your condition, build up your strength by a regular exercise program and stretch your body before doing any lifting.

c. Sizing Up The Load

Questions to ask:

- i. Is it too big for you to handle?
- ii. What about the shape? Is it irregular, square, rectangular, etc.?
- iii. Can you get a firm, comfortable grip?
- iv. How many loads are there and where are they going?

d. Lifting It Right

- i. There are six steps to proper lifting:
 - 1) Keep feet parted--one alongside the object and one behind the object. Comfortably spread feet give greater stability; the rear foot is in position for the upward thrust of the lift.
 - 2) Keep back straight, nearly vertical. Use the sit-down position to do so, but remember that "straight" does not mean absolutely "vertical". A straight back keeps the spine, back muscles, and organs of the body in correct alignment. It minimizes the compression of the guts that can cause hernia.
 - 3) Tuck in chin so the neck and head continue the straight back line and keep spine straight and firm.
 - 4) Grasp the object with the whole hand. The palm grip is one of the most important elements of correct lifting. The fingers and hand are extended around the object to be lifted. Use the full palm; fingers alone have very little power. Wearing gloves is recommended.
 - 5) Tuck elbows and arms in and hold load close to body. When the arms are held away

from the body, they lose much of their strength and power. Keeping the arms tucked in also helps keep body weight centered. See attached diagrams.

- 6) Keep body weight directly over feet. This provides a more powerful line of thrust and ensures better balance. Start the lift with a thrust of the rear foot.
 - ii. When setting the load down, the same six proper lifting steps shall be used in reverse.
 - iii. To change direction, the worker shall lift the object to the carrying position and turn the entire body including the feet. He/she shall avoid twisting the body. In repetitive work, the person and the material both shall be positioned to prevent twisting of the body when moving the material.
- e. Team Lifting
- i. When two or more people carry one object, they shall adjust the load so that it rides level.
 - ii. When long sections of material (pipe, lumber) are carried, the load shall be carried on the same shoulder and both persons shall walk in step.
 - iii. When team lifting, one person shall be designated to give the signal when to lift.
- f. Handling of Specific Shapes
- i. Barrels and drums
 - 1) It is recommended that a hand truck or other type of material handling equipment be used for lifting and transporting barrels and/or drums.
 - 2) If it is necessary to roll a barrel or drum, the worker shall push against the sides with both hands. To change directions, the drum or barrel shall be stopped, the direction changed by grabbing the upper and lower rim seams, and movement started.
 - 3) When uprighting a full drum, the six steps to safe lifting shall be adhered to.
 - ii. Long Objects (Pipe, Lumber, Barsteel, etc.)

There are two schools of thought on this. The method chosen shall be determined by the obstructions to be encountered.

 - 1) The item shall be carried on the shoulders with the front end held as high as possible to avoid striking other employees--especially when going around corners.
 - 2) The item shall be carried on the shoulders with the front end low so it does not catch overhead objects.
 - iii. Compressed gas cylinders
 - 1) Compressed gas cylinders may be rolled on the bottom edge for short distances. They shall never be dragged.
 - 2) Because of their shape, smooth surface, and weight, cylinders are difficult to carry by hand. Cylinders weighing more than 40 pounds total should be transported on a hand or motorized truck, suitably secured to keep them from falling.
- g. Items to remember when lifting by hand:
- i. Avoid twisting while turning with a load.
 - ii. Watch for narrow places when moving materials.

- iii. Avoid high reaching and lifting. A suitable ladder or platform shall be used to get up to load.
- iv. Do not jump with a load.
- v. Do not catch or throw loads.
- vi. Check the materials to be lifted for nails, splinters, rough strapping, or other things that might injure hands.
- vii. Ascertain good visibility--especially on stairs.

2. HANDTRUCKS

a. General

- i. Keep truck under control at all times.
- ii. Trucks shall be stored in designated areas--not in aisles.
- iii. Housekeeping--all aisles and loading areas shall be kept clear.
- iv. Always move the truck at a safe speed. Do not run.
- v. Loads shall be packed securely; avoid overhanging.
- vi. No riders or horseplay.
- vii. Hands shall be kept inside to protect them in narrow areas if the truck does not have knuckle guards or handles.

b. One Axle Handtrucks

- i. Keep the center of gravity of the load as low as possible. Place heavy objects below higher objects.
- ii. Place the load so it is carried by the axle, not the handles.
- iii. Load only to a height that will allow a clear view ahead.
- iv. When lifting from a horizontal position, have a straight back and lift with the legs. The load shall be put down the same way.
- v. Let the truck carry the load. The operator shall balance and push only.
- vi. Never walk backwards with a handtruck.
- vii. For extremely bulky or pressurized items, such as gas cylinders, strap or chain the item to the truck. Valve caps shall be on valves.
- viii. Always move the truck at a safe speed. Do not run.

c. Two Axle Trucks

NOTE: Many one axle handtruck rules apply here also.

- i. Load evenly to prevent tipping.
- ii. Push. Do not pull.

- iii. The truck shall not be loaded so high that the operator cannot see where in the direction of travel. If the load is high, two persons are needed; one to push and one to guide.
- iv. Truck contents shall be arranged so they will not fall if accidentally bumped.
- v. When entering elevators or tight areas, enter with the load forward. Make sure load is bound to truck.

D. SAFE USE OF HAND TOOLS AND PORTABLE POWER TOOLS

1. SCREWDRIVERS

- a. A screwdriver is the most commonly used and abused tool. The practice of using screwdrivers as punches, wedges, pinch bars, or pry bars shall be discouraged as this practice dulls blades and causes employee injury.
- b. Screwdriver tips shall be selected to fit the screw. Sharp- edged bits will not slip as easily as ones that are dull. Redress tips to original shape and keep them clean.
- c. Always hold work in a vise or lay it on a flat surface to lessen the chance of injury if the screwdriver should slip.
- d. When working near electrical equipment, screwdrivers shall be equipped with insulated handles (some also come with insulated blades).

2. HAMMERS

Wooden handles shall be straight grained and free of splinters or splinters. Once split, handles shall be replaced. Make sure handles are tightly wedged.

- a. Never strike a hammer with another hammer.
- b. Discard any hammer that shows chips, dents, etc. Redressing is not recommended.
- c. Safety glasses shall be worn while using a hammer or any other striking tool.
- d. Never use a common nail hammer to strike other metal objects such as cold chisels.

3. PUNCHES

Never use a punch with a mushroomed struck face or with a dull, chipped, or deformed point. Punches that are bent, cracked, or chipped shall be discarded. Safety glasses shall be worn while using a punch.

4. CHISELS

Choose a chisel only large enough for the job so the blade is used, rather than only the point or corner. Never use chisels with dull blades--the sharper the tool, the better the performance. Chisels that are bent, cracked, or chipped shall be discarded. Re-dress cutting edge or struck end to original contour as needed. When chipping or shearing with a cold chisel, the tool shall be held at an angle that permits one level of the cutting edge to be flat against the shearing plane.

5. HACKSAWS

- a. Hacksaws shall be adjusted and tightened in the frame to prevent buckling and breaking, but shall not be tight enough to break off the pins that support the blade. Install blade with teeth pointing forward.
- b. Pressure shall be applied on the forward stroke only. Lift the saw slightly, pulling back lightly in the

cut to protect the teeth. Do not bend and twist the blade. Never continue an old cut with a new blade.

6. FILES

- a. Select the right file for the job, making sure that it has a secure handle.
- b. Files shall be cleaned only with file-cleaning cards; never by striking. Never use a file as a pry or hammer, as chipping and breaking could result in user injury.
- c. Grasp the file firmly in one hand and use the thumb and forefinger of the other to guide the point.

7. AXES AND HATCHETS

- a. The cutting edges are designed for cutting wood and equally soft metal. Never strike against metal, stone, or concrete.
- b. Never use an axe or hatchet as a wedge or maul, never strike with the sides, and never use them with loose or damaged handles.
- c. Proper axe grip for a right-handed person is to have the left hand about 3" from the end of the handle and the right hand about $\frac{3}{4}$ of the way up. Reverse hands if left handed.
- d. Sharp, well-honed axes and hatchets are much safer to use because "glancing" is minimized.
- e. Safety glasses and safety shoes shall be worn and clear swinging checked before using axes and hatchets. Axes and hatchets shall be carried with the covers on.

8. KNIVES

- a. Knives cause more disabling injuries than any other hand tool. The hazards are that the hands may slip from the handle onto the blade or that the knife may strike the body or the free hand. Use knives with handle guards if possible. Knives shall be kept sharp and in their holders, cabinets, or sheaths when not in use; the cutting stroke shall be away from the body.
- b. Do not wipe dirty or oily knives on clothing. To clean, the blade shall be wiped with a towel or cloth with the sharp edge turned away from the wiping hand. Horseplay of any kind (throwing, "fencing," etc.) shall be prohibited.

9. CROWBARS

Use the proper kind and size for the job. Never use makeshifts such as pieces of pipe, as they may slip and cause injury. Crowbars shall have a point or toe of such shape that it will grip the object to be moved and a heel to act as a pivot or fulcrum. A block of wood under the heel may prevent slippage and help reduce injuries.

10. SHOVELS

- a. Shovel edges shall be kept trimmed and handles checked for splinters and cracks. Workers shall wear safety shoes with sturdy soles. They shall have feet well separated to get good balance and spring in the knees. The leg muscle will take much of the load. To reduce the chance of injury, the ball of the foot (not the arch) shall be used to press the shovel into the ground or other material.
- b. Dipping the shovel in water or greasing or waxing the shovel will prevent some materials from sticking.
- c. Gloves shall be worn while using shovels.

- d. When not in use, hang up shovels, stand them against the wall, or keep them in racks or boxes.

11. BOX AND SOCKET WRENCHES

- a. The use of box and socket wrenches is indicated where a heavy pull is necessary and safety is a consideration. Box and socket wrenches completely encircle the nut, bolt or fitting and grip it at all corners as opposed to two corners gripped by an open end wrench. They will not slip off laterally, and they eliminate the dangers of sprung jaws.
- b. Avoid overloading the capacity of a wrench by using a pipe extension on the handle or strike the handle of a wrench with a hammer. Hammer abuse weakens the metal of a wrench and causes the tool to break. Special heavy duty wrenches are available with handles as long as 3'. Where possible, special penetrating oil shall be used to first loosen tight nuts.

12. ELECTRIC SAWS

Electric saws shall be equipped with guards above and below the face plate. The lower guard shall be checked frequently to be sure it operates freely and encloses the teeth completely when not cutting. Circular saws shall not be crowded into the work. The motor shall be started and stopped outside the work. At the beginning and end of the stroke or when the teeth are exposed, the operator shall use extra care to keep the body out of the line-of-cut. Saws shall be equipped with "dead man" controls or a trigger switch that shuts off the power when pressure is released.

13. PORTABLE GRINDER

- a. Grinding wheels shall be guarded as completely as possible. They shall never be used at greater than their rated speed. To do so may result in the wheel breaking apart due to excessive centrifugal force. Guards shall be adjustable so the operator will be inclined to make the adjustments rather than remove the guard. However, the guard shall be easily removable to facilitate replacement of the wheel. In addition to mechanical guarding, the operator shall wear safety glasses at all times.
- b. Care shall be exercised to protect the grinder from damage.
- c. Since part of the wheel is exposed, it is important the employee hold the wheel so it does not touch his clothes or body.

14. AIR HOSES

- a. Workers shall be warned against disconnecting the air hose from the tool and using it to clean machines or remove dust from clothing. Air used for cleaning shall not exceed 30 psi and workers shall wear safety glasses at all times when using air hoses. Brushing or vacuuming equipment is recommended for removing dust from clothing.
- b. Air shall be shut off before attempting to disconnect the air hose from the air line. Any air pressure inside the line shall be released before disconnecting.

E. MACHINE SAFEGUARDING REQUIREMENTS

1. FLYWHEELS

- a. All parts of flywheels which are 7' or less above the floor or working platform shall be guarded.
- b. Screens shall be placed in front of all flywheel spokes to protect against accidental contact by pipe, bars, rods, and similar materials.

- c. Flywheel pits shall be surrounded with a standard railing and a toeboard not less than 6" high with standard railing, toe-board, and spoke guard showing.

2. MACHINE GUARDS

- a. Where guard or enclosure is within 2" of moving parts, openings through the guard shall not be $>3/8"$.
- b. If guards are $>4"$ and less than $<15"$ from moving parts, then the largest opening shall not be $>2"$. Where slatted guards are used, the opening shall not be $>1"$.
- c. Inclined belt guards shall be installed so that the vertical clearance between the lower run of the belt and the floor shall not be $<7'$ at any point outside of the guard.
- d. Any panel in a guard exceeding 6 ft² or 42" in either dimension shall be supported by an additional frame member.
- e. A standard railing placed not $<15"$ nor $>20"$ from a flywheel, is acceptable; but a railing shall not be used where other types of guards are specifically required such as guards for gears, sprockets, and V-belts.
- f. When frequent oiling must be done inside the guard, openings with hinged or sliding self-closing covers shall be provided. All points not readily accessible shall have oil fed tubes or grease gun connections outside the guard if lubricant is to be added while machinery is in motion.
- g. Self-lubricating bearings are recommended.

3. GEARS, SPROCKETS, FRICTION DRIVES

- a. All gears or sprockets shall be completely enclosed or shall be guarded with side flanges extending inward beyond the roots of the teeth.
- b. All spokes on open web gears, sprockets, or friction drives shall be guarded to prevent accidental contact.
- c. The contact points of all friction drives must be enclosed.

4. BELT, CHAIN OR ROPE DRIVES

- a. Single or multiple V-belts, located 7' or less from the floor or working platform shall be completely enclosed.
- b. Belt, chain, or rope drives 7' or less above the floor or platform shall be guarded. The guard shall extend to at least 15" above the belt or to a height of 7'; however, where both runs of a horizontal belt are 42" or less from the floor, the belt shall be fully enclosed.
- c. Overhead horizontal drives with a lower run of 7' or less from the floor or platform shall be guarded on the bottom and sides to a height of not $<7'$, or 15" above the lower run.
- d. Horizontal flat belts and chain or rope drives, regardless of height above the floor or platform, shall be guarded for the entire length if located over passageways or workplaces. The guards shall follow the line of the pulley to the ceiling or to the nearest wall, thus enclosing the belt effectively. Where this is impractical, the guard shall enclose the top and bottom runs of the belt and the faces of the pulleys. The guards shall be of sufficient strength to restrain broken belts or drives.

5. SHAFTING

- a. All horizontal shafting 7' or less from the floor, working platforms, or runways shall be guarded.

- b. All vertical or inclined shafting 7' or less from the floor, working platforms, or runways shall be guarded.
- c. Shafting under benches or tables shall (1) be completely enclosed, or (2) be guarded by a trough which shall extend at least 2" above or below the shafting; open space is not to exceed 6" below the table or above the floor, or (3) be protected with a rigid guard from the underside of the bench to 2" below the bottom line of shafting.
- d. Projecting shaft ends lower than 7' from the ceiling or story base shall either be cut off smooth within one-half the diameter of the shaft or shall be guarded by a non-rotating guard.
- e. Unused keyways shall be filled, covered, or guarded.

6. BELT CONVEYORS

- a. Means for stopping the motor or engine shall be provided at the operator's station and also at the motor or engine.
- b. Conveyor systems shall be equipped with an audible warning system to be sounded immediately before starting up the conveyor.
- c. Emergency stop switches shall be arranged so that the conveyor cannot be started again until the actuating loop switch has been reset to running or "ON" position.
- d. All conveyors passing over occupied locations shall be guarded so as to prevent material from falling.
- e. All belt conveyor head, tail, tension, and dip take-up pulleys shall be guarded to cover the entire sides of the pulleys and along the run of the belt a sufficient distance so that a person cannot reach behind the guard and become caught in the nip point between the belt and pulley.

F. VEHICLE OPERATION

1. INSPECTION

- a. Operators shall be responsible for visually checking the vehicle for safety prior to placing it in motion. Each vehicle's safety features should be checked before use each day, using the appropriate checklist for each department.
- b. Department supervisors shall be responsible for assuring that fluid levels are checked at least weekly for vehicles used on a routine basis. Other vehicles should be checked before each use.

3. TRAINING

- a. Operators of vehicles must be properly licenced for the vehicle being driven. For example, drivers of vans and buses which carry 16 or more passengers must have a commercial drivers license with passenger endorsement.
- b. All vehicle operator shall be trained and have motor vehicle records checked in accordance with the Safe Driver Program located in the appendix.

4. ACCIDENTS

Accidents in state vehicles and in personal vehicles being used for state purposes shall be reported as soon as possible to the appropriate supervisor.

5. GENERAL

- a. Vehicle operators shall know and observe all traffic laws.
- b. At least a 2 second following distance will be kept at all times. Following distances will be increased in adverse conditions to at least 3 seconds.

6. SAFE DRIVERS PROGRAM

LSU Law Center

The LSU Law Center will follow the guidelines for a driver safety program as outlined in the Loss Prevention Manual of the State Office of Risk Management. The University's Executive Director, Public Safety and Risk Management assumes the role of the State Office of Risk Management on the LSU A & M campus. The following administrative procedures should be followed in carrying out this program.

Driver Record Checks

Driver record checks are required to be made annually on staff and faculty drivers, *including student workers*, who drive state vehicles or personal vehicles on state business. In order for this to be accomplished, department heads must submit form DA2054 (Authorization and Driving History Form) on a yearly basis to the Property Management Office on drivers in their departments who are expected to drive on a routine basis. HRM will then submit a listing of the drivers to the Office of Motor Vehicles to obtain driver history records for evaluation. Forms do not have to be supplied for students *or employees* who may *only* be asked to drive in *emergency or* non-recurring circumstances. *In these cases* the supervisor must assure that the driver possesses a valid driver's license for the type vehicle to be driven prior to authorizing the driving assignment.

On new employees, the hiring supervisor must determine the new employee's driving status based on the job description and assure that the driving record is obtained, reviewed and attached prior to sending form DA2054 to Property Management. The state will provide the driver's driving history if the LSU supervisor submits a request with the following information on LSU letterhead to the **Office of Motor Vehicles, PO Box 64886, Baton Rouge, LA 70896:**

Full Name of Driver

Driver's License Number

Date of Birth

Social Security Number

Upon reviewing the driving record and discovering that a driver is a "high risk driver," the Property Management Office or department head will *immediately* send the information to the Executive Director, Public Safety and Risk Management for a final determination on driving status.

A "high risk driver" is defined as:

- ? An individual who has three or more convictions, guilty pleas and/or nolo contendere pleas for moving violations in a single year, or

- ? An individual who has a single conviction, guilty plea or nolo contendere plea for operating a vehicle while intoxicated, hit and run driving, vehicular negligent injury, reckless operation of a vehicle or similar violation within a single year.

Defensive Driving Training

Defensive driving training must be provided to employees who will drive state vehicles on a regular, routine basis. The training is free of charge and is provided through the State Office of Risk Management (ORM). ORM will provide “train the trainer” sessions for the departments when they want their own instructors trained. Department heads are responsible for obtaining this training for new drivers, and for assuring that the training is repeated every 3 years. The defensive driving training may be scheduled as part of follow-up action when a driver has a preventable accident, or when driving performance or history reveals a need for additional training.

Records of this training must be kept by the departments. Training assistance can be obtained from the LSU Office of Occupational and Environmental Safety (OES).

Accident Reporting and Investigations

Vehicle accidents must be reported and investigated in a timely manner using form DA2041. Copies of this form may be obtained from the LSU Office of Public Safety and Risk Management.

V. INDUSTRIAL HYGIENE

A. HAZARDOUS MATERIAL

1. HAZARDOUS MATERIAL INFORMATION

Development, Preparedness, and Response Rules

(Act 435 of the 1985 Louisiana Legislative Regular Session)

The purpose of the Act is to insure that the hazards of all chemicals produced, imported, consumed, applied, transported, stored, or emitted in Louisiana are communicated to appropriate emergency response organizations, local information repositories, and to the general public upon request.

OES's role in responding to the requirements of this Act is covered in Section VII of the manual.

2. HAZARD COMMUNICATION PROGRAM

a. General Program Information

The purpose of this program is to make employees aware of the hazards of chemicals and provide them information on how to protect themselves. The LSU written Hazard Communication Plan can be found in the Appendix. This plan has been developed based on the OSHA Hazard Communication Standard and addresses hazardous material identification, use of material safety data sheets, employee training, and labeling.

b. Responsibilities

i. Vice Chancellors, Directors, Department Heads, Managers and Supervisors shall:

- 1) Comply with the specific requirements of the program.
- 2) Maintain a current list of chemicals in the work place. Update the list on an ongoing basis via the Internet.
- 3) Ensure that minimum amounts of chemicals are maintained in the workplace.
- 4) Ensure that MSDSs are readily available to employees.
- 5) Ensure that necessary physical or toxic warning signs are posted in those areas where special notices are required.
- 6) Ensure that each work area requiring specific personal protective equipment is posted with appropriate warning signs. Department Heads/Supervisors shall make appropriate personal protective equipment available as needed.
- 7) Inform any contractor working in their area of chemicals to which their employees are exposed. Contractors must reciprocate on chemicals used in their work. MSDS information shall be exchanged.
- 8) Train their employees regarding the chemicals in the workplace, the location and operation of controls, procedures used to protect themselves and other workers, emergency plans and location of MSDS or information related to chemicals in the workplace. (Note: Much of the above can be handled in safety meetings.)

ii. The Occupational and Environmental Safety Office is responsible for:

- 1) Establishment of an MSDS library/access system via the Internet.

- 2) Assisting departments in determining proper use, storage and labeling of chemicals.
 - 3) Assisting departments with employee training. This shall be coordinated through the Safety and Environmental Training Officer.
 - 4) Assessing chemical inventories provided by LSU departments and ensure that MSDSs are available via the Internet.
- iii. University Stores shall:
- 1) Ensure that each container of a chemical received is properly labeled.
 - 2) Ensure that each container of a chemical shipped to departments is properly labeled.
 - 3) Ensure employees are properly trained in handling chemicals and in spill response.
- iv. Employees shall:
- 1) Learn about the chemical and physical hazards of chemicals in their workplace and how to protect themselves.
 - 2) Comply with the chemical safety requirements of LSU's hazard communication program and the MSDS sheets for a particular chemical.
 - 3) Immediately report spills or suspected spills of chemicals.
 - 4) Report any problems with storage or use of chemicals.
 - 5) Use only those chemicals for which they have received training.
 - 6) Use chemicals only for the tasks designated and covered in standard operating procedures, and protect other employees from these hazards.
 - 7) Inform their supervisors of changes in operations that could affect the safety and health of the job site or work area.
 - 8) Use personal protective equipment as specified by the MSDS.
- v. Contractors' responsibilities:
- 1) Comply with all aspects of LSU's Hazard Communication Program and OSHA's Hazard Communication Standard, 29 CFR 1910.1200.
 - 2) Ensure Contractor employees are properly trained.
 - 3) Monitor and ensure proper storage and use of chemicals by Contractor employees.
 - 4) Properly dispose of chemicals and hazardous waste.
- c. Training Program
- Department Heads/Supervisors shall provide training to affected employees annually, or when changes in operations warrant. Occupational and Environmental Safety can assist in this effort. The training shall include the following points:
- i. Physical and health hazards of the chemicals or materials in the workplace and all information on the MSDS that may affect employees.
 - ii. Methods that may be used to detect the presence of a chemical or material by visual appearance, odor, irritation (skin, headaches, coughing).
 - iii. Measures used to protect the employee (engineering design, barriers, ventilation, operating procedures, special training, etc.).

- iv. Measures employees can take to protect themselves from exposure (work practices, respiratory equipment, eye protection, other personal protective equipment, special training, etc.).
- v. Details of the Hazard Communication Program.

An outline of a hazard communication training program is contained in the appendix.

3. HAZARDOUS MATERIALS DEFINITIONS

a. CHEMICAL

"Chemical" means any element, chemical compound or mixture of elements and/or compounds.

b. COMBUSTIBLE LIQUID

"Combustible liquid" means any liquid having a flashpoint at or above 100 deg. F (37.8 deg. C), but below 200 deg. F (93.3 deg. C), except any mixture having components with flashpoints of 200 deg. F (93.3 deg. C), or higher, the total volume of which make up 99 percent or more of the total volume of the mixture.

c. COMPRESSED GASES

- i. A gas or mixture of gases having, in a container, an absolute pressure exceeding 40 psi at 70 deg. F (21.1 deg. C); or
- ii. A gas or mixture of gases having, in a container, an absolute pressure exceeding 104 psi at 130 deg. F (54.4 deg. C) regardless of the pressure at 70 deg. F (21.1 deg. C); or
- iii. A liquid having a vapor pressure exceeding 40 psi at 100 deg. F (37.8 deg. C) as determined by ASTM D-323-72.

d. CONTAINER

"Container" means any bag, barrel, bottle, box, can, cylinder, drum, reaction vessel, storage tank, or the like that contains a hazardous chemical. For purposes of this section, pipes or piping systems, and engines, fuel tanks, or other operating systems in a vehicle, are not considered to be containers.

e. EXPLOSIVE

"Explosive" means a chemical that causes a sudden, almost instantaneous release of pressure, gas, and heat when subjected to sudden shock, pressure, or high temperature.

f. EXPOSURE OR EXPOSED

"Exposure or exposed" means that an employee is subjected in the course of employment to a chemical that is a physical or health hazard, and includes potential (e.g. accidental or possible) exposure. "Subjected" in terms of health hazards includes any route of entry (e.g. inhalation, ingestion, skin contact or absorption.)

g. FLAMMABLE

"Flammable" means a chemical that falls into one of the following categories:

- i. "Aerosol, flammable" means an aerosol that, when tested by the an approved method described yields a flame projection exceeding 18 inches at full valve opening, or a flashback (a flame extending back to the valve) at any degree of valve opening;
- ii. "Gas, flammable" means:
 - 1) A gas that, at ambient temperature and pressure, forms a flammable mixture with air at a

concentration of thirteen (13) percent by volume or less; or

- 2) A gas that, at ambient temperature and pressure, forms a range of flammable mixtures with air wider than twelve (12) percent by volume, regardless of the lower limit;

- iii. "Liquid, flammable" means any liquid having a flashpoint below 100 deg. F (37.8 deg. C), except any mixture having components with flashpoints of 100 deg. F (37.8 deg. C) or higher, the total of which make up 99 percent or more of the total volume of the mixture.
- iv. "Solid, flammable" means a solid, other than a blasting agent or explosive, that is liable to cause fire through friction, absorption of moisture, spontaneous chemical change, or retained heat from manufacturing or processing, or which can be ignited readily and when ignited burns so vigorously and persistently as to create a serious hazard. A chemical shall be considered to be a flammable solid if, when tested by an approved method, it ignites and burns with a self-sustained flame at a rate greater than one-tenth of an inch per second along its major axis.

h. FLASHPOINT

"Flashpoint" means the minimum temperature at which a liquid gives off a vapor in sufficient concentration to ignite when tested as follows:

- i. Tagliabue Closed Tester (See American National Standard Method of Test for Flash Point by Tag Closed Tester, Z11.24-1979 (ASTM D 56-79)) for liquids with a viscosity of less than 45 Saybolt Universal Seconds (SUS) at 100 deg. F (37.8 deg. C), that do not contain suspended solids and do not have a tendency to form a surface film under test; or
- ii. Pensky-Martens Closed Tester (see American National Standard Method of Test for Flash Point by Pensky-Martens Closed Tester, Z11.7-1979 (ASTM D 93-79)) for liquids with a viscosity equal to or greater than 45 SUS at 100 deg. F (37.8 deg. C), or that contain suspended solids, or that have a tendency to form a surface film under test; or
- iii. Setaflash Closed Tester (see American National Standard Method of Test for Flash Point by Setaflash Closed Tester (ASTM D 3278-78)).

Organic peroxides, which undergo autoaccelerating thermal decomposition, are excluded from any of the flashpoint determination methods specified above.

i. HAZARD WARNING

"Hazard warning" means any words, pictures, symbols, or combination thereof appearing on a label or other appropriate form of warning which convey the specific physical and health hazard(s), including target organ effects, of the chemical(s) in the container(s). (See the definitions for "physical hazard" and "health hazard" to determine the hazards which must be covered.)

j. HAZARDOUS CHEMICAL

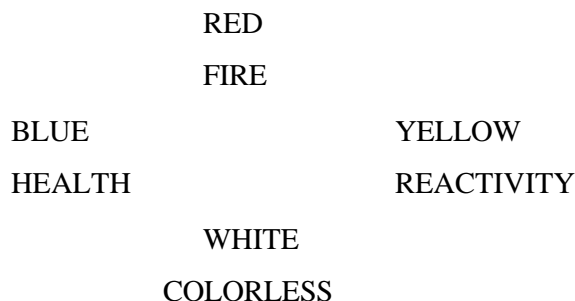
"Hazardous chemical" means any chemical which is a physical hazard or a health hazard.

k. HEALTH HAZARD

"Health hazard" means a chemical for which there is statistically significant evidence based on at least one study conducted in accordance with established scientific principles that acute or chronic health effects may occur in exposed employees. The term "health hazard" includes chemicals which are carcinogens, toxic or highly toxic agents, reproductive toxins, irritants, corrosives, sensitizers,

hepatotoxins, nephrotoxins, neurotoxins, agents which act on the hematopoietic system, and agents which damage the lungs, skin, eyes, or mucous membranes. Appendix A provides further definitions and explanations of the scope of health hazards covered by this section, and Appendix B describes the criteria to be used to determine whether or not a chemical is to be considered hazardous for purposes of this standard.

1. THE NFPA HAZARD IDENTIFICATION SYSTEM (DIAMOND)



Numerical rating from 0-4 with the hazards becoming more extreme as they are upscaled.

HEALTH--BLUE

- 4 A few whiffs of the gas or vapor could cause death; liquid penetration could be fatal.
- 3 Material is extremely dangerous, but area may be entered if fully protected.
- 2 Material hazardous to health, but area may be entered freely if SCBA is used.
- 1 Material is only slightly hazardous to health.
- 0 Material offers no health hazard.

FIRE--RED

- 4 Flash point below 73 deg F.
- 3 Flash point below 100 deg F.
- 2 Flash point between 100 and 200 deg F.
- 1 Flash point above 200 deg F.
- 0 Materials that will not burn.

REACTIVITY--YELLOW

- 4 May detonate
- 3 Shock and heat may detonate
- 2 Violent chemical change
- 1 Unstable if heated
- 0 Stable.

COLORLESS

Special reactive materials such as:

- Oxidizers: OX
- Corrosive: CORR
- Radiation:
- Water Reactive: -W-

m. ORGANIC PEROXIDE

"Organic peroxide" means an organic compound that contains the bivalent -O-O-structure and which may be considered to be a structural derivative of hydrogen peroxide where one or both of the hydrogen atoms has been replaced by an organic radical.

n. OXIDIZER

"Oxidizer" means a chemical other than a blasting agent or explosive as defined in 1910.109(a), that initiates or promotes combustion in other materials, thereby causing fire either of itself or through the release of oxygen or other gases.

o. PHYSICAL HAZARD

"Physical hazard" means a chemical for which there is scientifically valid evidence that it is a combustible liquid, a compressed gas, explosive, flammable, an organic peroxide, an oxidizer, pyrophoric, unstable (reactive) or water-reactive.

p. PYROPHORIC

"Pyrophoric" means a chemical that will ignite spontaneously in air at a temperature of 130 deg. F (54.4 deg. C) or below.

q. REACTIVE CHEMICALS

"Unstable (reactive)" means a chemical which in the pure state, or as produced or transported, will vigorously polymerize, decompose, condense, or will become self-reactive under conditions of shocks, pressure or temperature. "Water-reactive" means a chemical that reacts with water to release a gas that is either flammable or presents a health hazard.

4. CHEMICAL HANDLING AND STORAGE

a. General Considerations

- i. Avoid storing equipment and material on top of cabinets.
- ii. Do not store materials on top of high cabinets where they will be difficult to reach.
- iii. Keep exits, passageways, areas under tables or benches, and emergency equipment areas free of stored equipment and materials.
- iv. Label all chemical containers appropriately.
- v. Place the users name and the date received on all purchased materials in order to facilitate inventory control of the materials.
- vi. Provide a definite storage place for each chemical and return the chemical to that location after each use.
- vii. Avoid storing chemicals on bench tops, except of those chemicals being used currently.
- viii. Avoid storing chemicals in laboratory hoods, except for those being used currently.
- ix. Store volatile toxins and odoriferous chemicals in a ventilated cabinet. Check with the institution's environmental health and safety officer.
- x. Provide ventilated storage near laboratory hoods.
- xi. If a chemical does not require a ventilated cabinet, store it inside a closable cabinet or on a shelf that has a lip to prevent containers from sliding off in the event of a fire, serious

- accident, or earthquake.
- xii. Do not expose stored chemicals to heat or direct sunlight.
 - xiii. Observe all precautions regarding the storage of incompatible chemicals.
 - xiv. Separate chemicals into compatible groups and store alphabetically within compatible groups. See below for one suggested method for arranging chemicals in this way.

Related and Compatible Storage Groups

Inorganic Family

Metals, hydrides
 Halides, sulfates, sulfites, thiosulfates, phosphates, halogens
 Amides, nitrates (except ammonium nitrate), nitrites, azides
 Hydroxides, oxides, silicates, carbonates, carbon
 Sulfides, selenides, phosphides, carbides, nitrides
 Chlorates, perchlorates, perchloric acid, chlorites, hypochlorites, peroxides, hydrogen peroxide
 Arsenates, cyanides, cyanates
 Borates, chromates, manganates, permanganates,

Nitric acid, other inorganic acids

Sulfur, phosphorus, arsenic, phosphorus pentoxide

Organic Family

Acids, anhydrides, peracids
 Alcohols, glycols, amines, amides, imines, imides
 Hydrocarbons, esters, aldehydes
 Ethers, ketones, ketenes, halogenated hydrocarbons, ethylene oxide
 Epoxy compounds, isocyanates
 Peroxides, hydroperoxides, azides
 Sulfides, polysulfides, sulfoxides, nitrites
 Phenols, cresols

- xv. Store flammable liquids in approved flammable liquid storage cabinets.
- b. Containers and Equipment
- i. Use corrosion-resistant storage trays or secondary containers to retain materials if the primary container breaks or leaks.
 - ii. Provide vented cabinets beneath laboratory hoods for storing hazardous materials. (This encourages the use of the hoods for transferring such materials.)
 - iii. Use chemical storage refrigerators only for storing chemicals.
 - iv. Label these refrigerators with the following signage: NO FOOD-CHEMICAL STORAGE
 - v. Seal containers to minimize escape of corrosive, flammable, or toxic vapors.
 - vi. Label all materials in the refrigerator with contents, owner, date of acquisition or preparation, and nature of any potential hazard.

- vii. Do not store flammable liquids in a refrigerator unless it is approved of such storage. Such refrigerators are designed not to spark inside the refrigerator. If refrigerated storage is needed inside a flammable-storage room, it is advisable to choose an explosion-proof refrigerator.
- c. Storing Highly Reactive Substances
- i. Consider the storage requirements of each highly reactive chemical prior to bringing it into the laboratory.
 - ii. Consult the MSDSs or other literature in making decisions about storage of highly reactive chemicals.
 - iii. Bring into the laboratory only the quantities of material you will need for your immediate purposes (less than 3- to 6-month supply, the length depending on the nature and sensitivity of the materials).
 - iv. Label, date, and inventory all highly reactive materials as soon as received. Make sure the label states, **DANGER! HIGHLY REACTIVE MATERIAL!**
 - v. Do not open a container of highly reactive material that is past its expiration date. Call your institution's hazardous waste coordinator for special institution's hazardous waste coordinator for special instructions.
 - vi. Do not open a liquid organic peroxide or peroxide former if crystals or a precipitate are present. Call your institution's hazardous waste coordinator for special instructions.
 - vii. Dispose of (or recycle) highly reactive material prior to expiration date.
 - viii. Segregate the following materials:
 - 1) oxidizing agents from reducing agents and combustibles
 - 2) powerful reducing agents from readily reducible substrates
 - 3) pyrophoric compounds from flammables, and
 - 4) perchloric acid from reducing agents.
 - ix. Store highly reactive liquids in trays large enough to hold the contents of the bottles.
 - x. Store perchloric acid bottles in glass or ceramic trays.
 - xii. Store peroxidizable materials away from heat and light.
 - xiii. Store materials that react vigorously with water away from possible contact with water.
 - xiv. Store thermally unstable materials in a refrigerator. Use a refrigerator with these safety features:
 - 1) all spark-producing controls on the outside,
 - 2) a magnetic locked door, and
 - 3) an alarm to warn when the temperature is too high.
 - xv. Store liquid organic peroxides at the lowest possible temperature consistent with the solubility or freezing point. Liquid peroxides are particularly sensitive during phase changes.
 - xvi. Inspect and test-peroxide-forming chemicals periodically (these should be labeled with an acquisition or expiration date) and discard containers that have exceeded their safe storage lifetime.
 - xvii. Store particularly sensitive materials or larger amounts of explosive materials in explosive

relief boxes.

- xviii. Restrict access to the storage facility.
- xix. Assign responsibility for the storage facility to one primary person and a backup person. Review this responsibility at least yearly.

d. Storing Toxic Substances

- i. Store chemicals known to be highly toxic (including carcinogens) in ventilated storage in unbreakable, chemically resistant secondary containers.
- ii. Keep quantities at a minimum working level.
- iii. Label storage areas with appropriate warning signs, such as:
CAUTION! REPRODUCTIVE TOXIN STORAGE or
CAUTION! CANCER-SUSPECT AGENT STORAGE

B. INDOOR AIR QUALITY AND SANITATION

1. INDOOR AIR QUALITY RULES

Staff, faculty and students can assist in controlling indoor air quality by following the guideline below:

- a. Cap chemical containers when not in use.
- b. Clean up spills of chemical or waste products immediately.
- c. Report need for repairs to facilities and equipment which introduce mold/mildew into the building, such as a leaking roofs, pipes, drains, etc.
- d. Conduct experiments which pollute the indoor air either inside hoods, or outside the building.
- e. Prevent outdoor air contamination from entering buildings. (Example: during roofing operations, close vents and windows.)
- f. Maintain rooms, especially carpets and floors, in clean, sanitary condition at all times.
- g. Assure trash is collected and emptied frequently.
- h. Report problems with air quality to supervisor/OES.
- v. Warn occupants and work out necessary arrangement to prevent exposure before painting, treating, or demolition which may affect indoor air quality.

2. HOUSEKEEPING

Inadequate housekeeping can cause indoor air quality problems -- buildings should be kept clean. Also, cleaning materials themselves may be pollutant sources that produce odors and emit a variety of chemicals. Select cleaning methods that are effective for the given need. Read product labels and Material Safety Data Sheets (MSDS) on all cleaning products used in buildings. The housekeeping staff will be the most highly exposed to the chemicals in cleaning products. Buy products with the least adverse impact on human health.

- a. Housekeeping Specific Steps
 - i. Prepare and follow written housekeeping procedures that detail the proper use, storage and purchase of cleaning materials.
 - ii. Be aware of the housekeeping products and equipment used in buildings, particularly those

that are potential irritants or have other IAQ impacts.

- iii. Purchase the safest available housekeeping products that meet cleaning needs.
- iv. Educate housekeeping staff or contractors about proper use of cleaning materials, cleaning schedules, purchasing, materials storage and trash disposal.

b. Training

It is important that the housekeeping staff, whether they are in-house staff or contractors, be trained on how your housekeeping procedures and products may affect IAQ. In fact, OSHA's Hazard Communication Standard (29 CFR 1910.1200) requires employers to explain the labels and MSDSs of all hazardous chemicals used, even infrequently, by an employee, and to train those employees in how to protect themselves from emergencies.

3. HVAC PREVENTIVE MAINTENANCE

A written preventive maintenance program is an effective tool for improving IAQ. The plan should include monitoring, inspecting and cleaning HVAC components such as outside air intakes, outside air dampers, air filters, drain pans, heating and cooling coils, the interior of air handling units, fan motors and belts, air humidification, controls and cooling towers.

a. Preventive Maintenance Specific Steps

- i. Develop and follow a preventive maintenance plan that includes maintenance schedules. Activities in the plan should include:

- 1) Inspect outside air dampers for nearby sources of contamination,
- 2) Ensure that air dampers are clear of obstruction and operating properly,
- 3) Regularly replace or clean air filters,
- 4) Clean and inspect drain pans,
- 5) Inspect and clean heating and cooling coils,
- 6) Inspect and clean as warranted interior of air handling units,
- 7) Inspect fan motors and belts,
- 8) Regularly inspect and clean air humidification equipment and controls,
- 9) Inspect, clean and treat cooling towers, and
- 10) Inspect and clean as needed air distribution pathways and variable air volume (VAV) boxes.

- ii. Update your maintenance plan when equipment is added, removed or replaced.

- b. The frequency of maintenance activities may vary from building to building. It is important to develop a maintenance schedule based on the needs of the equipment and building. However, the schedule should ensure that all equipment is in good, sanitary condition and is operating as close to design set points as possible.

C. ASBESTOS

1. GENERAL

Asbestos is a mineral rock mined from the earth in much the same ways as other minerals such as iron, lead, and copper. However, instead of crushing up into dust particles, asbestos divides into millions of

fibers. These fibers come in three common varieties: chrysotile, amosite, and crocidolite. All three varieties exhibit substantial resistance to heat and chemicals and thus have been used for many commercial and industrial purposes. In fact, asbestos has been used in more than 3,000 products. It has been apparent for some time that asbestos fibers can cause lung disease. Accordingly, the Occupational Safety and Health Administration (OSHA), the Environmental Protection Agency (EPA) and subsequently the Louisiana Department of Environmental Quality (DEQ) have developed strict regulations regarding the use, removal, and disposal of asbestos and asbestos containing material.

Removal and disposal of asbestos and/or asbestos containing material is a very exacting process and must be done only by individuals who have been specially trained and certified to perform such tasks.

Anticipated work that might involve asbestos or asbestos containing material shall be coordinated through Facility Services and the Office of Occupational and Environmental Safety. The above is true if it is only suspected that asbestos could be involved. Removal of materials such as floor tiles, acoustical ceiling tiles, ceiling and wall plaster, insulated pipes, or removal of insulation from pipes or any sprayed or trowled on material within a building is not acceptable unless done by Facility Services's trained and certified workers.

If a building occupant suspects asbestos problems, i.e. dust or fallen material on floors, exposed pipe insulation, etc., he or she shall report it to Facility Services or Office of Occupational and Environmental Safety. The presence of asbestos containing materials does not mean the health of building occupants is endangered. If asbestos containing materials remain in good condition and are unlikely to be disturbed, exposure will be negligible. However, when fibers are released, they can create a potential hazard for building occupants.

2. RESPONSIBILITIES

a. Occupational and Environmental Safety

- i. Oversight of occupational and environmental rules and procedures relating to asbestos.
- ii. Point of contact to ensure compliance with OSHA and La. DEQ regulations.
- iii. Provide asbestos awareness training to LSU departments upon request.
- iv. Maintain the University Asbestos Operation and Maintenance Plan, including periodic surveillance.

b. Facility Services

- i. Provide asbestos crew to conduct small scale removal as needed.
- ii. Ensure that asbestos workers, inspectors, and planners are trained and certified.

c. Building Coordinators

Ensure that potential asbestos problems are reported to OES in a timely fashion.

d. Building Occupants and Employees, Staff, and Faculty

- i. Foster an awareness of potential asbestos hazards and report potential problems to supervisor, building coordinators, or OES.
- ii. Do not undertake job or activity which may involve asbestos materials without checking with OES.

E. ILLUMINATION FOR OCCUPATIONAL TASKS

1. BACKGROUND

Glare, diffusion, direction, uniformity, brightness, color, and brightness ratios affect visibility and the ability to see easily, accurately, and quickly. Poor lighting is uncomfortable and possibly hazardous. The desirable quantity of light for any particular installation depends primarily upon the work that is being done. As the illumination of the task is increased, the ease, speed, and accuracy of accomplishing it are also increased. Following are two tables of levels of illumination for industrial areas as recommended by the American National Standard A11.1 "Practice for Industrial Lighting." The Office of Occupational and Environmental Safety will perform lighting measurements upon request.

2. DEFINITIONS

Footcandle - A unit of illuminance on a surface that is everywhere 1 foot from a point source of light of one candle and equal to one lumen per square foot.

Illumination Level - The quantity or amount of light falling on a surface usually expressed in foot candles.

Intensity (Luminous Intensity) - The quantity of light a source gives off in a given direction expressed in candela (formerly "candle").

Lamp - any man-made light source.

Lumen - The flux falling on a surface of one square foot in area, every part of which is one foot from a point source having a luminous intensity of one candela (candlepower) in all directions.

Luminaire - A complete lighting device consisting of lamps and parts to distribute the light.

Luminance (Photometric Brightness) - The amount of light emitted and reflected from an area of a surface measured in footlamberts. A surface emitting one lumen per square foot has a luminance of one footlambert.

Reflectance - A measure of how much light is reflected from a surface. It is the ratio of luminance to illumination.

RECOMMENDED MAXIMUM LUMINANCE RATIOS				
		Environmental Classification		
		A	B	C
1	Between task and adjacent darker surroundings	3 to 1	3 to 1	5 to 1
2	Between tasks and adjacent lighter surroundings	1 to 3	1 to 3	1 to 5
3	Between tasks and more remote darker surfaces	10 to 1	20 to 1	*
4	Between tasks and more remote lighter surfaces	1 to 10	1 to 20	*
5	Between luminaires (or windows, skylights, etc.) and surfaces adjacent to them	20 to 1	*	*
6	Anywhere within normal field of view	40 to 1	*	*

*Brightness Ratio control not practical.

A -- Interior Areas where reflectances of entire space can be controlled in line with recommendations for optimum seeing conditions.

B -- Areas where reflectances of immediate work area can be controlled, but control of remote surroundings is limited.

C -- Areas (indoor and outdoor) where it is completely impractical to control reflectances and difficult to alter environmental conditions.

NOTE: From the normal view point, brightness ratios of areas of appreciable size in industrial areas shall not exceed those in the above table.

Recommended Reflectance Values Applying to Environmental Classifications A and B	
	Reflectance (%)**
Ceiling	80 to 90
Walls	40 to 60
Desk and bench tops, machines and equipment	25 to 50
Floors	not less than 20

** Reflectance should be maintained as near as practical to recommended values.

LEVELS OF ILLUMINATION RECOMMENDED FOR SAMPLE OCCUPATIONAL TASKS

Area	Foot-Candles
Assembly-rough, easy seeing	30
Assembly-medium	100
Building construction-general	10
Corridors	20
Drafting Rooms-detailed	200
Electrical equipment, testing	100
Elevators	20
Garages-repair areas	100
Garages-traffic areas	20
Inspection, ordinary	50
Inspection, highly difficult	200
Loading platforms	20
Machine shops-medium work	100
Materials-loading, trucking	20
Offices-general areas	100
Paint dipping, spraying	50
Service spaces-wash rooms, etc.	30
Sheet metal-presses, shears	50
Storage rooms-inactive	5
Storage rooms-active, medium	20
Welding-general	50
Woodworking-rough sawing	30

1 foot-candle=10.76 lux.

From: A132.1-1973, Office Lighting.

F. HOT ENVIRONMENTS

When the rate of heat transfer from the body by convection, radiation, and sweat evaporation is not adequate, then warming of the body occurs. Excessive warming of the body can lead to heat stroke which can be fatal unless treated promptly and properly. Other consequences of heat stress include heat exhaustion, heat cramps, and heat rashes. All employees who work in hot environments shall be trained in the recognition of heat stress warning signs and the appropriate emergency treatments should symptoms occur.

1. HEAT CRAMPS

Heat cramps are the least severe of the three heat-related illnesses. They are often the first signal that the body is having trouble with the heat. Heat cramps are painful muscle spasms that usually occur in the legs and abdomen. If a person has heat cramps, take them to a cool place, loosen clothing, and give cool water or a commercial sports drink. Allow the person to drink about one glass of liquid every 15 minutes. With rest and fluids, the person should recover quickly and be able to resume activity. Keep the person drinking fluids and watch for any further signs of heat-related illness.

2. HEAT EXHAUSTION

Heat exhaustion is more serious than heat cramps. Symptoms include cool, moist, pale or flushed skin, headache, nausea, dizziness, weakness and exhaustion. As with heat cramps, get the person to a cool place and loosen the victim's clothing. Give plenty of fluids to a heat exhaustion victim. Apply cool, wet compresses to cool the person.

3. HEAT STROKE

Heat stroke is the most severe heat condition. It develops when the body systems become overwhelmed by heat and begin to stop functioning. Heat stroke is a serious medical emergency. The signals include red, hot, dry skin; changes in consciousness; rapid, weak pulse; and rapid, shallow breathing. Work to cool the person, as in the other two heat-related illness, but also call for medical help. Refusing water, vomiting and changes in consciousness indicate the person's condition is worsening. Get medical attention immediately. If the person vomits, do not give any more fluids and put him on his side. This prevents the possibility of the person choking on his vomit. Watch for breathing problems and keep the victim lying down. Cool the body as much as possible. Place cool, wet cloths or ice packs on the victim's wrists, ankles, on the groin area, armpits and neck to cool the large blood vessels. Do not apply rubbing alcohol.

4. HEAT RASHES

Heat rashes are the most common problem in hot work environments. Prickly heat is manifested as red papules and usually appears in areas where the clothing is restrictive. As sweating increases, these papules give rise to a prickling sensation. Prickly heat occurs in skin that is persistently wetted by sweat, and heat rash papules may become infected if they are not treated. In most cases, heat rashes will disappear when the affected individual returns to a cool environment.

G. ERGONOMICS

Preventing Work-Related Musculoskeletal Disorders (WMSDs)

1. WHY ARE WMSDS A PROBLEM?

Work-related musculoskeletal disorders occur when there is a mismatch between the physical requirements of the job and the physical capacity of the human body. More than 100 different injuries can result from repetitive motions that produce wear and tear on the body. Back pain, wrist tendinitis and carpal tunnel syndrome may all stem from work-related overuse. Specific risk factors associated with WMSDs include repetitive motion, heavy lifting, forceful exertion, contact stress, vibration, awkward posture and rapid hand and wrist movement.

2. RULES TO PREVENT WMSDS

- a. Look at injury and illness records to find jobs where problems have occurred.
- b. Talk with workers to identify specific tasks that contribute to pain and lost workdays.
- c. Ask workers what changes they think will make a difference.
- d. Encourage workers to report WMSD symptoms and establish a medical management system to detect problems early.
- e. Find ways to reduce repeated motions, forceful hand exertions, prolonged bending or working above shoulder height.
- f. Reduce or eliminate vibration and sharp edges or handles that dig into the skin.
- g. Rely on equipment-not backs-for heavy or repetitive lifting.
- h. Keep physically fit, maintain good muscle tone. Exercise at desk or work station.

3. SIMPLE SOLUTIONS OFTEN WORK BEST

Workplace changes to reduce pain and cut the risk of disability need not cost a fortune. For example:

- a. Change the height or orientation of the product, such as using knives with curved handles to prevent bending wrists unnaturally for a particular task.
- b. Provide lifting equipment to prevent back strain when working alone.
- c. Offer workers involved in intensive keyboarding more frequent short breaks to rest muscles.
- d. Vary tasks to avoid repeated stress for the same muscles.

4. CONTACT OES FOR ASSISTANCE

OES can review a particular task or operation that may be troublesome upon request.

I. RESPIRATORY PROTECTION PROGRAM

1. GENERAL

Where engineering controls are not feasible in completely controlling exposure to dusts, mists, or chemical agents, Louisiana State University encourages the use of respirators for protection from inhalation of these products. In some instances OSHA regulations may require the use of a respirator due to potential overexposure to a particular agent. In most instances, however, the use may be recommended to provide comfort or added protection to the individual. This added protection is the choice of the individual and constitutes “voluntary” protection.

2. GENERAL PROGRAM MANAGEMENT - RESPONSIBILITIES

The respiratory protection program is provided in the appendix. In general, OES provided technical support, departmental managers and directors are responsible for implementation of the program, and employees are responsible for following the requirements of the program.

3. VOLUNTARY USE

Voluntary respirator use applies if the employees are not exposed to hazardous agents above the permissible exposure limits, or they are not emergency responders. Voluntary use of respirators is encouraged by Louisiana State University to prevent inhalation of small amounts of potentially harmful agents that are not considered to be at hazardous levels as defined by OSHA. If the responsible person decides that respirator use is permitted, that person must ensure that the voluntary user is given the information in Appendix D of this program (“Information for Employees Using Respirators When Not Required Under the Standard”). OES also recommends that a medical evaluation is accomplished, and that the respirator is cleaned, stored, and maintained so that its use does not present a health hazard to the employee. If employees use filtering facepiece respirators (dust masks), a medical evaluation is not required.

4. RESPIRATOR SELECTION

Respirator use is work place specific. Respirators shall be assigned to individuals based upon the following their job requirements and the hazards to which the individual is exposed. Contact OES for assistance in respirator selection. More details of respirator selection requirements are contained in the appendix.

5. MEDICAL EVALUATION

A medical evaluation is required of those individuals required to wear a respirator, and recommended for those individuals using a respirator on a voluntary basis. Those wearing a filtering facepiece respirator (dust mask) do not need an evaluation. The evaluation consists primarily of filling out a questionnaire for review by a medical practitioner. Details are in the appendix.

J. NOISE

1. TECHNICAL INFORMATION

- a. OSHA permits noise exposures up 90 decibels, averaged over an 8-hour period. Noise levels are measured on the A scale of a standard sound level meter and are expressed as dBA.
- b. Paragraph 1910.95(c) of the 1983 Hearing Conservation Amendment to the Occupational Noise Exposure Standard requires employers to administer a continuing, effective hearing conservation program for all employees whose noise exposures equal or exceed an 8-hour TWA (time-weighted average) of 85 dBA or, equivalently, a noise dose that is equal to 50 percent of the PEL. The standard requires that all continuous, intermittent, and impulsive sound levels from 80 dB to 130 dB be included in the measurement of dose. In other words, the threshold level for noise measurement purposes is 80 dB.
- c. Dosimeters can be used to calculate both the continuous equivalent A-weighted sound level (L_A) and the 8-hour TWA for the time period sampled.

2. EFFECTS

- a. Auditory Effects
 - i. Chronic noise-induced hearing loss is a permanent sensorineural condition that cannot be treated medically. It is initially characterized by a declining sensitivity to high-frequency sounds, usually at frequencies above 2,000 Hz.
 - ii. Exposure of a person with normal hearing to workplace noise at levels equal to or exceeding the PEL may cause a shift in the worker's hearing threshold. Such a shift is called a standard (or significant) threshold shift and is defined as a change in hearing thresholds of an average 10 dB or more at 2,000, 3,000, and 4,000 Hz in either ear. Workers experiencing significant threshold shifts are required by 29 CFR 1910.95(g)(8) to be fitted with hearing protectors and to be trained in their use.

- b. Extra-auditory Effects. In addition to effects on hearing, noise:

Interferes with speech;

Causes a stress reaction;

Interferes with sleep;

Lowers morale;

Reduces efficiency;

Causes annoyance;

Interferes with concentration; and

Causes fatigue.

- c. Noise/Hearing Loss

Noise-induced loss of hearing is an irreversible, sensorineural condition that progresses with exposure. Although hearing ability declines with age (presbycusis) in all populations, exposure to noise produces hearing loss greater than that resulting from the natural aging process. This noise induced loss is caused by damage to nerve cells of the inner ear (cochlea) and, unlike some conductive hearing disorders, cannot be treated medically.

3. STANDARDS

- a. Time-weighted average (TWA) noise limits as a function of exposure duration are shown as follows:

Duration of Exposure (hrs/day)	Sound Level - dB(A)		
	ACGIH	NIOSH	OSHA
16	82	82	85
8	85	85	90
4	88	88	95
2	91	91	100
1	94	94	105
1/2	97	97	110
1/4	100	100	115*
1/8	103	103	---

* No exposure to continuous or intermittent noise in excess of 115 dB(A).

** Exposure to impulsive or impact noise should not exceed 140 dB peak sound pressure level.

*** No exposure to continuous, intermittent, or impact noise in excess of a peak C-weighted level of 140 dB.

- b. The OSHA regulation has an additional action level of 85 dB(A) which stipulates that an employer shall administer a continuing, effective hearing conservation program when the TWA value exceeds the action level. The program must include monitoring, employee notification, observation, an audiometric testing program, hearing protectors, training programs, and recordkeeping requirements.
- c. The OSHA noise standard also states that when workers are exposed to noise levels in excess of the OSHA PEL of 90 dB(A), feasible engineering or administrative controls shall be implemented to reduce the workers' exposure levels. Also, a continuing, effective hearing conservation program shall be implemented.

4. PROGRAM REQUIREMENTS FOR OCCUPATIONAL NOISE EXPOSURE

- a. Monitoring

The hearing conservation program requires employers to monitor noise exposure levels in a manner that will accurately identify employees who are exposed to noise at or above 85 decibels (dB) averaged over 8 working hours, or an 8-hour time-weighted average (TWA.) Under this program, employees are entitled to observe monitoring procedures and they must be notified of the results of exposure monitoring. Instruments used for monitoring employee exposures must be carefully checked or calibrated to ensure that the measurements are accurate.

- c. Noise - Training Information

Supervisors and exposed workers must become aware of and understand about the adverse effects of noise and how to prevent noise-induced hearing loss. People exposed to hazardous noise must take positive action, if progressive permanent hearing loss is to be prevented. Each exposed worker and supervisor should know the following.

- i. Noise exposure may result in permanent damage to the auditory system and there is no medical or surgical treatment for this type of hearing loss.
 - ii. Each person should know how to recognize hazardous noise even if a noise survey has not been conducted an/or warning signs posted.
 - iii. Preventing noise-induced hearing loss is accomplished by reducing both the time and intensity of exposure. Reducing exposure time is accomplished by avoiding any unnecessary exposure to loud sound. Reducing intensity is usually accomplished by wearing personal hearing protection. Each person must be able to properly wear and care for the particular type of hearing protection selected.
 - iv. Each person must know how to tell if they have been overexposed to loud sound. Overexposure may occur even while wearing hearing protection. Earplugs and/or earmuffs alone may not be enough protection. Each time a temporary threshold shift (TSS) occurs, a certain degree of permanent loss results. The recognizable symptoms of overexposure are described as "dullness in hearing or ringing in the ears."
- d. General Program Management
- i. Deans, Directors, Department Chairs, Principal Investigators, Managers and Supervisors are responsible for ensuring that noise hazards which may contribute to occupational hearing loss in there areas are evaluated.
 - ii. Occupational & Environmental Safety is responsible for:
 - 1) Monitoring and evaluating noise sources upon request.
 - 2) Providing training for potentially noise exposed individuals upon request.
 - iii. Workers responsibilities include the following:
 - 1) Learn about the potential hazards of noise exposure and follow the rules when around or operating noisy equipment.
 - 2) Wear or use prescribed protective equipment.
 - 3) Refrain from operating equipment without proper training or equipment that has safety defects.
 - 4) Attended training sessions for hazardous noise exposures.
 - 5) Be aware of the noise producing capabilities of equipment they are around or use.

VI. PERSONAL PROTECTION PROGRAM

This section applies to employees and students on campus construed to be in need of personal protective equipment by virtue of their exposure to hazards in the working, teaching, or research environment. Protective equipment shall be used and maintained in sanitary and reliable condition. Under no circumstances shall a person knowingly be subjected to a hazardous condition without appropriate personal protective equipment. Persons who are exposed to hazards requiring personal protective equipment shall be properly instructed in the use of such equipment by the individual in charge of the activity or his/her designee. It is the responsibility of the individual in charge of the activity to assure that safety practices are adhered to. If those individuals required to wear personal protective equipment fail to do so, they will be subject to disciplinary action.

A. EYE PROTECTION

1. GENERAL

- a. Persons working in or studying occupations such as painting, carpentry, construction, labor, landscape, general maintenance, metal trades, chemistry, other sciences and engineering, or any work/study activity which involves hazards such as flying objects, dust and/or vapors, hot metals, chemicals, or light radiation shall wear approved safety eyewear/goggles at all times while exposed.
- b. Custodial workers shall wear approved safety eyewear/goggles when cleaning bathroom appliances or mopping floors with caustic or abrasive cleaners.
- c. Management level employees, students, or visitors who make occasional visits to machine, welding, and carpentry shops, boiler rooms, equipment rooms, power houses, construction areas, chemistry labs, or other areas in which eye injury is a possibility shall wear approved eyewear.

2. PRESCRIPTION LENS WEARERS

If required to wear eye protection, such persons shall wear an approved face shield, goggles that fit over glasses, prescription glasses with protective optical lenses fitted with side shields, or goggles that incorporate prescription lenses.

3. CONTACT LENS WEARERS

Contact lenses shall never be considered as a substitute for eye protection; eye protection shall be worn over them.

4. APPROVAL AND SELECTION:

- a. Eye protection shall meet the ANSI Z87.1-1989 standard and the eyewear shall indicate such on the lens or the frame.
- b. Visitors to hazardous areas shall be provided protective eyewear meeting ANSI Z87.1 protection factors for visitor's eyewear.
- c. Selection chart for eye and face protectors:

This selection chart offers general recommendations only. Final selection of eye and face protective devices is the responsibility of management and safety specialists. (For laser protection, refer to American National Standard for Safe Use of Lasers, ANSI Z136.1-1976.)

**SELECTION CHART FOR EYE AND FACE PROTECTORS FOR USE IN
INDUSTRY, SCHOOLS, AND COLLEGES**

1. GOGGLES--Flexible fitting, regular ventilation. 2. GOGGLES--Flexible fitting, hooded ventilation. 3. GOGGLES--Cushioned fitting, rigid body. 4. SPECTACLES*--Without side shields. 5. SPECTACLES--Eyecup type side shields. 6. SPECTACLES--Semi-/Flat-fold side shields. 7. WELDING GOGGLES--Eyecup type, tinted lenses (illustrated). 7A. CHIPPING GOGGLES--Eyecup type, clear safety lenses (not illustrated). 8. WELDING GOGGLES--Cover spec type, tinted lenses (illustrated). 8A. CHIPPING GOGGLES--Cover spec type, clear safety lenses (not illustrated). 9. WELDING GOGGLES--Cover spec type, tinted plate lens. 10. FACE SHIELD--Plastic or mesh window (see caution note). 11. WELDING HELMET* *Non-side shield spectacles are available for limited hazard use requiring only frontal protection.		
Operation	Hazards	Protection
Acetylene-Burning	Sparks, harmful rays, molten metal, flying particles	7,8,9
Acetylene-Cutting		
Acetylene-Welding		
Chemical Handling	Splash, acid burns, fumes	2 (for severe exposure, add 10)
Chipping	Flying particles	1,3,4,5,6,7A,8A
Electric (Arc) - Welding	Sparks, intense rays, molten metal	11 (in combination with 4,5,6 in tinted lenses, advisable)
Furnace Operations	Glare, heat, molten metal	7,8,9 (for severe exposure, add 10)
Grinding-Light	Flying particles	1,3,5,6 (for severe exposure, add 10)

Grinding-Heavy	Flying particles	1,3,7A,8A (for severe exposure, add 10)
Laboratory	Chemical splash, glass breakage	2 (10 when in combination with 5,6)
Machining	Flying particles	1,3,5,6 (for severe exposure, add 10)
Molten Metals	Heat, glare, sparks,	7,8 (10 in combination with 5,6, in tinted lenses)
Spot Welding	Flying particles	1,3,4,5,6 (tinted sparks lenses advisable; for severe exposure add 10)

CAUTION:

- * Face shields alone do not provide adequate protection.
- * Plastic lenses are advised for protection against molten metal splash.
- * Contact lenses, of themselves, do not provide eye protection in the industrial sense and shall not be worn in a hazardous environment without appropriate covering safety eyewear.

5. INSPECTION AND MAINTENANCE

All eye and face protection shall be kept clean and inspected daily before each use. Badly scratched or damaged items are to be replaced immediately.

6. OTHER

It is recommended that all employees required to wear eye and face protection shall have their own and be required to inspect and maintain them in accordance with this section.

B. HEARING PROTECTION

1. EMPLOYEES/STUDENTS COVERED

Hearing protection shall be worn by employees/students when noise exposure is above that of the 90dB when measured on the A-scale of the standard sound level meter at slow response. An employees/students may also be required to wear hearing protection if hearing loss is demonstrated during audiometric testing. Audiometric testing is required at 85dBA of noise exposure and the employees/students is placed in the hearing conservation program.

2. APPROVAL AND SELECTION

- a. Personal hearing protection devices shall meet ANSI 53.19.

- b. Selection of hearing protection shall take into consideration durability, ease of fit, noise calculations in area, and length of time to be worn.
- c. There are many types of disposable and permanent hearing protection. Listed below are three:
 - i. *Earmuffs*: fluid or foam-filled cushions connected by a plastic or metal band that fits over the head. They reduce noise levels by 35-40dB depending on type and fit. In order for them to be effective, a perfect seal must be formed. Glasses, long side burns, and facial movements can reduce protection.
 - ii. *Ear Plugs*: the most commonly used ear protection device. They come in many different shapes, sizes, and materials. Ear plugs can be purchased as disposables, preformed, or molded (professionally fitted). They reduce noise levels by 25-30dB depending on type and fit. Cotton is ineffective as ear plugs.
 - iii. *Ear Caps*: a cross between ear muffs and ear plugs--ear plugs connected to a plastic (usually) band which can be worn under the chin, over the top of the head, or behind the neck. They reduce noise levels by 25-35dB depending on type and fit.

NOTE: Combinations of ear plugs and ear muffs can reduce noise level by an additional 3-5dB depending on type and fit.

3. FITTING

Preformed ear plugs have to be professionally fitted. All others are fitted according to need in accordance with LSU's hearing conservation and evaluation program.

4. INSPECTION AND MAINTENANCE

All ear protection, if not disposable, shall be inspected and cleaned before each use. All damaged ear protection shall be discarded and replaced. No unauthorized modifications shall be allowed.

5. OTHER

Noise measurements shall be performed by the Office of Occupational and Environmental Safety personnel. Noise studies shall be authorized by the Office of Occupational and Environmental Safety.

C. HAND PROTECTION

1. EMPLOYEES/STUDENTS COVERED

Hand protection shall be worn by employees when handling hot work, chemicals, electrical, material handling of rough and/or sharp items, doing landscaping work, welding, and "wherever it is necessary by reason of hazards of processes of environmental, chemical hazards, radiological hazards, or mechanical irritants encountered in a manner capable of causing injury or impairment." (OSHA 1910 Standards)

Hand protection shall not be worn while working on moving machinery such as drill saws, grinders, or other rotating and moving equipment that might catch the hand protection and pull the worker's hand into a hazardous area.

2. APPROVAL AND SELECTION

Hand protection used will meet the criteria for its particular use. Consult with OES for assistance

in selection as required. The OES web site contains chemical resistance charts for glove selection. Other factors such as durability, dexterity, and frequency and ease of donning and removing gloves are also important factors in glove selection.

3. FITTING

Gloves shall be selected to fit comfortably and snugly.

4. INSPECTION AND MAINTENANCE

All hand protection shall be kept clean and inspected daily before each use. Badly worn or damaged items are to be replaced.

5.. GLOVE MATERIALS

NOTE: For Glove selection, consult the Occupational and Environmental Safety Web Page or contact OES.

To assure resistance to a particular chemical, the user should rely upon chemical permeation and resistance data conducted by the manufacturer. Manufacturers may show different data for the same glove material.

a. Liquid Proof Styles

- i. *Butyl (cement*)* Highest resistance to permeation by most gases and water vapor.
- ii. *Viton (cement*)* Exceptional performance when subjected to chlorinated and aromatic solvents, coupled with excellent resistance to permeation by many vapors.
- iii. *Nitrile (latex*)* Superior puncture and abrasion resistance. Recommended as a general duty glove. Excellent resistance to the degrading effects of fats, petroleum products, and a wide array of chemicals.
- iv. *Natural Rubber* Excellent resistance to the degrading (cement*) effects of alcohols and caustics. Ideal for use in sand blasting.
- v. *PVC Coated* Excellent abrasion resistance in a liquid-proof glove. Also provides cushioning.

* Cement and Latex refer to two basic manufacturing processes of unsupported liquid proof gloves. As a general rule, cement dip gloves exhibit greater resistance to liquid and vapor permeation than do Latex dipped gloves. Therefore, where a permeation barrier is required, a cement dip glove shall be selected.

a. General Purpose: Fabrics And Coatings

- i. *Worknit®* Combines the toughness of a nitrile coating with the softness and stretchy comfort of jersey.
- ii. *Worknit HD™* Developed and designed to replace leather and/or heavy cotton gloves, the HD fabric has a heavier cotton liner than the regular Worknit. This glove is best used where a tough job requires a product which provides protection, excellent wear, comfort, and value.
- iii. *Coated Machine Knits*

Unique, economical answer to the general purpose glove. Offers comfort and long wear.

Four wearing surfaces instead of two. Superior grip and abrasion resistance.

- 1) *Grip-N®*, *Grip-N® Hot Mill*, *Double™ Grip-N®* (1.)Reversibility (2.)N-tread PVC coating.
- 2) *Clean Grip™* (1.)Reversible (2.)Large. Soft PVC Dots

iv. Impregnated Wovens and Jerseys

- 1) *Newtex* Woven cloth for strength. Coating for abrasion resistance.
- 2) *PVC Dotted Canton and Jersey*. The original coated glove. Cool, comfortable cotton, permanently "dotted" for longer wear and better grip.

v. Uncoated Knit Fabrics Machine Knit (string glove). 100% cotton. They are cool, comfortable, and the lowest-priced glove on the market.

vi. General Purpose: Leather

- 1) *Side Split Leather* Superior combination of strength, thickness and suppleness in split cowhide leather. A minimum of flaws, scars, and weaknesses, provides longer wear and comfort.
- 2) *Shoulder Split Leather* Provides cushioning and abrasion resistance in a more economical grade of leather.
- 3) *Grain Leather* Better flexibility, finger dexterity and fit than split leather. Generally more comfortable, but less durable than split leather.

D. RESPIRATORY PROTECTION PROGRAM

1. GENERAL PROGRAM REQUIREMENTS

See Industrial Hygiene Section and appendix for details of the program.

2. RULES FOR RESPIRATOR PROGRAM

- a. If a respirator is required by an OSHA standard or due to overexposure to a contaminant in the workplace, all of the requirements of the respirator program must be met, including medical evaluation, fit testing, maintenance, and program management.
- b. If a respirator is required by the organization (i.e., director, manager, supervisor, principle investigator), all of the requirements of the respirator program must be met, including medical evaluation, fit testing, maintenance, and program management.
- c. If respirator use is voluntary, OES recommends having a medical evaluation, fit testing, and maintenance. Dust masks do not require a medical evaluation or fit testing.

Note: Voluntary respirator use applies if the employees are not exposed to hazardous agents above the permissible exposure limits, they are not emergency responders, or they are not required by the organization. Voluntary use of respirators is encouraged by Louisiana State University to prevent inhalation of small amounts of potentially harmful agents that are not considered to be at hazardous levels as defined by OSHA.

- d. If a respirator is required use as a member of an emergency team, all of the requirements of the respirator program must be met, including medical evaluation, fit testing, maintenance, and program

management.

3. FIT TESTING

- a. Before using a respirator an employee must be fit tested with the same make, model, style, and size of respirator that they will be wearing.
- b. A qualitative fit test (QLFT) or quantitative fit test (QNFT) according to Appendix A of the attachment must be used.
- c. Air supplied or powered air purifying (PAPR) respirators must also use the fit test techniques of Appendix A of the attachment by adapting the facepieces to negative air respirators or using an identical negative air respirator as a surrogate.

4. RULES FOR MAINTENANCE, CARE AND USE OF RESPIRATORS (Does not apply to dust masks)

- a. Change filter cartridges or dispose of respirator in accordance with breakthrough times recommended by the manufacturer.
- b. Clean facepieces periodically to maintain hygienic conditions using the manufacturer's recommended cleaning product (or isopropyl alcohol, or suitable disinfectant). Emergency use respirators, respirators used by more than one person, and fit test respirators are to be cleaned after each use.
- c. Perform field fit check before each use (see appendix for procedure).
- d. Facial hair and glasses shall not interfere with respirator fit.
- e. Inspect respirators before each use and replace if defective.
- f. Store respirators to prevent contamination, moisture, or damage.

5. BREATHING AIR QUALITY AND USE.

- a. Compressed air, compressed oxygen, liquid air, and liquid oxygen used for respiration shall comply with the following specifications:
 - i. Compressed and liquid oxygen shall meet the United States Pharmacopoeia requirements for medical or breathing oxygen; and
 - ii. Compressed breathing air shall meet at least the requirements for Type 1-Grade D breathing air described in ANSI/Compressed Gas Association Commodity Specification for Air, G-7.1-1989, to include:
 - 1) Oxygen content (v/v) of 19.5– 23.5%;
 - 2) Hydrocarbon (condensed) content of 5 milligrams per cubic meter of air or less;
 - 3) Carbon monoxide (CO) content of 10 ppm or less;
 - 4) Carbon dioxide content of 1,000 ppm or less; and
 - 5) Lack of noticeable odor.
- b. Cylinders used to supply breathing air to respirators shall meet the following requirements:
 - i. Cylinders are tested and maintained as prescribed in the Shipping Container Specification Regulations of the Department of Transportation (49 CFR part 173 and part 178);

- ii. Cylinders of purchased breathing air have a certificate of analysis from the supplier that the breathing air meets the requirements for Type 1—Grade D breathing air; and
 - iii. The moisture content in the cylinder does not exceed a dew point of 50 °F (15.6 °C) at 1 atmosphere pressure.
- c. Do not use oil-lubricated compressors.
 - d. Breathing gas containers marked in accordance with the NIOSH respirator certification standard, 42 CFR part 84, shall be used.

6. IDENTIFICATION OF FILTERS, CARTRIDGES, AND CANISTERS.

All filters, cartridges and canisters used in the workplace shall be labeled and color coded with the NIOSH approval label and that the label is not removed and remains legible.

7. TRAINING AND INFORMATION

Effective training must be provided to employees who are required to use respirators. The training must be comprehensive, understandable, and recur annually, and more often if necessary. Employees who wear respirators when not required by this section or by the employer to do so must be provided the basic information on respirators in Appendix D of the attachment. Consult the appendix for training procedures.

E. FALL PROTECTION

1. EMPLOYEES/STUDENTS COVERED

Fall protection shall be utilized by those employees/students for the specific purpose of securing, suspending, or retrieving the employee/student in or from a hazardous work area, and/or when work exposes them to the risk of falling more than 6' whether outdoors or inside buildings.

2. APPROVAL AND SELECTION

Fall protection and devices and equipment shall meet ANSI A 10.14.

Selection of fall protection shall be based on the attached, "Classification of Safety Belts, Harnesses, and Lanyards."

3. FITTING

The appropriate safety belt shall be chosen for the hazard. It shall be securely buckled and worn tightly enough to prevent any possibility of the wearer slipping out.

4. INSPECTION AND MAINTENANCE

Safety belts and associated equipment shall be inspected before each use. Every one to three months they shall be inspected by a trained inspector. Cut, worn, or damaged belts, lifelines, lanyards, etc., shall be discarded and replaced. Safety belts in service shall not be tested for maximum impact loading.

NOTE: After an accidental freefall, the safety belt and lanyard shall be discarded.

5. CLASSIFICATION OF SAFETY BELTS AND HARNESSSES

Class I: Body belt (work belts), used to restrain a person in a hazardous work position and to reduce the probability of falls and to avert falls from bucket trucks.

Class II: Chest harness, used where there are only limited fall hazards (no vertical free-fall hazard) and for retrieval purposes, such as removal of a person from a tank, bin, or other enclosed place.

Class III: Body harness, used to arrest the most severe free-falls. This harness is ideal for workers on elevated sites. During a fall, it distributes the fall impact over the body.

Class IV: Suspension belts, independent work supports used to suspend or support the worker.

Lifeline: A horizontal line between two fixed anchorages.

Support capacity: 5400 lbs.

Line diameter: ½ inch.

Personal Lifeline: This system is usually a rope system that provides flexibility for worker freedom of movement, yet will arrest a fall and help absorb the shock. These systems always have some type of belt or harness that is worn around the waist to which a lanyard or rope-grabbing device is attached.

Lanyard: A short piece of flexible line used to secure wearer of safety belt to a lifeline or dropline, or fixed anchorage, such as on the boom of a bucket truck.

Support capacity: 5400 lbs.

F. FOOT PROTECTION

1. EMPLOYEES/STUDENTS COVERED

For all non-office personnel, "Footwear such as sandals, open-toed shoes, platforms, high heels,

cloth-bodied tennis shoes, or sneakers is not considered safe and is prohibited for use as a good work shoe. Well-built safety shoes, leather-bodied shoes, or boots in good condition with low heels and hard soles are to be used." (Physical Plant Operations Manual)

2. APPROVAL AND SELECTION

Foot protection used shall meet ANSI Z41.1 "Men's Safety-Toe Footwear."

FOOT PROTECTION CLASSIFICATION AND PROTECTION FACTORS

Classification of Safety Shoes

- a. Safety-toe Shoes: Steel toes and metal reinforced sole.
Usage: Areas where heavy, protruding or falling objects presents a threat.
- b. Conductive Shoes: Reduces the possibility of generating a spark.
Usage: Areas where fire and explosive hazards exist.
- c. Foundry Shoes: Contains no fasteners and is easily removed.
Usage: Areas where exposure to splashes of molten metal is likely.
- d. Explosive Operation Shoes: A shoe with non-conductive and grounding properties.
Usage: Areas where explosive compounds are present when cleaning tanks with volatile hydrocarbons.
- e. Electrical Hazard Shoes: A shoe which minimizes the hazard of conducting electricity (no metal in shoes).
Usage: Areas where electrical hazards exist.

3. INSPECTION AND MAINTENANCE

All foot protection shall be kept reasonably clean and in good repair. Shoes shall be repaired or replaced periodically.

G. HEAD PROTECTION

1. EMPLOYEES/STUDENTS COVERED

Employees/students in areas such as visiting construction sites, tree trimmers, and any work where a potential for head hazard may exist.

2. APPROVAL AND SELECTION

Head protection used shall bear the ANSI Z89.1 or Z89.2 approval, manufacturer's name, and ANSI class designation (A, B, C, or D). Employees shall only be allowed to purchase or receive them through an authorized department representative to insure compliance. Refer to the attached "Selection Chart for Head Protection for University Employees" to determine appropriate head protection.

3. FITTING

Each employee shall be individually fitted. The hard hat shall fit firmly but comfortably on the employee's head.

4. INSPECTION AND MAINTENANCE

- a. Painting: If the hard hat is to be painted, the manufacturer shall be contacted to see if the paint will affect the properties of the hat.
- b. Cleaning: Hard hats shall be washed every thirty days. If worn by more than one employee, it shall be washed daily.
- c. Inspection: Before each wearing of the hard hat, it shall be checked for wear and damages, especially the suspension system.
- d. Other: Hard hats shall not be stored or carried on the rear window shelf of a vehicle. Sunlight and extreme heat can affect the degree of protection offered. Also, the hard hat can become a projectile in an accident.

5. SELECTION CHART FOR HEAD PROTECTION FOR UNIVERSITY EMPLOYEES

- a. Hard Hat: A rigid head gear of varying materials used to protect the worker's head from impact, penetration, electrical shock, or a combination of these.
- b. Composition: Special plastics, fiberglass and plastics combination, cloth and resin, and aluminum alloy.
- c. Types:
 - i. Type 1: Helmet (hard hat), full brim. Allows for complete protection of head, face, and back of neck.
 - ii. Type 2: Helmet (hard hat), brimless with beak. This type is most commonly used and can accommodate various types of face shields and ear protection.
- d. Classes: There are four different voltage classes of head protection. University personnel covered under this section shall only be allowed to wear class A and B.
 - i. Class A: Limited voltage protection. Used by employees or students in general service (non-electrical) occupations. i.e., construction, landscape, etc.
 - ii. Class B: High voltage protection. Used by employees in electrical occupations, i.e., electricians.
 - iii. Class C: Metal helmets. Under no circumstances shall metal helmets be used by University employees or students.
 - iv. Class D: Firefighters' helmet.
- e. Other Forms of Protective Head Gear:
 - i. Bump Hats: Shall not be used unless approved by the Office of Occupational and Environmental Safety.
 - ii. Hair Protection: All employees/students with long hair or beards who work around chains, belts, or other machines with moving parts shall be required to wear protective hair coverings. Hair nets, bandannas, and turbans shall not be considered satisfactory. Contact local vendors for information on the type of protective hair coverings available. Those who work around sparks, hot metals, flames, etc., shall use flame-resistant protective hair coverings.

H. PROTECTIVE AND PREVENTIVE CLOTHING

1. EMPLOYEE/STUDENTS COVERED

Protective clothing shall be worn by employees/students when the potential of an employee/student being exposed or coming in contact with harmful substance is evident. i.e., chemicals, high heat (radiant), dust, open flame, etc.

2. APPROVAL AND SELECTION

There are many different standards for approval of protective clothing (ANSI, ASTM, etc.). Protective clothing shall be selected for specified hazard, degree of protection, comfort, and ease of use.

Once the specific or multi-hazards have been identified, contact a reputable vendor or Occupational and Environmental Safety personnel for recommendation of proper protective clothing and/or equipment needed.

3. FITTING

Protective clothing shall fit the wearer comfortably and shall not be too loose or baggy.

4. INSPECTION AND MAINTENANCE

Protective clothing shall be routinely cleaned unless disposable. Disposable clothing shall be disposed of after use. Damaged, torn, ripped, etc., clothing shall be replaced before use.

5. PREVENTIVE CLOTHING

Employees in occupations which expose them to arcs, flames, and explosions shall wear clothes which will not melt, drip, or burn in the presence of one of these hazards. Heavy cotton or flame resistant fabrics shall be worn.

VII. ENVIRONMENTAL PROGRAMS

The Environmental Section of OES encompasses many duties and several specific programs which manage the environmental impact of University activities. Strictly regulated by the Louisiana Department of Environmental Quality (LADEQ) and closely scrutinized by local inspectors, the campus community, and the general public; the Environmental Section must maintain compliance with local, state, and federal laws concerning environmental protection. Established programs that help maintain compliance are *the Hazardous Waste Program, the Management of Asbestos Containing Material, Emergency Response and Water Quality*. These programs manage hazardous activities and situations to minimize the impact on campus life.

A. HAZARDOUS WASTE MANAGEMENT GUIDELINES

The University is required to manage hazardous wastes in a safe and environmentally sound manner by federal, state, and local regulations. A generator of hazardous waste is responsible for following University guidelines concerning management and disposal of hazardous waste within a laboratory, shop or service area.

Title 33, Part V of the Louisiana Administrative Code is the state response to the federal Resource Conservation and Recovery Act (RCRA) which governs how hazardous waste will be handled and disposed of by generators. Under this code the Baton Rouge Campus is classified as a “*large quantity generator*” of hazardous waste. As a large quantity generator, LSU must strictly comply with the following requirements. All employees who generate hazardous waste in the course of their duties must:

ii DETERMINE IF THE MATERIAL IS A “HAZARDOUS WASTE”

A waste or unwanted chemical must be managed as a hazardous waste if it exhibits hazardous characteristics or is specifically listed in federal or state regulations.

a. Characteristics of Hazardous Waste

On the basis of criteria set forth by the Environmental Protection Agency (EPA) and the Louisiana Department of Environmental Quality (LADEQ), chemical waste is considered hazardous if it exhibits any of the following characteristics:

i. Ignitability(D001)

- 1) Liquids, other than aqueous solutions containing less than 24% alcohol by volume, that have a flash point below 60° C (140° F).
- ?? Non-liquids that are capable of causing fire by friction, absorption of moisture, or spontaneous chemical changes and, when ignited, burn vigorously and persistently to create a hazard.
- ?? Flammable compressed gases.
- ?? Oxidizers such as chlorates, permanganates, inorganic peroxides, or nitrates that yield oxygen readily to stimulate the combustion of organic matter.

ii. Corrosivity(D002)

- 1) Aqueous solutions that have a pH equal to or less than 2 or equal to or greater than

12.5. However, wastes with pH ranges 2-6 and 11-12.5 are also managed as hazardous waste because of sewer discharge regulations and SARA Title III requirements.

- 2) Liquids capable of corroding SAE 1020 steel at a rate greater than 6.35 mm/year at 55° C.

iii. Reactivity(D003)

- 1) Substances that react with water violently or produce toxic gases or explosive mixtures.
- 2) Substances that are unstable.
- 3) Explosives.
- 4) Substances that contain cyanide or sulfide that generate toxic gases when exposed to a pH in the range between 2 and 12.5.

iv. Toxicity

- 1) A solid waste containing the contaminants listed in the following table at or above the maximum concentration listed when tested by TCLP.

EPA Waste Number	Max Concentration (mg/l)	Contaminant
D004	5.0	Arsenic
D005	100.0	Barium
D006	1.0	Cadmium
D007	5.0	Chromium
D008	5.0	Lead
D009	0.2	Mercury
D010	1.0	Selenium
D011	5.0	Silver
D012	0.02	Endrin
D013	0.4	Lindane
D014	10.0	Methoxychlor
D015	0.5	Toxaphene
D016	10.0	2,4 - D
D017	1.0	Silvex

b. Listed Hazardous Waste

EPA and LADEQ regulations also list approximately 450 commercial or off-specification chemicals, waste streams, or their spill residues which must be handled as hazardous wastes due to their acute or chronic toxicity.

For a list of these chemicals see Appendix

c. Other Criteria

OES has chosen to manage as hazardous waste certain chemicals which may not technically be considered hazardous waste under the hazardous waste regulations. Such chemicals have sufficient mutagenic, teratogenic, carcinogenic, or reproductive hazards that they warrant such special handling (e.g., ethidium bromide). In general, waste streams containing greater than 1 ppm of these wastes should be sent through the Hazardous Waste Program.

2. PROPERLY LABEL WASTE CONTAINERS

- a. Label each bottle with the words "Hazardous Waste," and the exact contents of the bottle (include percentages and water content). Labels are available from OES and can be found on our web site.
- b. Indicate the accumulation start date.
- c. Include your name, department, phone number, room(lab), and building.

3. KEEP WASTE IN COMPATIBLE CONTAINERS AND CLOSED AT ALL TIMES

- a. Containers and lids must be compatible with the waste chemicals stored in them.
- b. Keep waste containers closed at all times except when adding or removing waste.

4. STORE AND CONTAINERIZE INCOMPATIBLE WASTE SEPARATELY

A compatibility chart is located in the appendix.

5. USE POLLUTION PREVENTION TECHNIQUES TO REDUCE THE AMOUNT OF HAZARDOUS WASTE GENERATED

- a. Use microscale techniques, nonhazardous chemical substitutes, or process modification to reduce the amount of waste generated.
- b. Contact your peers, professional organizations, or vendors to learn about the latest pollution prevention techniques.
- c. Share unused chemicals within your department. Do not dispose of hazardous waste by evaporation, sewer or trash
- d. Train your employees and students in pollution prevention techniques.
- e. Use *the Chemical Redistribution Program* to recycle or reuse unused chemicals.

6. WASTE COLLECTION PROCEDURES

The following procedure shall be followed in order for your waste to be collected by OES in a prompt, effective and safe manner.

- a. Waste *must* be labeled and containerized properly.
- b. Fill out a "Request for Collection Form" (These forms are available from our office or you may download the form from our web site.) The form can be mailed to 126 Public Safety Building or faxed to 8-3577. The Hazardous Waste Coordinator will schedule a pick up time with the generator.
- c. A Hazardous Material Manifest form will be completed upon pick up and the generate is required to sign the form and keep a copy for his/her records.

Request for Collection Form & Manifest see appendix

B. HAZARDOUS WASTE MANAGEMENT FACILITIES & PROGRAMS

1. THE HAZARDOUS MATERIAL CONTROL CENTER (HMCC)

The Hazardous Materials Control Center is located at 2719 Gourrier Avenue, southeast of the Baton Rouge Campus. The building is set on ~2 acres of bordered by Gourrier Avenue on the south, pasture land on the west, the Civil Engineering Pilot Scale Kiln & Petroleum Engineering Well Facility on the north, and a small bayou on the east. This site is also ~500 yards from the Mississippi River.

The building contains an office/laboratory and individual storage areas that total ~3750 square feet. The building was designed to eliminate the possibility of waste being released from the building in the event of a fire or spill.

The HMCC operates under a 90 days short term storage permit issued by the LADEQ and the USEPA. This means that waste must be moved from the facility every 90 days. Waste is collected from the LSU personnel by OES for ultimate disposal. A Hazardous Waste Coordinator uses a vehicle designed to carry hazardous materials to collect waste from campus departments or buildings and stores the material until a waste disposal contractor is hired to remove the waste from the campus. The Hazardous Waste Coordinator is trained under the OSHA HAZWOPER regulations and holds a Commercial Drivers License (CDL) for transporting hazardous materials.

Waste collected by OES is commingled into larger drums or shelved with other compatible materials based on the on information provided by the generator. (Label)

The facility is regulated by the LADEQ and the EPA as a Treatment, Storage, Disposal Facility(TSDF) and has completed numerous inspections by LADEQ,

2. BIOMEDICAL WASTE MANAGEMENT

Biomedical Waste materials are generated throughout the campus in various departments. Three(3) department have a shared responsibility for disposal of the waste.

The Student Health Center collects, stores, and disposes of medical waste generated at its facility as well as other departments.

The School of Veterinary Medicine collects, stores, and disposes of waste generated in teaching labs and research ongoing at its facility.

OES collects ,stores, and disposes of biomedical waste generated in research labs not associated by the SVM or the SHC.

All biomedical waste shall be properly containerized, labeled, and then notify one of the facilities listed above for pick up or drop off.

3. RECYCLING PROGRAM

a. The Chemical Redistribution Program

This program is coordinated by OES and its purpose is to encourage university personnel to recycle old and unused chemicals. When OES picks up materials that are not “waste” but unwanted; the materials are placed into the redistribution program. The materials are then stored in a separate area at the HMCC and an inventory is published on a regular basis. University personnel must simply call and request the material and it will be delivered to them. *OES does not redistribute opened containers of chemicals or extremely hazardous materials.* This program saves the

university in disposal costs and chemical purchase costs.

b. Used Oil Recycling

OES collects and stores used oil and other petroleum production for recycling. A local recycler converts the used oil into a useful product for sale.

c. Lead Waste Recycling

Lead containing waste can be recycled at a local smelting facility. Used lead acid batteries and lead waste from other campus operations are shipped to this facility.

d. Silver Waste Recycling

Waste from photography and x-ray processing contains high quantities of silver. This waste is considered hazardous but it also has value and can be recycled. The silver is recovered from the waste and resold. Silver recovery units can be installed to automatically remove the silver from the waste processing fluids as they are flushed from the system.

e. PCB Ballast

Flourescent light ballast are routinely changed out on campus. Some of the older ballast contain PCBs and are considered hazardous. These ballast can be recycled by removing the hazardous component (PCBs) and then reusing the other metal components.

C. MANAGEMENT OF ASBESTOS CONTAINING MATERIALS

The management of asbestos containing materials (ACM) located in campus buildings is regulated by the state Department of Environmental Quality. Specifically, Chapter 27 of the Air Quality Regulations covers all activities in schools and state owned buildings regarding asbestos containing materials. Additional information on asbestos may be found in section V of this manual. The following guidelines must be followed when handling ACM..

1. RULES FOR THE PROPER HANDLING OF ASBESTOS CONTAINING MATERIAL(ACM)

- a. Only authorized persons can handle asbestos containing material. State regulations mandated that employees must be training and accredited to perform asbestos work.
- b. Suspect material that may contain asbestos, *should not be touched*. Contact OES or Facility Services and a training and accredited inspector will assess the situation for potential hazzards.
- c. Prior to renovation or demolition activities OES shall be consulted to determine if asbestos materials are present.
- d. OES has oversight of occupational and environmental exposure to asbestos. As such OES is the point of contact (liaison) with the LADEQ to ensure compliance with OSHA and DEQ regulations.
- e. Facility Services maintains the University Asbestos Operation and Maintenance Plan, including periodic surveillane. Periodic surveillane (PS) must be completed every six(6) months for all areas of the campus. PS consists of a visual inspection of all asbestos containing materials to note any change in condition of the material.
- f. Building Coordinators ensure that potential asbestos problems are reported to OES and Facility Services in a timely fashion.

2. CONSTRUCTION DOCUMENT REVIEW AND CONTRACTOR NOTIFICATION

- a. When contractors perform work on campus they may come into contact with asbestos containing materials. It is the University's responsibility to properly communicate the potential risk to the contractors prior to the start of work. The University must inform the contractor about the location of all asbestos in the work area. This information is communicated with the following forms.

Construction Document Review Forms and Contractor Notification Form see appendix

3. MANAGEMENT PLANS

- a. Inspections have been performed in all University buildings identifying ACM. This information is contained in Management Plan Documents. These documents are housed in the OES office and at Facility Services. The Management Plans are updated after every asbestos activity. All employees have a right to view the information for their work area.

4. EMPLOYEE TRAINING

- a. OES also provides 2 hour Asbestos Awareness Training for all employees as directed by state and federal regulations. Asbestos Awareness Training covers information about asbestos and its origins, health effect of exposure, proper identification techniques, University policy and O & M Plans, and emergency response. This ensures that all employees can protect themselves from unnecessary exposure to asbestos environments. This level of training does not permit an employee to handle ACM in any circumstance. Working with asbestos require advanced training as described below.
- b. Employees who work with asbestos on a routine basis require additional training. The training may be for 8 to 40 hours depending on the level of exposure and type of activities involved in the task the employee is required to perform.

D. WATER QUALITY

Water Quality is strictly regulated by the LADEQ. Any discharge into a body of water or the sanitary sewer may result in damage to the ecosystem and enforcement actions by the state. Some discharges are allowed ,but only when properly approved by the state through the permit process. LSU is permitted to discharge sewer waste to the city parish sewer system. LSU is also permitted to discharge wash water into a local bayou by the LADEQ.

1. PERMIT MANAGEMENT

- a. City Sewer Discharge Permit Management

LSU is the largest user of water and the largest discharger of waste in the parish. Sanitary sewer waste is discharged off campus into city parish sewage treatment facilities. The waste sent off campus is routinely monitored by LSU and City Parish employees to insure that only normal sewage is being discharged. Waste must fall within a set criteria when it reaches the treatment plant. Waste falling outside the established limits will be surcharged; or in other words, the University will be fined.

- b. State Discharge Permit - Landscape Services

LSU is permitted to discharge wash water from landscaping operations into a local bayou by the LADEQ. LSU applied for and was granted a Louisiana Water Discharge Permit (LWDP) for landscape services. This permit only allows discharge which meets a strict criteria. The discharge must be sampled and tested quarterly by LSU to insure that the discharge falls within the regulatory requirements.



LSU

OFFICE OF OCCUPATIONAL AND ENVIRONMENTAL SAFETY

BUILDING INSPECTION CHECKLIST FOR FIRE AND GENERAL SAFETY

This Checklist is to be used for building inspections by building coordinators and faculty members when fire and general safety is being checked. The inspection form is designed to prompt the inspector to observe for the conditions listed and respond in the "yes" column if everything is in order. Any "no" answer should be accompanied by an explanation in the "comments" column to assist in identifying and correcting the problem.

Please Note: Laboratories must be inspected using the appropriate laboratory checklist.

Item	YES	NO*	Description	Comments (Be Specific!)**
MEANS OF EGRESS (Corridors and passageways to exits, including the exit)				
1			Are stair handrails in place on both sides of staircase and in good condition? Are stair treads in good condition?	
2			Are corridors and exits free and clear of all obstructions, with room furniture arranged to provide easy access to the exit?	
3			Do exit doors swing in the direction of exit travel with panic hardware properly attached and in good working order (no sticking, etc.)?	
4			Will fire doors and exit doors close and latch completely? Are fire doors kept closed? (Fire doors are those which have a "fire rating", which is shown on a label located on the door frame and on the back edge of the door, normally near the top of the door)	
5			Are exits properly marked and illuminated? Are passageways adequately illuminated with all bulbs working?	
6			Is an emergency lighting system inspection on file and current?	
FIRE PROTECTION				
1			Are all fire extinguishers in place and charged.	
2			Is fire alarm system, including smoke and/or heat detectors, operable and able to be heard throughout the building (current inspection on file)?	
3			Are fire evacuation plans posted throughout and in good condition?	
4			Are labs, storage areas, kitchens, and equipment rooms fire rated rooms?	

5			Is sprinkler head clearance of 18" maintained (nothing stacked, installed or stored within 18 inches of the heads)?	
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ELECTRICAL			
1			Are extension cords used in place of permanent wiring only in temporary situations? Are they adequately sized for the electrical current, protected against damage, and equipped with factory or Facility Services installed receptacles (the minimum size for an extension cord is #16AWG.)?
2			All electrical cords and extension cords are in good shape with no fraying, swelling, splicing or patches?
3			Where work with portable tools and/or cords is in a wet area, are ground fault interrupters used (unless the tools are double insulated)?
4			Do all electrical junction and switch and receptacle boxes have covers that are closed tightly? Are switches labeled where their purpose is not obvious?
5			Are circuit breakers labeled as to their function and all covers complete (no blanks) and in place?
GENERAL SAFETY CONSIDERATIONS			
1			Emergency phone numbers posted on telephones?
2			Janitor closets, equipment rooms, and stairwells free of general storage? Are flammables, other than small quantities for research, instruction or maintenance activities, stored in fire rated cabinets or approved storage?
3			Housekeeping at time of inspection adequate? Are attic areas clear of storage?
4			Floors in good condition with no loose tiles or other tripping hazards?
5			Outdoor grassy areas, sidewalks, stairs and parking lots in safe condition?
6			Indoor air quality -- Is the air free from irritating or nuisance odors? Are walls, and other areas free from mildew, mold and excessive dusts?
OTHER CONDITIONS THAT REQUIRE ATTENTION:			

** "NO" answers must be accompanied by comments that explain corrective action needed.*

*** Specific location, room #, equipment number, etc.*

Report completed by:

Date:

Title:

Building:



BUILDING INSPECTION CHECKLIST FOR FIRE WATCH PERSONNEL

This Checklist is to be used for building inspections by FIRE WATCH personnel when observing for fire hazards. The inspection form is designed to prompt the inspector to observe for the conditions listed and respond in the "yes" column if everything is in order. Any "no" answer should be accompanied by an explanation in the "comments" column to assist in identifying and correcting the problem. The form should be completed at the end of the work shift and recorded with the fire watch files. Items which need immediate correction should be corrected on the spot by the fire watcher or by contacting the responsible party. Use of this form should not in any way delay sounding the fire alarm or starting an evacuation for a fire.

Building: _____

Item	YES	NO*	Description	Comments (Be Specific!)**
1			Are corridors and exits free and clear of all obstructions, with room furniture arranged to provide easy access to the exit?	
2			Are exit doors in good working order (no sticking, etc.)? Will fire doors and exit doors close and latch completely?	
3			Are exits properly marked and illuminated? Are passageways adequately illuminated with all bulbs working?	
4			Are all fire extinguishers in place and charged.	
5			Are fire evacuation plans posted throughout and in good condition?	
6			Are doors on labs, storage areas, kitchens, and equipment rooms kept closed? (Office doors normally do not have to be closed when the office is occupied.)	
7			If building is sprinklered, is sprinkler head clearance of 18" maintained (nothing stacked, installed or stored within 18 inches of the heads)?	
8			All electrical cords and extension cords are in good shape with no fraying, swelling, splicing or patches? Are they routed so as to avoid tripping hazards or damage to the cords?	

9			Do electrical junction and switch and receptacle boxes have covers that are closed tightly?	
10			Emergency phone numbers posted on telephones?	
11			Janitor closets, equipment rooms, and stairwells free of general storage? Are flammables, other than small quantities for research, instruction or maintenance activities, stored in fire rated cabinets or approved storage rooms or cabinets?	
12			Housekeeping at time of inspection adequate?	
13			Floors in corridors or exit paths in good condition with no loose tiles or other tripping hazards?	
OTHER CONDITIONS THAT REQUIRE ATTENTION:				

* "NO" answers must be accompanied by comments that explain corrective action needed.
 ** Specific location, room #, equipment number, etc.

Report completed by: _____ Initials: _____ Date: _____ Shift: _____
 (Print name)

Routing instructions:
 Turn this form in to your supervisor or the building coordinator. If a log is being kept on the fire watch, you may also have to sign the log.



LSU

OFFICE OF OCCUPATIONAL AND ENVIRONMENTAL SAFETY

HAZARD LOG

This Hazard Log is to be maintained to assure that reported hazards are corrected in a timely manner, and to assure that the employees and others who may be exposed to the hazard are warned. Hazards that are documented in inspections are not listed in this log.

Hazard No.	Date Reported	Date Corrected	Description of Hazard	Nature of warnings issued
1				
2				
3				
4				
5				
6				
7				
8				
9				

Hazard No. (Cont'd)	Date Reported	Date Corrected	Description of Hazard	Nature of warnings issued
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				

